BLM

Bureau of Land Management

MONTICELLO FIELD OFFICE

Draft Resource Management Plan AND Environmental Impact Statement

NOVEMBER 2007

Bureau of Land Management Monticello Field Office

Draft Resource Management Plan and Environmental Impact Statement

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MONTICELLO DRAFT EIS

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U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

DRAFT
RESOURCE MANAGEMENT PLAN
AND
ENVIRONMENTAL IMPACT STATEMENT

MONTICELLO FIELD OFFICE
MONTICELLO, UTAH

Prepared by the

Monticello Field Office

November 2007

Selma Sierra
State Director, Utah

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155
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Dear Reader:

Enclosed for your review is the Draft Resource Management Plan (DRMP) and Draft Environmental Impact Statement (DEIS) for the Utah Bureau of Land Management (BLM) Monticello Field Office (FO). This document was prepared by the BLM in consultation with cooperating agencies and in accordance with the National Environmental Policy Act of 1969 (NEPA), the Federal Land Policy and Management Act of 1976 (FLPMA), current regulations, BLM's Land Use Planning Handbook (H-1601-1), and other applicable laws.

The Monticello Planning Area (PA) consists of approximately 4.5 million acres of land which includes 2.5 million acres of mineral estate and 1.8 million acres of public lands managed by the Monticello FO. The Monticello PA lies primarily within San Juan County with a small portion within southern Grand County. When approved, this RMP will replace the 1991 San Juan Resource Area RMP. The overall intent of the revised RMP is to develop a land use plan that will guide the management of public lands administered by the Monticello FO into the future. The Monticello DRMP/DEIS and supporting information are available on the project web site at http://www.blm.gov/ut/st/en/prog/planning.1.html.

The BLM encourages you to provide information and comments pertaining to the analysis presented in the Monticello DRMP/DEIS. Of particular importance is your feedback concerning the adequacy and accuracy of the five proposed alternatives, the analysis of their respective management decisions, and any new information that would help the BLM develop a Proposed RMP/Final EIS, which is the next phase of the planning process. In the development of a Proposed RMP/Final EIS, the decision maker may select various management decisions from each of the alternatives analyzed in the DRMP/DEIS for the purpose of creating a management strategy that best meets the needs of the resources and values in this area under the multiple use and sustained yield mandate. Your timely comments on the DRMP/DEIS will help formulate the Proposed RMP/Final EIS.

Public meetings will be held subsequent to the release of the DRMP/DEIS in order to provide an overview of the document, respond to questions, and take public comments. These meetings will be announced by local media and public mailings. Public meetings will be held in Monticello, Moab, Blanding, Montezuma Creek, and Salt Lake City, Utah.

Comments may be submitted electronically at UT_Monticello_RMP_Comments@blm.gov. Comments may also be submitted by mail to Monticello Field Office RMP Comments, Bureau of Land Management, Monticello Field Office, P.O. Box 7, Monticello, Utah 84535. To facilitate analysis of comments and information submitted, we strongly encourage you to submit comments in an electronic format.

Your review and comment on the content of this document are critical to the success of this planning effort. If you wish to submit comments on the DRMP/DEIS, we request that you make them as specific as possible. Comments will be more helpful if they include suggested changes, sources, or methodologies, as well as references to particular sections or page numbers. Comments containing only opinions or preferences will be considered and included as part of the decision-making process, but they will not receive a formal response from the BLM. Comments will be accepted for ninety (90) calendar days following the Environmental Protection Agency's (EPA) publication of its Notice of Availability in the Federal Register. The BLM can best utilize your comments and resource information submissions if they are received with the review period.

It is BLM's practice to make available for public review all comments, including the names and addresses of respondents. Before including your address, phone number, e-mail address, or other personal identification information in your comment, be advised that your entire comment, including your personal identification information, may be made publicly available at any time. You may request in your comment that we withhold your personal identification information from public review; however, we cannot guarantee that we will be able to do so. All submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations and businesses, will be available for public inspection in their entirety.

BLM would like to thank our cooperating agency partners who have worked so hard to help us complete this document. They have provided support and expertise in helping focus the issues and develop the alternatives to help resolve the many compelling resource concerns that face the Monticello FO. We would like to particularly recognize San Juan County and the State of Utah (and its agencies) that served as cooperating agencies on this DRMP/DEIS. Their experience and dedication has made this a better process, and the BLM looks forward to continued cooperation with these agencies. We also extend thanks to those individuals and organizations that have provided extensive information and the many excellent ideas that have been considered during this process.

Copies of the DRMP/DEIS have been sent to affected federal, state, and local government agencies. Copies of the DRMP/DEIS are available for public inspection at the San Juan County, Grand County, and Salt Lake City public libraries. Copies are also available for public inspection at the following BLM locations:

Moab Field Office	**Monticello Field Office**	**Utah State Office, BLM**
82 East Dogwood	**365 N. Main**	**440 West 200 South, Suite 500**
Moab, UT 84532	**Monticello, UT 84535**	**Salt Lake City, UT 84101**

Thank you for your continued interest in the Monticello FO Resource Management Plan. We appreciate the information and suggestions you have contributed to the planning process.

Sincerely,

Selma Sierra
State Director, Utah

Monticello Field Office Planning Area
Draft Resource Management Plan and Environmental Impact Statement

Lead Agency: U.S. Department of the Interior, Bureau of Land Management
Type of Action: Administrative
Jurisdiction: Southern two-thirds of San Juan County with a small portion on the northern boundary within Grand County.

Abstract: This Draft Resource Management Plan (RMP) and Environmental Impact Statement (EIS) describes and analyzes alternatives for the planning and management of public lands and resources administered by the Bureau of Land Management (BLM), Monticello Field Office. The Monticello planning area is located in southeastern Utah and includes the southern two-thirds of San Juan County with a small portion on the northern boundary within Grand County. Within the Monticello planning area, the BLM manages approximately 4.5 million acres of land which includes about 2.5 acres of mineral estate and 1.8 million acres of public land managed by the Monticello FO

The BLM is revising this RMP to address the availability of new data and policies, emerging issues, and changing circumstances that have occurred during the 16 years since the Record of Decision for the existing plan was signed. As part of the RMP revision process, the BLM conducted a scoping period to solicit input from the public and interested agencies on the nature and extent of issues and impacts to be addressed in the Draft EIS. Planning issues identified for this RMP revision focus on recreation and travel, minerals, special designations, and non-WSA lands with wilderness characteristics.

To assist the authorized officer in making decisions, cooperating agencies and the public in focusing on appropriate solutions to planning issues, five alternatives for the RMP are considered in the Draft EIS. **Alternative A** is a continuation of existing management (No Action Alternative). Under this alternative, use of public lands and resources continue to be managed under the 1991 San Juan Resource Area RMP. **Alternative B** emphasizes management actions to conserve ecosystem health and protect landscapes as well as encourage non-motorized recreation. **Alternative C** (Preferred Alternative) provides a balanced approach to management that addresses issues identified during public scoping. This alternative emphasizes protection of important natural resources as well as commodity production and a full range of recreation opportunities. **Alternative D** emphasizes commodity production and motorized recreation. **Alternative E** emphasizes protection of non-WSA lands with wilderness characteristics. The preferred alternative is not a final agency decision; it is an indication of the agency's preliminary preference because it reflects the best combination of decisions to achieve BLM goals and policies, meets the purpose and need, addresses the key planning issues, and considers the recommendations of cooperating agencies and BLM specialists.

When completed, the RMP revision will provide a set of comprehensive, long-range decisions for: (1) managing resources throughout the planning area and (2) identifying allowable uses on the public land surface and federal mineral estate administered by the BLM. Comments are accepted for 90 days following the date the U.S. Environmental Protection Agency publishes the Notice of Availability for this Draft RMP/DEIS in the *Federal Register*. Comments should be submitted via the RMP project website at http://www.blm.gov/ut/st/en/prog/planning.1.html. Additionally, comments may be submitted via email to UT_Monticello_RMP_Comments@blm.gov, or may be mailed via US Postal Service to:

Bureau of Land Management, Monticello Field Office
Attn: RMP Comments
P.O. Box 7
Monticello, UT 84535

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EXECUTIVE SUMMARY

ES.1 INTRODUCTION

The BLM Monticello (Utah) Field Office (Monticello FO) is revising its current land use plan, the San Juan Resource Area Resource Management Plan (RMP), which was signed in 1991. The new plan revision, which is to be called the Monticello RMP, and its accompanying Environmental Impact Statement (EIS), would provide the management direction for public lands within the boundaries of the Monticello FO. The newly revised RMP covers the same area as did the 1991 RMP, which is two-thirds of San Juan County with a small portion located within southern Grand County (BLM 1991). The Monticello FO planning area (Monticello PA) comprises approximately 4.5 million acres of land which includes approximately 2.5 million acres of mineral estate and 1.8 million acres of public land administered by the BLM. Elevations vary from approximately 3,700 feet above sea level near Lake Powell to 11,360 feet in the Abajo Mountains.

The Monticello PA is situated in the canyon, plateau, and desert areas of the Colorado Plateau Physiographic Province. The Monticello PA encompasses Glen Canyon National Recreation Area, the Abajo Mountains of the Manti-La Sal National Forest, Canyonlands National Park, Natural Bridges and Hovenweep National Monuments, and the White Mesa Ute and Navajo Indian Reservations. The Monticello FO shares boundaries with lands administered by the BLM Moab and Dolores FOs.

ES.2 PURPOSE AND NEED

ES.2.1 PURPOSE

Federal Land Policy and Management Act (FLPMA) requires that the BLM "develop, maintain, and when appropriate, revise land use plans" (43 United States Code [U.S.C.] 1712 [a]). The BLM has determined it is necessary to revise the existing land use plan (LUP) and prepare a new RMP for the Monticello PA based on a number of new issues that have arisen since preparation of the existing plan. In general, the purpose of this RMP is to provide a comprehensive framework for BLM's management of the public lands within the Monticello PA and its allocation of resources pursuant to the multiple-use and sustained yield mandate of FLPMA. In addition, the purpose of this plan revision is to:

- Reevaluate, with public involvement, existing conditions, resources, and uses, and reconsider the mix of resource allocations and management decisions designed to balance uses and the protection of resources pursuant to FLPMA and applicable law.
- Resolve multiple-use conflicts or issues between resource values and resource uses. The resulting Monticello RMP will establish consolidated guidance and updated goals, objectives, and management actions for the public lands in the decision area. The RMP will be comprehensive in nature and will address issues that have been identified through agency, interagency, and public scoping efforts.
- Disclose and assess the direct, indirect, and cumulative impacts of the reasonably foreseeable future actions resulting from the management actions in each alternative pursuant to the requirements of the National Environmental Policy Act (NEPA), its implementing regulations, and other applicable laws.

ES.2.2 NEED

A revision to the 1991 RMP is necessary because there have been significant alterations in the Monticello PA in light of new information and changed resources, circumstances, and policies that may be relevant to the future management of public lands and allocation of resources under the multiple-use and sustained yield mandate. This determination is further corroborated by a Special Evaluation Report, completed in 2002 by the Monticello FO, which concluded that some of the decisions within the 1991 RMP are in need of revision.

There have been changes in the laws, policies, and regulations that direct the management of the resources on Monticello PA public lands. There has also been an increase in the amount of new information and resource data that need to be considered to better manage the public lands. Population in and visitation to the region have grown, and population demographics have changed, as have public awareness and use of lands within the Monticello PA. Specifically, there may be a need to evaluate management prescriptions and resource allocations to address the increases in recreation and visitor use, including scenic quality and open spaces, as well as the increased interest in oil and gas development. Land use plan decisions may be changed only through the amendment or revision process.

ES.3 PUBLIC INVOLVEMENT

Public scoping is a process designed to meet the public involvement requirements of FLPMA and NEPA. This cooperative process includes soliciting input from interested agencies (federal, state and local), organizations, and individuals on issues, concerns, needs, resource uses, resource development, and resource protection. The scoping process is an excellent method for opening dialogue between the lead agency and the general public about management of the public lands and for evaluating the concerns of those who have an interest in the area.

As part of the scoping process, the BLM also requested the public to submit nominations for potential Areas of Critical Environmental Concern (ACECs) and nominations of rivers for potential inclusion in the National Wild and Scenic Rivers System.

The scoping period for the Monticello RMP began on June 4, 2003 and ended on January 31, 2004. Scoping included scheduled open houses in six communities (Green River, Monticello, Moab, Blanding, and Salt Lake City, Utah, and Grand Junction, Colorado), and visitations to 12 locations throughout the planning area by BLM personnel. In addition, news releases and radio announcements were used to notify the public regarding the scoping period and the planning process and to invite the public to provide written comments. Comments obtained from the public during the scoping period were used to define the relevant issues that would be resolved by a broad range of alternative management actions.

ES.4 PLANNING ISSUES

As noted above, issues to be addressed in the RMP were identified by the public and the agencies during the scoping process for the Monticello RMP. The Final Scoping Summary (available for review on the Monticello planning web page at www.blm.gov/ut/st/en/prog/planning.1.html), prepared in conjunction with this RMP, summarizes the scoping process. The issues identified in the Scoping Report fall into one of 10 broad categories (see below). Other resource and use

issues are identified in the BLM Planning Handbook and Manual (H1610-1). All of the following issues were considered in developing the alternatives brought forward in this RMP.

ISSUE 1. –RECREATION USE AND OHVS

How can increased recreation use, especially motorized vehicle use, be managed while protecting natural resource values?

ISSUE 2. -MINERALS

What areas will be available for mineral development, and what restrictions should be imposed?

ISSUE 3. –SPECIAL DESIGNATIONS

What areas should have special designations such as ACECs and Wild and Scenic Rivers?

ISSUE 4. –ECOSYSTEM RESOURCES

How can resources such as watersheds, wildlife, and vegetation be protected, maintained, or restored?

ISSUE 5. –LIVESTOCK MANAGEMENT

Are there areas where grazing should not be allowed due to resource conflicts?

ISSUE 6. –RIPARIAN AND WETLAND AREAS

How can riparian/wetland areas be managed to protect, maintain, and restore their proper functioning condition?

ISSUE 7. –CULTURAL AND PALEONTOLOGICAL RESOURCES

How can cultural and paleontological resources be protected from the predicted influx in visitation as well as from impacts from other resource uses (e.g., motorized recreation, livestock grazing, mineral development)?

ISSUE 8. –LAND TENURE ADJUSTMENTS AND WITHDRAWALS

What lands within the planning area should be identified as targets for acquisition, disposal or withdrawal?

ISSUE 9. –FIRE MANAGEMENT

Where is fire desired and not desired, and in what areas could fire be utilized as a management tool for vegetative treatments?

ISSUE 10. –NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

How should non-WSA lands with wilderness characteristics be managed?

ES.5 ALTERNATIVES

Some of the decisions in this Draft RMP/EIS are carried forward from the existing San Juan RMP (BLM 1991) because there are no impending issues associated with them, and they do not need to change. These decisions are common to all alternatives because a range of alternative decisions is not necessary for these resources or uses. Other decisions are common to all action alternatives (Alternatives B, C, D and E), but are different from the No Action Alternative (A) due to a change in circumstances. An overview of some specific components of each alternative of this RMP is provided below. A full discussion of each alternative is provided in Chapter 2.

ES.5.1 ALTERNATIVE A- NO ACTION

Alternative A would be a continuation of existing management under the current San Juan Resource Area Management Plan (1991) as amended.

Under Alternative A, 611,310 acres are open to cross country OHV use, 276,430 acres are closed, and OHV use is limited to either designated or existing routes in the remainder of the planning area (Table ES1). Under this alternative, 540,260 acres have limited seasonal use.

Under Alternative A, three Special Recreation Management Areas (SRMAs) would be designated to manage extensively-used recreation areas (Table ES3). Under this alternative, 10 ACECs would be designated. About 385,316 acres would be closed to oil and gas leasing. About 161,224 acres would be managed with no surface occupancy (NSO) stipulations, and 578,604 acres would be open with standard stipulations (Table ES6). The remaining 659,626 acres would be managed with timing limitation or controlled surface use stipulations.

ES.5.2 ALTERNATIVE B

Alternative B would offer more protection for wildlife and other natural resources, and favor natural systems over commodities development. It would emphasize the protection of natural resources and landscapes as well as non-motorized recreation.

Under Alternative B, zero acres would be open to cross country OHV use, 423,698 acres would be closed, and OHV use would be limited to designated routes in the remainder of the planning area (Table ES1). Approximately 1,521 miles of travel routes would be designated (Table ES2). Under Alternative B, 5 SRMAs would be designated (Table ES3).

Twelve ACECs would be designated under this alternative, and 9 segments of 9 eligible rivers would be recommended as suitable for wild and scenic river designation (Table ES4). About 416,612 acres would be closed to oil and gas leasing. About 125,105 acres would be managed with no surface occupancy (NSO) stipulations, and 365,170 acres would be open with standard stipulations (Table ES6). The remaining 876,740 acres would be managed with timing limitation or controlled surface use stipulations.

ES.5.3 ALTERNATIVE C- PREFERRED

Alternative C (Preferred Alternative) would protect important environmental values and sensitive resources while allowing for commodities development. It would provide a balance between protection of important natural resources and commodity production, as well as offer a full range of recreation opportunities.

Under Alternative C, 2,311 acres would be open to cross country OHV use, 418,667 acres would be closed, and OHV use would be limited to designated routes in the remainder of the planning area (Table ES1). Approximately 1,947 miles of travel routes would be designated (Table ES2). Under Alternative C, 5 SRMAs would be designated (Table ES3).

Six ACECs would be designated under this alternative, and 3 eligible rivers segments would be recommended as suitable for wild and scenic river designation (Table ES4). About 395,329 acres would be closed to oil and gas leasing. About 39,323 acres would be managed with NSO stipulations, and 629,472 acres would be open with standard stipulations (Table ES6). The remaining 719,501 acres would be managed with timing limitation or controlled surface use stipulations.

ES.5.4 ALTERNATIVE D

Alternative D would emphasize commodity development over the protection of natural resources, and would emphasize motorized recreation.

Under Alternative D, 2,311 acres would be open to cross country OHV use and OHV use would be limited to designated routes in the remainder of the planning area (Table ES1). Approximately 2,205 miles of travel routes would be designated (Table ES2). Under Alternative D, 5 SRMAs would be designated, (Table ES3).

No ACECs would be designated under this alternative, and no river segments would be recommended as suitable for wild and scenic river designation (Table ES4).

A total of 386,853 acres would be closed to oil and gas leasing. About 14,175 acres would be managed with NSO stipulations, and 962,283 acres would be open with standard stipulations (Table ES6). The remaining 421,000 acres would be managed with timing limitation or controlled surface use stipulations.

ES.5.5 ALTERNATIVE E

Alternative E would be based on Alternative B except 582,360 acres of non WSA lands would be managed to maintain their wilderness characteristics. These lands are managed as: closed to mineral leasing, closed to OHV use, proposed for withdrawal from mineral entry, right-of-way exclusion area, closed to disposal of mineral materials, closed to private and commercial woodland harvest, and managed as VRM I. Large areas on the west side of the Monticello FO would be difficult to access or do any kind of surface disturbing activities. Wilderness characteristics would be enhanced as would adjacent wilderness found in WSAs.

Table ES1. OHV Categories (acres) by Alternative

OHV Designation Category	Alternative A No Action	Alternative B	Alternative C Preferred	Alternative D	Alternative E
Open	611,310	0	2,311	2,311	0
Limited – designated	218,780	1,359,417	1,362,142	1,780,807	812,679
Limited use –seasonal	540,260	NA	3.8	NA	NA
Limited – existing	570,390	NA	NA	NA	NA
Closed	276,430	423,698	418,667	0	970,436

Table ES2. Designated Routes

Areas Limited to Designated Roads and Trails	Alternative A No Action[1]	Alternative B	Alternative C Preferred	Alternative D	Alternative E
B Roads	0	875	873	873	875
D Roads	0	1,521	1,947	2,205	1,342

[1] No route were formally designated in the 1991 San Juan RMP. Use of existing routes includes 890 miles of B Roads and 2,179 miles of D Roads.

Table ES3. SRMAs

SRMAs	Alternative A No Action	Alternative B	Alternative C Preferred	Alternative D	Alternative E
Number	3	5	5	5	5
Acres	703,761	508,856	508,512	505,018	508,856

SRMAs are established to manage intensively used recreation areas and generally do not restrict other uses.

In Alternative B, non-motorized recreation is emphasized.

In Alternative C (preferred), opportunities for both non-motorized and motorized recreation are provided.

In Alternative D, motorized recreation is emphasized.

Table ES4. Special Designations

Type		Alternative A No Action	Alternative B	Alternative C Preferred	Alternative D	Alternative E
Areas of Critical Environmental Concern	number	10	12	6	0	12
	acres	488,616	521,141	76,764	0	521,141
Wild and Scenic Rivers	eligible river segments	6	12	12	12	12
		56.8 miles	92.4 miles	18.4 miles	0 miles	92.4 miles
	suitable segments	Not evaluated	12	3	0	12
Wilderness Study Areas	number	13				
	acres	386,027				

Acreage may overlap (Scenic Highway and Cedar Mesa) and are different than previously published values.

Table ES5. Non-WSA Lands with Wilderness Characteristics

	Alternative A No Action	Alternative B	Alternative C Preferred	Alternative D	Alternative E
WC Units (#)	0	0	0	0	29
Acres	0	0	0	0	582,360

Table ES6. Oil and Gas Leasing Stipulations

Stipulation	Alternative A No Action	Alternative B	Alternative C Preferred	Alternative D	Alternative E
Standard	578,604	365,170	629,472	962,283	213,288
TL and CSU	659,626	876,740	719,501	421,000	545,641
NSO	161,224	125,105	39,323	14,175	53,915
Closed	385,316	416,612	395,329	386,853	971,463
Projected No. of wells/LOP	73	66	74	75	54

Oil and gas stipulations would apply to other surface disturbing activities where they are not contrary to laws, regulations, or policy.

The following stipulations would be applied to land use authorizations: 1) standard stipulations, 2) timing limitations (TL), 3) controlled surface use (CSU), and 4) no surface occupancy (NSO). Areas identified as closed would not be available for oil and gas leasing.

Areas identified as NSO and closed would be avoidance and exclusion areas for rights-of-way, respectively. NSO and closed areas may be recommended for withdrawal of locatable minerals in the future if it is determined that unacceptable resource conflicts are occurring.

ES.6 Affected Environment

The Monticello FO is known for both its scenic quality and its recreational opportunities, which are an important land use in the planning area. Approximately 2 million visitors per year enjoy the diverse and varied recreational opportunities of the planning area and is an important part of San Juan County's economy. Recreational opportunities include scenic driving, mountain biking, hiking, rafting and boating, rock climbing, riding off-highway vehicles (OHVs), and horseback riding. The many trail-based recreational activities in the planning area are highly dependent upon route systems.

Mineral exploration and development are another major use of public lands in the Monticello PA. The oldest oil field in Utah is in the Monticello PA. Oil was discovered in Mexican Hat in 1879. In 1956 the development of the Aneth field sparked oil and gas exploration in San Juan County which continues to this day. Production of oil and gas is currently taking place in Mexican Hat, Aneth, Lisbon Valley and the Blanding Basin. There are approximately 42 active oil and/or gas fields in the Monticello PA.

Uranium and vanadium deposits can be found within 17 historical mining districts throughout the planning area. With the recent rise in oil, gas and uranium prices, there has been renewed interest in exploration and development of these mineral resources in the Monticello FO. Other mineral resources within the planning area that are likely to be developed during the life of the plan include: placer gold, limestone, building stone, sand and gravel, and clay.

Other land uses within the planning area include rights-of-way (ROWs) for roads, pipelines, powerlines, and communication sites, film permits, and livestock grazing.

Many important natural and cultural resources are found in the Monticello PA. A number of federally listed wildlife species inhabit the planning area, including the Mexican spotted owl, Southwestern willow flycatcher, Colorado pikeminnow, humpback chub, and bonytail chub. The planning area also contains habitat for mule deer, elk, desert bighorn sheep, pronghorn, Gunnison Sage-grouse and Gunnison’s prairie dog.

Pre-Columbian cultural sites affiliated with Pueblo people, and sites related to Archaic and Paleo Indian cultures are present (12,000 – 5,000 B. C.). Historic Period (post-Columbian) occupation in the area includes one National Historic Trail (Old Spanish National Historic Trail) and one pioneer historic trail (Hole in the Rock). Other historic properties are related to Ute, Navajo, Apache sites and Anglo ranching, farming and mining locations. Over 28,000 cultural sites have been recorded.

ES.7 Environmental Consequences

Selection of Alternative A, the No Action Alternative, would maintain the current rate of progress in meeting land health standards and protecting resource values. It would allow for use levels to mostly continue at current levels in the same places in the planning area, with adjustments required in order to meet Standards for Rangeland Health or to mitigate resource concerns in compliance with existing laws and regulations.

Alternative B would have the least potential to adversely impact physical and biological resources and would protect a variety of vegetation types and wildlife habitats. Alternative B would be restrictive to resource extraction. Alternative B would have potential for short-term adverse impacts to local economies and businesses that depend on public land for resource extraction.

Implementation of Alternative C would allow for many uses to continue but would constrain certain activities in order to maintain or protect important natural resources. This could result in some short-term adverse impacts to local economies and resource extraction businesses, but long-term economic benefits would be gained from the emphasis on a diversity of recreational activities.

Alternative D offers the greatest potential benefits to the local economy from resource extraction, although economic benefits from recreation use would not be maximized. Resource extraction uses would generally be least encumbered by management decisions under this alternative. Alternative D would result in greater impacts on the physical and biological environment than actions proposed under Alternatives B, C, or E.

Alternative E would be the same as Alternative B, except 582,360 acres of non WSA lands with wilderness characteristics would be managed to maintain their wilderness characteristics. This alternative would be the most restrictive for access and resource extraction. Some benefit to back country recreation would be realized.

See Table 2.2 at the end of Chapter 2 for a summary of potential impacts by alternative. Detailed descriptions of impacts of the five alternatives are provided in Chapter 4, along with a discussion of the cumulative impacts, irretrievable and irreversible commitments of resources, and unavoidable adverse impacts of the alternatives.

ES.8 Preferred Alternative

Alternative C is identified as the preferred alternative based on examination of the following factors:

- Balance of use and protection of resources
- Extent of the environmental impacts

This alternative was chosen because it best resolves the major issues while providing for common ground among conflicting opinions as well as multiple uses of public lands in a sustainable fashion. In the opinion of BLM, it provides the best balance of resource protection and use.

ES.9 NEXT STEPS

The comment period on this Draft RMP/EIS will extend for 90 days following publication of the EPA's Notice of Availability in the Federal Register. After comments are received they will be evaluated. Substantive comments could lead to changes in one or more of the alternatives, or in the analysis of environmental consequences. A Proposed RMP and Final Environmental Impact Statement will then be completed and released. If protests are received on the Proposed RMP/FEIS, they will be reviewed and addressed by the Director of the BLM before a Record of Decision and Approved Plan is released.

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1.0 INTRODUCTION

The Federal Land Policy and Management Act of 1976 (FLPMA) directs the Bureau of Land Management (BLM) to develop and periodically revise its Resource Management Plans (RMPs), which guide management of BLM-administered public lands. The BLM Field Office (FO) in Monticello, Utah, is revising the San Juan RMP, which was last updated in 1991 (BLM 1991a). The new RMP, called the Monticello RMP, will provide planning guidance for public lands managed by the Monticello FO in San Juan and Grand Counties in southeastern Utah.

The Monticello planning area (PA) includes approximately 4.5 million acres of private, State of Utah, Indian reservation, national forest, national park, and BLM-administered public lands. Within the PA, BLM manages more than 1.8 million surface acres and nearly 2.5 million subsurface acres. The Monticello PA lies almost entirely within San Juan County, with a small portion in southern Grand County.

1.1 PURPOSE AND NEED FOR THE PLAN

1.1.1 PURPOSE

The purpose of the RMP is to provide a comprehensive framework for BLM management of public lands within the PA and allocation of resources pursuant to the multiple-use and sustained-yield requirements of the FLPMA, which stipulates that the BLM "develop, maintain, and when appropriate, revise land use plans" (43 United States Code [U.S.C.] 1712 [a]). Revising the plan will allow the BLM to re-evaluate, with public involvement, existing conditions, resources, and uses and determine how to allocate resources and make management decisions that balance uses against resource protection. The planning process identified a reasonable range of possible management alternatives, and this draft RMP/draft Environmental Impact Statement (DEIS) describes and evaluates these alternatives. The purpose of the DEIS is to disclose and assess the direct, indirect, and cumulative impact of reasonably foreseeable future actions resulting from the management decisions in each alternative as required by the National Environmental Policy Act (NEPA), its implementing regulations, and other applicable law.

The resulting Monticello RMP will establish consolidated guidance, updated objectives, and management actions for BLM-administered public lands in the PA. The RMP will be comprehensive in nature and will address issues that have been identified through agency, interagency, and public scoping.

1.1.2 NEED

The plan revision is necessary to allow the BLM to review the management of public lands comprehensively and inventory their resources and, with public involvement, to make decisions for managing those lands and their resources and allocating present and future uses. The revised plan will incorporate new information, changes in resources and their uses, and new policies, guided by multiple-use and sustained-yield principles in the FLPMA.

A Special Evaluation Report, completed in 2001 by the BLM, showed that a revision to the 1991 RMP was necessary to address changes in resource uses such as increased visitation, different types of recreation activities, and the growing demand for energy development. The policies of

several resource programs have changed since the 1991 RMP was approved, and these changes need to be considered and implemented. A growing sector of the public is challenging traditional consumptive use and development in favor of aesthetic values such as the preservation of open space, nonmotorized recreation (hiking, biking), protection of visual resources, and tourism. These new priorities need to be addressed in terms of the way they affect local communities, state and regional interests (socioeconomic and otherwise), and ecosystem health within the BLM's land-use planning authority.

1.2 Description of the Monticello FO Planning Area

Of the more than 4.5 million acres contained within the Monticello PA in southeastern Utah, the Monticello FO administers 1,785,127 surface acres of public lands (see Map 1) and nearly 2.5 million subsurface acres. The Monticello PA lies primarily within San Juan County, although a small portion extends into Grand County to the north.

The Monticello PA includes within its boundaries a number of national parks, national monuments, and lands administered by the U.S. Forest Service (USFS). Canyonlands National Park lies along the northwestern portion of the PA boundary; Natural Bridges National Monument lies in its southwestern part; and a large unit of the Manti-La Sal National Forest lies in the center. Land ownership within the PA consists primarily of large blocks of BLM-administered public land interspersed with smaller, privately owned tracts and land owned by the State of Utah School and Institutional Trust Lands Administration (SITLA). The McCracken Split Estate is jointly administered by the BLM and the Bureau of Indian Affairs (BIA), and all of the land south of the San Juan River is within the Navajo Nation Reservation. Table 1.1 shows land ownership and corresponding acreages within the Monticello PA.

Table 1.1. Land Ownership within the Monticello PA

Ownership	Acres
BLM	1,785,127
Navajo Nation Reservation	1,278,476
National Park Service (NPS)	528,565
Private	353,516
SITLA	202,318
USFS	319,933
Total	**4,467,935**

Source: BLM 2004a.

The Monticello PA is known for its topographic diversity, extraordinarily striking landforms, and scenic attractions. It contains a wide variety of cultural and paleontological resources with numbers and concentrations of sites exceeding those found elsewhere in the region. The topography is defined largely by high mountains, steep escarpments and ridges, and incised canyons, which are primarily a product of eroded sandstones and exposed igneous intrusions, such as the Abajo and La Sal Mountains. Elevations vary from approximately 3,700 feet above sea level near Lake Powell to over 11,000 feet in the Abajo Mountains. Much of the Monticello PA provides habitat for desert bighorn sheep, pronghorn, Rocky Mountain elk, and mule deer.

Numerous raptor species, including bald eagles and peregrine falcons, also live in the area. Fish species that inhabit the rivers and waterways include humpback chub, Colorado squawfish, and razorback sucker.

Historical and traditional land uses within the Monticello PA, such as livestock grazing, hard-rock mining, and energy and mineral development, continue to be widely practiced. Energy and mineral resources include oil, natural gas, uranium, vanadium, and building stone. However, recreational activities, such as backpacking, off-highway vehicle (OHV) use, and sightseeing, are becoming increasingly popular within the PA. Recreational resources provide opportunities for public enjoyment as well as revenue for businesses in and adjacent to the Monticello PA.

1.3 PLANNING PROCESS

The FLPMA requires the BLM to use land-use plans as tools by which "present and future use is projected." The FLPMA's implementing regulations for planning, 43 CFR, Part 1600, state that land-use plans are a preliminary step in the overall process of managing public lands, "designed to guide and control future managements actions and the development of subsequent, more detailed and limited scope plans for resources and uses." Public participation and input are important components of land-use planning. The Monticello FO initiated the process by publishing a notice of intent (NOI) in the *Federal Register* on June 4, 2003.

The RMP planning process can be broken down into the following nine steps:

Step 1	Scoping and identifying issues, concerns, and opportunities
Step 2	Development of planning criteria/legislative constraints
Step 3	Collection of inventory data and information
Step 4	Analysis of the Management Situation (AMS)
Step 5	Formulation of alternatives
Step 6	Estimation of effects of alternatives
Step 7	Selection of preferred management plan. This step includes preparation and public distribution of the Draft RMP/EIS.
Step 8	Selection of the RMP. This step involves preparation and public distribution of the Proposed RMP/Final EIS
Step 9	Monitoring and evaluation

The major documents produced during the RMP preparation process include the following:

- The preplanning analysis;
- Scoping Report;
- Analysis of the Management Situation (AMS);
- Draft RMP/EIS, which includes the Preferred Alternative;
- Proposed RMP/Final EIS; and
- Record of Decision (ROD) and Approved RMP.

1.3.1 SCOPING AND IDENTIFYING ISSUES, CONCERNS, AND OPPORTUNITIES

Public scoping is a process designed to meet the public-involvement requirements of the FLPMA and NEPA. Public input helps focus management analysis and actions. During scoping, concerns are raised, and important issues are prioritized for analysis. Information gathered is carefully considered and used to develop land-use allocations or alternative management plans to protect natural, historical, or cultural resource values and provide recreational and commercial opportunities. This process includes working closely with cooperating agencies (state and local governments and other federal agencies) and soliciting input from interested organizations and individuals on issues, concerns, needs, and resource uses, development, and protection.

The scoping period for the Monticello RMP began on June 4, 2003, with publication of the notice of intent in the *Federal Register* and ended on January 31, 2004. Scoping included scheduled public meetings in six communities (Green River, Moab, Monticello, Blanding, and Salt Lake City, Utah; and Grand Junction, Colorado). In addition to the meetings, comments were solicited from the public via an Internet Web site, by mail, and by staff, who traveled to popular recreation locations within the PA. For the Monticello planning process, comments from the public were categorized in one of three ways:

1. Issues to be addressed in the Monticello RMP;
2. Issues to be addressed through policy or administrative action (and therefore not addressed in the RMP); and
3. Issues beyond the scope of the RMP.

During scoping, all stakeholders were given the opportunity to voice concerns, identify issues, and nominate Areas of Critical Environmental Concern (ACECs). Additionally, discussions with BLM resource specialists identified management concerns. All the information obtained was then used to define the relevant issues to be addressed in a broad range of alternative management scenarios. The environmental impacts of these alternatives are analyzed and addressed in this DEIS, which will be made available for public review.

The RMP revision process provides the BLM, its cooperators, and the public the opportunity to resolve resource-management conflicts or concerns and respond to opportunities that fulfill the BLM's multiple-use, resource-management mission. Such issues may be identified as local, state, or national, or they may reflect conditions specific to the Monticello PA. Here are the planning issues that will be addressed in the Monticello RMP.

1.3.1.1 CULTURAL RESOURCES

The planning area is known for its extraordinarily high density of cultural resources, particularly Anasazi sites, many of which are yet to be recorded. Changes in legislation governing the management of cultural resources on federal lands or associated with federal projects have been implemented since the publication of the 1991 RMP. Other laws and regulations regarding tribal-government sovereignty and orientation between governments did not exist during development of the 1991 RMP. Cultural resources provide a direct link between Native Americans and their past, and they request protection for these resources.

The RMP provides an opportunity to enhance cultural-resource management within the PA and address tribal concerns and values in compliance with new requirements. Issues of concern include these:

- Conflicting BLM policies of providing OHV use and protecting cultural resources as required by the National Historic Preservation Act (NHPA, Section 106);
- Need for an OHV travel plan that limits use to designated trails to prevent impact to cultural resources;
- Impact on cultural resources created by increasing demand for access to public lands;
- Need for additional access to public lands by Native Americans for their traditional uses and practices;
- Resolution of the increasing conflict that pits other land uses (such as recreation activities, livestock grazing, woodcutting, and energy exploration and development) against the protection and preservation of cultural resources;
- Protection of sensitive cultural resources through special-area designations;
- Protection of sensitive cultural resources from vandalism;
- Management of National Historic Trails (Old Spanish National Historic Trail and Hole in the Rock Trail) in compliance with the intent of the enabling legislation so that the historic resource is protected; and
- Need to revise existing management plans for Butler Wash, Cedar Mesa, and Hovenweep ACECs and limit recreation use that has adverse effects on cultural resources.

1.3.1.2 Minerals and Energy Resources

There are a number of concerns regarding the level of oil, natural gas, and hard-rock mining activities within the planning area:

- Resolving the impact of surface disturbances from mineral exploration and development on other resources and uses (particularly cultural and visual resources, wildlife, and recreation) while remaining in compliance with federal energy policies;
- Improving mitigation standards for reclamation and restoration following mineral development;
- Making oil and natural gas development compatible with dispersed and remote recreational opportunities;
- Identifying areas which require mineral withdrawal to resolve conflicts between resource development and special protection for cultural and water resources, wildlife habitat, unique geologic formations, or high scenic values;
- Making development of alternative energy resources compatible with other resource decisions;
- Determining social and economic impacts of mineral development on the governments and citizens of the counties within the Monticello PA;
- Determining social and economic impacts of mineral development on a PA that contains extraordinary scenic and visual resources;
- Determining impacts of mineral development (nighttime lighting) on the quality of the scenic and wilderness experience;
- Managing and developing oil and natural gas resources on the McCracken Split Estate; what regulations will foster energy production while protecting other resource values and uses?

- Managing and developing oil and natural gas resources in Lockhart Basin to limit impact on the outstanding scenic values of the area, as viewed from both within the basin and adjacent public lands and national parks.

1.3.1.3 Non-Wilderness Study Area (WSA) Lands with Wilderness Characteristics

Management of non-WSA lands with wilderness characteristics is being considered as an option in this land use planning process for those lands that the BLM has determined have wilderness characteristics. Pursuant to the FLPMA and the *Land Use Planning Handbook* (BLM 2005a), the BLM may not establish new WSAs, but may consider managing non-WSA lands with wilderness characteristics through land-use planning, and has the option to manage such lands in a way that would protect or preserve some or all of those characteristics. This may include protecting certain lands in their natural condition and providing outstanding opportunities for solitude and primitive and unconfined types of recreation.

1.3.1.4 Recreation

Recreation use in the Monticello PA has continued to grow in popularity since the approval of the 1991 RMP. The wide range of recreational opportunities available and the spectacular scenery, both within the PA and in the nearby national parks and monuments, draws many visitors to the area. With the number of visitors continuing to grow, recreation activity is expanding farther into the backcountry, and resource and user conflicts are becoming more common, more intense, and more difficult to manage. Recreation resource issues to be addressed in the planning process include these:

- The need to manage OHVs by developing a travel plan with maps showing motorized (single-track vehicles, ATVs, jeeps, etc.) and nonmotorized (equestrian, hiking, biking) travel trail systems to identify recreation opportunities, prevent conflicts among recreation users, and minimize adverse impacts to sensitive resources (cultural resources, wildlife and their habitat, etc.);
- The need to develop specific management plans for high-use areas, including Dark Canyon, Cedar Mesa, Hole in the Rock, the San Juan River, and the Colorado River, that manage use, provide opportunities, and minimize conflicts with other resource values and uses;
- The need to develop management plans for the Special Recreation Management Areas (SRMAs) and the Extensive Recreation Management Area (ERMA) that provide the desired activities, settings, experiences, and benefits (benefits-based management) consistent with the objectives of recreation management;
- The need to resolve recreation-related human health and safety problems, including hazardous road conditions, disposal of human waste, and protection of water quality;
- The need to manage visitors to adjacent national parks and monuments who spill over onto public lands in the PA. Visitor management is needed not only to maintain desired environments and facilities but also to resolve conflicts among users and minimize impacts to other resources;
- The need to alleviate impacts of other resource uses on recreation opportunities, including motorized and nonmotorized travel, livestock grazing, mineral development, and fire management;

- The need for a private permit system to promote the optimum recreation experience and resolve endangerment of other resource values in areas being "loved to death" by growing recreation use;
- The need to resolve conflicts between private and commercial river users and establish limits on use that enhance recreation experiences and protect other resource values; and
- The need to minimize impacts of increasing backcountry recreation use on other resource values and reduce tension among recreation users.

1.3.1.5 SPECIAL DESIGNATIONS

The existing RMP does not reflect the current level of use and the demands on certain resources, including ACECs, wild and scenic rivers, wilderness areas, and WSAs, within the Monticello PA. BLM policy and regulations require that priority be given to designation and protection of ACECs during land-use planning. Section 5(d) of the Wild and Scenic Rivers Act directs federal agencies involved in planning the use and development of water and related land resources also to consider their potential for national wild, scenic, and recreational river areas. The WSAs in the PA were created under FLMPA 603 and continue to be managed in accordance with the Interim Management Policy and Guidelines for Lands under Wilderness Review (IMP) to protect their values. This planning process, however, will establish OHV management objectives (closed or limited) within WSAs. The Monticello FO will review all current special designations, as well as other lands within the PA that meet special-designation criteria, and determine the appropriate management for them. Reviewing lands to determine whether or not an area should be specially designated does not apply to WSAs. No new WSAs will be established, and no existing ones will be altered. The only designations made for WSAs will be OHV class, VRM class, and travel-route ones.

Concerns about designation and management of special areas encompass issues that pertain to all other resources, depending on the location. Issues and concerns in these areas include pressures from increased visitation and resource development on cultural resources, biodiversity, and habitat and access questions. If special designation is required to protect sensitive resources, how will these restrictions impact development of minerals and other surface-disturbing activities?

1.3.1.6 TRAVEL

Since the current RMP was approved, travel within the PA has increased. Travel access and use levels are creating conflicts with natural and cultural resources and among different forms of travel (motorized, nonmotorized, nonmechanized, and OHVs). BLM guidance for OHV use and travel has changed, and policy requires that comprehensive travel-management planning address all travel modes and conditions, as well as the travel needs of all resource programs administered by the Monticello FO. Travel-related issues include these:

- The need for a travel plan with maps showing motorized and nonmotorized use;
- The need to define OHV categories that are compatible with other resource decisions;
- The need to resolve conflicts over OHV use and identify recreation opportunities, prevent conflicts among recreation users, and minimize adverse impacts to sensitive resources (cultural and riparian resources, wildlife and their habitat, etc.);

- The need to resolve conflicts among groups, such as nonmotorized and motorized users, river runners and OHV users, and commercial and private users, and regulate OHV use and camping; and
- The need to incorporate the BLM OHV national strategy and Utah OHV strategy into planning efforts.

1.3.1.7 Visual Resource Management (VRM) Class Designations

Visual resource management (VRM) class designations are a planning concern, especially considering the extraordinary abundance and diversity of landscapes in the Monticello PA. The 1991 RMP does not address cumulative impacts of recreational activities, livestock grazing, and oil and gas exploration and development on visual resources. Also the 1991 RMP does not reflect increases in recreation visitation or changes in visitor use patterns, which ultimately intensify encroachment into scenic areas. Issues related to VRM include the following:

- The need to review and establish VRM class designations that reflect changes in recreation visitation and other resource uses;
- The need to study the impact of increasing OHV use on landscapes and visual resources throughout the PA and limit OHV use to roads and trails; and
- The need to investigate the impact of mineral development (nighttime lighting) on landscapes in remote areas.

1.3.1.8 Wildlife and Fisheries Resources

The current RMP does not reflect modifications in crucial habitat boundaries, habitat fragmentation, or raptor protection guidelines. The various goals, objectives, and management plans for wildlife and their habitat in the 1991 plan need to reflect these changes. This planning process will establish desired future conditions and address wildlife and fisheries concerns, including the following:

- The need to address impacts of other resource uses (e.g., livestock grazing, recreation activities, OHV use) on wildlife and their habitat;
- The need to protect riparian habitat;
- The need to investigate the impact of increased recreation use, primarily camping and OHVs, on riparian areas;
- The need to increase quality habitat for fish;
- The need to determine the impact of other resource uses on wildlife habitat fragmentation;
- The need to protect sage grouse habitat along with other resource uses of public lands and explore the possibility of buffer zones around leks;
- The need to establish seasonal restrictions on mineral extraction and visitor use to protect species during sensitive periods;
- The need to assess the impact of fire management on wildlife habitat and populations;
- The need to discover causes for the decline in bighorn sheep and pronghorn populations and new habitat areas;
- The need to protect new habitat areas, particularly for Lockhart Basin bighorn sheep;

- The need to investigate the impact of drought on the declining quality of existing wildlife habitat;
- The need to assess the impact of increasing antler-collection activities (presence and noise of people and vehicles, cross-country OHV travel, and related surface and vegetation disturbance) on wildlife populations and their habitat; and
- The need to investigate the transmission of West Nile virus, chronic wasting disease, and hantavirus that have been documented in and adjacent to the PA.

1.3.1.9 Other Issues, Concerns, and Opportunities

In addition to the issues already identified for resolution in this planning process, Appendix C of the BLM's *Land Use Planning Handbook* (BLM 2005a) requires that a variety of other decisions be made. The following is a brief description of these issues, concerns, and opportunities. For a more detailed discussion, please refer to the scoping report (BLM 2004b).

1.3.1.9.1 Air Quality

Air quality within the PA can be impacted by increases in vehicle emissions, as well as smoke from prescribed and naturally caused wildland fires and other surface-disturbing activities.

1.3.1.9.2 Fire Management

The planning process provides the opportunity to incorporate the Utah Land Use Plan (LUP) amendment for fire and fuels management into the RMP.

1.3.1.9.3 Health and Safety

The RMP process will address hazardous materials produced by abandoned mines, oil and natural gas exploration and development, abandoned structures, hazardous-waste spills, or uranium-tailings disposal.

1.3.1.9.4 Lands and Realty

The RMP will identify lands for retention, disposal, and acquisition. Further, the plan will designate utility corridors and communication sites, as well as lands to avoid and restrict rights-of-way.

1.3.1.9.5 Livestock Grazing

The RMP will address areas available and unavailable for livestock grazing.

1.3.1.9.6 Paleontology

The RMP will set objectives for protecting fossils and address the impacts of surface-disturbing activities on them and the conflicts with other resource values and uses.

1.3.1.9.7 Soil and Water Resources

The RMP will establish watershed objectives for the PA and address issues such as sensitive soils; biological soil crusts; soil erosion, salinity, and sedimentation; priority watersheds; floodplains; water quality; and pollution.

1.3.1.9.8 SPECIAL-STATUS SPECIES

The RMP will identify and update special-status species habitat within the PA and establish objectives to manage that habitat for species that include the Mexican spotted owl, southwestern willow flycatcher, western yellow-billed cuckoo, and Gunnison sage grouse. Also included is the protection of aquatic and riparian habitat for these and other listed and candidate species.

1.3.1.9.9 VEGETATION, INCLUDING RIPARIAN RESOURCES

Some resource uses (e.g., grazing, mineral development, OHV use, and recreation) can impact the natural function and condition of watersheds. A healthy cover of perennial vegetation stabilizes the soil, increases infiltration, prevents runoff, provides clean water to adjacent streams, and minimizes noxious-weed invasion. The RMP will establish objectives to protect, maintain, and restore upland and riparian vegetation.

1.3.1.9.10 WOODLANDS

The RMP will address a number of woodland issues, including forest health, fuel loading, human-caused wildland fire risks and hazards, desired woodland composition and function, and forest needs/harvesting.

1.3.2 ISSUES ADDRESSED THROUGH ADMINISTRATIVE OR POLICY ACTION

Policy or administrative actions include those implemented by the BLM because they are standard operating procedures; because federal law, rule, or regulation requires them; or because they are BLM policy. Administrative actions do not require a planning decision to be implemented. The following issues raised during scoping are addressed by administrative actions:

- Compliance with existing laws and policies (e.g., FLPMA, NEPA, Endangered Species Act (ESA), American Antiquities Act, Clean Air Act, National Historic Preservation Act);
- Education, enforcement/prosecution, vandalism, and volunteer coordination;
- Consistency with existing federal, state, and local plans;
- Management of cultural resources, which includes up-to-date inventories, nondisclosure of sensitive sites, proposal of cultural sites for the National Register of Historic Places, and Native American consultation;
- Management of existing WSAs, which will continue under the IMP (BLM 1995) except for decisions related to VRM class, OHV, and route designations, which will be made in this RMP. Only Congress can release a WSA from consideration. Should all or part of a WSA be released from consideration, proposals in the released area would be examined on a case-by-case basis for consistency with the goals and objectives of the RMP. Actions inconsistent with RMP goals and objectives would be deferred until completion of requisite planning amendments. Because the management of the released land would continue in accordance with the goals and objectives established in the RMP, no separate analysis is required in this land-use plan to address resource impacts if any WSAs are released.
- Management of existing wilderness under its authorizing legislation—the Wilderness Act—and applicable law and policy;

- Completion of the inventory of riparian and wetland areas and the use of monitoring and mitigation to help protect these resources;
- Recreation-management public outreach and education, including a comprehensive sign system and maps;
- Administration of existing mineral leases, permits, and other authorized uses;
- Monitoring of wildlife and biodiversity;
- Monitoring of air quality;
- Mitigation measures for approved, site-specific projects;
- Control of noxious weeds;.
- Establishment of forage utilization levels, on a site-specific basis, to maintain rangeland health.
- Allocation of forage between livestock and wildlife and the application of specific management practices on allotments within the PA.
- Eligibility standards for specially designated areas;
- Coordination with local, state, and federal agencies; and
- Cooperation with user groups.

1.3.3 Issues beyond the Scope of the Plan

Issues beyond the scope of the RMP planning process include all those that do not relate to RMP decisions. They include decisions that are not under the jurisdiction of the Monticello FO or that the BLM cannot resolve as part of the planning process. Issues identified in this category include the following:

- Settlement of R.S. 2477 (i.e., right-of-way) claims. The State of Utah and San Juan and Grand Counties may hold valid existing rights-of-way in the PA according to Revised Statute (R.S.) 2477, Act of July 28 1866, chapter 262, 8, 14 Stat. 252, 253, *codified at* 43 U.S.C. 932. On October 21, 1976, Congress repealed R.S. 2477 by passing the FLPMA. This RMP does not adjudicate, analyze, or otherwise determine the validity of claimed rights-of-way. However, nothing in the RMP extinguishes any valid right-of-way or alters in any way the legal rights the state and counties may have to assert and protect R.S. 2477 rights or challenge in federal court or other appropriate venues any use restrictions imposed by the RMP that they believe are inconsistent with their rights.
- Creation of new WSAs or wildernesses. No new WSAs will be established, and no existing ones will be altered.
- Elimination of grazing, mineral development, and OHV use on all public lands;
- Regulation of activities and uses beyond the jurisdiction of the BLM;
- Revision of existing laws, policies, and regulations;
- Availability of funding and personnel to manage programs, including law enforcement; and
- Consideration of alternative energy sources as substitutes for mineral development.

1.3.4 DEVELOPMENT OF PLANNING CRITERIA/LEGISLATIVE CONSTRAINTS

Planning criteria are the constraints that guide and direct the RMP planning process, determine the way the planning team approaches the development of alternatives, and help in selecting the Preferred Alternative. These criteria are based on appropriate laws, regulations, and policy, as well as public participation and coordination with cooperating agencies, other federal agencies, state and local governments, and Indian tribes. The planning criteria ensure that the RMP is consistent with the identified issues and concerns and that unnecessary data collection and analyses are avoided.

The planning criteria developed during the preplanning analysis for the Monticello RMP include the following:

- The RMP would recognize valid existing rights.
- Decisions made in the RMP would apply only to public lands and resources managed by the BLM.
- The BLM would use a collaborative and multijurisdictional approach, where possible, to determine jointly the desired future condition of public lands.
- The BLM would make all possible attempts to ensure that its management prescriptions and actions are as complementary as possible with other planning jurisdictions (both federal and nonfederal), subject to applicable law and policy.
- Similar management prescriptions would be considered on adjoining lands to minimize inconsistency. To the extent possible, inventories, planning, and management programs would be coordinated with other federal, state, and local agencies and tribal governments.
- Management plans would focus on the relative values of resources.
- The BLM would use the most current, available scientific information, research, technologies, and results of inventorying, monitoring, and coordination to determine appropriate local and regional management strategies to enhance or restore impaired ecosystems.
- Management of WSAs would continue under the IMP (BLM 1995). Should Congress release all or part of a WSA from consideration, resource management would be consistent with the final RMP, subject to other constraints on the relevant lands. Should the need arise, the BLM may consider amending the plan consistent with applicable law.
- The BLM would continue to inventory public-land resources and other values, including characteristics associated with wilderness, and consider such information during land-use planning.
- Utah BLM Standards for Rangeland Health and Guidelines for Grazing Management (adopted in 1997), and Guidelines for Recreation Management (adopted in 2001) would continue to be implemented. The standards and guidelines would apply to all alternatives analyzed in this EIS.
- Decisions regarding OHV use would be consistent with the BLM's National OHV Strategy.
- VRM class designations would be analyzed and modified to reflect present conditions and future needs. Areas where specific land uses need to be modified or restricted to resolve conflicts would be identified.

- Sensitive watersheds would be identified, and watershed conditions would be determined. Emphasis would be placed on watersheds identified as high priority in conjunction with other cooperators such as the Utah State Division of Water Quality and the Colorado River Basin Salinity Control Forum.
- Baseline reasonable/foreseeable management/development scenarios would be developed and implemented based on historical, existing, and projected levels for all resource programs.
- Planning would include the preservation, conservation, and enhancement of important historical, cultural, paleontological, and natural components of public-land resources. Coordination would be maintained with Native American tribes to identify sites, areas, and objects important to their cultural and religious heritage.
- Endangered-species recovery goals, including plans to reintroduce endangered and other species, would be addressed. In accordance with the Interagency Memorandum of Agreement on the ESA regarding Section 7 consultation, the BLM would jointly prepare a programmatic consultation agreement with the U. S. Fish and Wildlife Service (USFWS).
- The socioeconomic impacts of the alternatives would be addressed.
- Vegetation management objectives or desired future conditions would be developed for all parts of the PA.

1.3.5 Collection of Inventory Data and Information

Monticello FO resource specialists have collected inventory data and resource information to provide the basis for preparing the RMP. When available, new information will be used in analyzing the EIS alternatives and making planning decisions.

Geographic information systems (GIS) have been and will be used throughout the EIS analysis to store, display, and analyze resource information and data, including acreage calculations, site locations, maps, and areas of potential conflicts over resource use. After completion and approval of the RMP, this GIS information will continue to be used for resource management and activity and project planning, and additional updated resource data will continue to be collected and entered into the GIS.

Other documents that were prepared to help guide the development of this RMP include the following:

- The Mineral Potential Report (BLM 2005b)
- The Scoping Report (BLM 2004b)
- Analysis of the Management Situation (BLM 2005c)
- Reasonably Foreseeable Development Scenario for Oil and Gas (BLM 2005d)
- ACEC Evaluations for Existing and Nominated ACECs (BLM 2005e)
- Wild and Scenic River Report (BLM 2004c)
- Non-WSA Lands with Wilderness Characteristics Evaluations (BLM 2007a)

1.3.6 Analysis of the Management Situation (AMS)

The AMS describes the existing status and management of resources and facilities within the Monticello PA. It provides an analysis of the management programs administered by the Monticello FO, assesses the capability of resources to meet current demands, and assesses the

adequacy of current management practices. Where no management concerns or conflicts are identified, current management practices are carried forward into the proposed RMP. Any identified problems or concerns that involve resource allocations, land use, or management practices are resolved through this EIS process. Copies of the AMS for the current planning process are available for public review at the Monticello FO and the BLM Utah State office in Salt Lake City.

1.3.7 Preparation of the Draft Resource Management Plan (DRMP) and Draft Environmental Impact Statement (DEIS)

The draft stage of the RMP comprises the formulation of alternatives, analysis and disclosure of impacts, and selection of a Preferred Alternative.

The No-Action Alternative described in the DEIS is management under the current RMP, plus subsequent planning documents and amendments. As required by Council on Environmental Quality (CEQ) regulations, alternative actions are formulated to represent a reasonable range of management options that emphasize certain uses or resource values over others under the multiple-use and sustained-yield mandate of the FLPMA to achieve certain goals or objectives (see Section 1.3.1., Scoping and Identifying Issues, Concerns, and Opportunities). The NEPA requires the BLM to analyze and disclose the effects of the various alternatives. Based on that analysis, the BLM has, at this time, identified and recommended Alternative C as the Preferred Alternative. This is documented in the DRMP/DEIS, which will be distributed to the public for review and comment.

1.3.8 Selection of the Proposed RMP/Final EIS

Following review and analysis of public comments on the DRMP/DEIS, the BLM will make adjustments as warranted and select a proposed RMP. In developing the proposed RMP and final EIS, the decision maker has the authority and discretion to select an alternative in its entirety or combine components of the various alternatives presented. The regulations at 43 CFR §§1610.3-2(e) and 1610.5-2, respectively, provide, prior to the approval of the proposed RMP, a 60-day period for the governor of Utah to make a "consistency review" and a 30-day period for "any person who participated in the planning process and has an interest which is or may be adversely affected by the approval" of the proposed RMP/final EIS to protest to the BLM director.

1.3.9 Complete Record of Decision (ROD) and Approved Plan

The publication of the ROD and approved RMP completes the RMP planning process. Substantial changes to the proposed plan due to the governor's review or a protest resolution will be published and subject to public review prior to final approval. The ROD will include appeal provisions for any implementation decisions in the approved RMP. Monitoring and evaluation are an ongoing step in the planning process and continue during the life of the plan.

1.3.10 Monitoring and Evaluation

During this step, resource condition and trend data are collected and analyzed to determine the effectiveness of the RMP in resolving the identified issues and achieving desired results. Adaptive management practices may be used where applicable. Implementation of decisions requiring subsequent action is also monitored. Monitoring continues from the time the RMP is

completed until changing conditions require revision of the whole plan or any portion of it. Monitoring and evaluation of the approved RMP follow a set schedule and will be documented via plan supplements, amendments, or addenda.

1.4 Relationship to Other Policies, Plans, and Programs

This planning process must recognize the many ongoing programs, plans, and policies that are being implemented in the Monticello PA by other land managers and government agencies. The BLM will seek to be consistent or complementary with other management actions whenever possible. Plans and policies that need to be considered during the Monticello planning effort are as follows:

1.4.1 State of Utah Plans

- SITLA cooperative agreement and other plans
- Canyonlands Natural History Association cooperative agreement
- Regional plans of the Utah Department of Transportation (UDOT)
- State of Utah plans relating to water quality and management, nonpoint-source pollution, watershed management, and air quality
- Utah's State Comprehensive Outdoor Recreation Plan (SCORP)

1.4.2 County Land-Use Plans

- San Juan County, Utah: San Juan County Master Plan (1996)
- Grand County, Utah: Grand County General Plan Update (2004)

1.4.3 Other Federal Plans

- Canyonlands National Park Natural Resource Management Plan (1994)
- Canyonlands National Park General Management Plans (1974)
- Canyonlands National Park Backcountry Management Plan (1984, 1995)
- Manti-La Sal National Forest Land and Resource Management Plan (1986)
- Strategic Plans for Glen Canyon National Recreation Area and Rainbow Bridge National Monument (2005, 2007)
- Canyons of the Ancients National Monument Plan (draft)
- Hovenweep National Monument Plan (draft)

1.4.4 Energy Policy and Conservation Act (EPCA)

In May 2001, the Comprehensive National Energy Policy was issued, which directed the secretary of the interior to "…examine land status and lease stipulation impediments to federal oil and gas leasing, and review and modify those where opportunities exist (consistent with the law, good environmental practice and balanced use of other resources)" (NEPDG 2001).

Under this directive, the Assistant Secretary of the Interior for Lands and Minerals Management delivered to Congress an inventory of U.S. oil and gas resources in five western basins, as well as the extent and nature of any restrictions or impediments to their development. This report was

prepared at the request of Congress under the provisions of the 2000 Energy Policy and Conservation Act (EPCA) (BLM 2003a).

In April 2003, the BLM specified four EPCA integration principles, as follows:

1. Environmental protection and energy production are both desirable and necessary objectives of sound land management and are not to be considered mutually exclusive priorities.
2. The BLM must ensure appropriate accessibility to energy resources necessary for the nation's security while recognizing that special and unique nonenergy resources can be preserved.
3. Sound planning will weigh relative resource values, consistent with the FLPMA.
4. All resource impacts, including those associated with energy development and transmission, will be mitigated to prevent unnecessary or undue degradation (BLM 2003a).

1.4.5 Memorandum of Understanding (MOU) between the U.S. Dept. of the Interior and U.S. Dept. of Agriculture—Implementation of Section 225 of the Energy Policy Act of 2005 Regarding Geothermal Leasing and Permitting

The purpose of this MOU is to facilitate interagency coordination and establish policies and procedures to implement Section 225 of the Energy Policy Act of 2005, Public Law 109-58 (hereinafter, the Act). Section 225 requires the coordination of geothermal leasing and permitting on public lands and National Forest System (NFS) lands between the secretaries of the interior and agriculture.

1.4.6 Memorandum of Understanding (MOU) between the U.S. Dept. of the Interior Bureau of Land Management and U.S. Dept. of Agriculture Forest Service

The purpose of this MOU is to establish joint BLM and Forest Service policies and procedures for managing oil and gas leasing and operational activities pursuant to oil and gas leases on NFS lands.

1.4.7 Oil Shale and Tar Sands Leasing Programmatic EIS (PEIS)

The Monticello FO contains areas of tar sands. This resource has been, and currently is, available for lease under the Combined Hydrocarbon Leasing Act of 1981 and in accordance with the decisions in the existing BLM land-use plans/amendments.

These major tar-sand resources lie only in Utah within 11 designated special tar-sands areas (STSAs) managed by the BLM Vernal, Price, Richfield, and Monticello FOs. One of these STSAs lies within the Grand Staircase-Escalante National Monument, where leasing is prohibited. The Monticello FO manages one of the remaining 10 STSAs.

When the Monticello RMP revision was initiated in 2002, there was no reasonable foreseeable development expectation for tar sands over the life of the plan. The mineral report identified this resource but did not expect any leasing or development due to prevailing and anticipated economic factors.

After the start of this RMP revision, Congress enacted the Energy Policy Act of 2005. Section 369 of the Energy Policy Act requires the Secretary of the Interior to "complete a programmatic

environmental impact statement for a commercial leasing program for oil shale and tar sands resources on public lands, with an emphasis on the most geologically prospective lands within each of the States of Colorado, Utah, and Wyoming." On December 13, 2005, the BLM published a Notice of Intent in the *Federal Register* initiating a Programmatic Environmental impact statement (PEIS) to support a commercial oil-shale and tar-sands leasing program on federal lands in these three states.

In light of this statutory requirement, all decisions related to tar-sands leasing in this RMP are being deferred to the ongoing PEIS on oil-shale and tar-sands leasing. In the event that the ROD on the final PEIS on oil shale and tar sands is issued before one for the Monticello proposed RMP/final EIS, the decisions in the oil-shale and tar-sands ROD will be incorporated into the Monticello RMP.

Combined hydrocarbon and tar-sand leasing in the STSAs will also be deferred to the PEIS. Additional opportunities for public involvement and comment will occur when the draft of the PEIS becomes available. Site-specific requirements will be addressed in future NEPA analysis for particular project applications after the PEIS is completed. This RMP will, however, develop allocation decisions for conventional oil and gas leasing in the STSAs.

1.4.8 The Energy Policy Act of 2005 and the Western Energy Corridor PEIS

An interagency West-wide energy corridor PEIS is currently being developed to implement Section 368 of the Energy Policy Act of 2005 (Energy Right-of-way Corridors on Federal Land). The final West-wide energy corridor PEIS will amend RMPs in the western U.S., providing decisions to address numerous energy corridor issues, including the utilization of existing corridors (with enhancements and upgrades) and the identification of new ones, supply and demand considerations, and compatibility with other corridor and project-planning efforts. It is likely that the identification of corridors in the West-wide energy corridor PEIS will affect the Monticello PA. Consequently, the decisions in the ROD on the final West-wide energy corridor PEIS will be incorporated into the Monticello RMP.

1.4.9 Endangered Species Recovery Plans

- Northern States Bald Eagle Recovery Plan (USFWS 1983)
- The Recovery Implementation Plan for the Endangered Fish Species in the Upper Colorado River Basin (USFWS 1987)
- Bonytail Chub Recovery Plan (USFWS 1984, 1990a, 2002a)
- Humpback Chub Recovery Plan (USFWS 1979, 1990a, 2002b)
- Colorado Pikeminnow Recovery Plan (USFWS 1978, 1990, 1991, 2002c)
- Mexican Spotted Owl Recovery Plan (USFWS 1995)
- Razorback Sucker Recovery Plan (USFWS 1999, 2002d)
- Final Recovery Plan for the Southwestern Willow Flycatcher (USFWS 2002e)

1.4.10 EXISTING EISS

- Utah Combined Hydrocarbon Leasing Regional Final EIS (1984)
- Utah BLM Statewide Wilderness EIS (1990)
- Vegetation Treatments Using Herbicides on BLM lands in 17 Western States Programmatic Environmental Report (2007b)
- Programmatic EIS on Wind Energy Development on BLM-administered lands in the Western United States (BLM 2005f)
- Vegetation Treatment on BLM lands in 13 Western states (BLM 1991b)

2.0 PROPOSED ACTION AND ALTERNATIVES

This chapter presents 5 alternative proposals for managing public lands in the Monticello Field Office (FO). In accordance with the federal guidelines implementing The National Environmental Policy Act (NEPA), a range of reasonable alternatives has been identified that could accomplish the objectives of the proposed actions. BLM considered issues and concerns raised during scoping, identified goals and objectives associated with the resources and allowable uses on the public lands, and developed a reasonable range of alternatives with varying management decisions that would allow BLM to prioritize and balance competing uses under the multiple use and sustained yield mandates of the Federal Land Policy and Management Act of 1976 (FLPMA). The alternatives were designed to achieve the goals and objectives. BLM recognizes that social, economic, and environmental issues cross land ownership lines, and that extensive cooperation is needed to actively address issues of mutual concern. To the extent possible, these alternatives were crafted utilizing input from public scoping comments, San Juan County representatives, and other cooperating agencies. Those alternatives that did not meet the Purpose and Need, or that are not technically feasible or economically practical, were eliminated from detailed consideration.

Chapter 2 has been organized in the following manner:

- Section 2.1 provides descriptions of the alternatives carried forward for detailed environmental analysis.
  - Table 2.1 provides a summary of the alternatives.
- Section 2.2 provides a comparative summary of the environmental impacts associated with each alternative.
  - Table 2.2 provides a summary of the impacts.
- Section 2.3 outlines those alternatives the BLM initially considered but later eliminated from detailed analysis, and the justifications for their dismissal from further evaluations.

Evaluation of the alternatives to the Proposed Action is required by NEPA and by the Council on Environmental Quality (CEQ) (40 CFR §1502.14). The reason for this statutory mandate is that some aspects of the proposed actions may impact the environment in a manner that could be minimized or even eliminated by using an Alternative Action. Alternatives to the proposed action have been developed to:

- meet project Purpose and Need;
- respond to environmental, operational, and economic concerns raised by the public, agencies, business and other special interest groups during the scoping process; and
- address potential environmental or engineering issues that have been identified during review of the proposed actions.

2.1 DESCRIPTION OF ALTERNATIVES

There are 5 alternatives presented. Alternative A (the "No Action" Alternative, a continuation of the existing 1991 RMP) is presented for comparison to the action alternatives. There are four action alternatives; Alternatives B, C, D, and E represent variations in the existing management and are generally distinguished by the degree of resource protection use.

Alternative A (No Action) would be a continuation of existing management practices defined in the San Juan Resource Management Plan (BLM 1991a, as amended). The current plan maintained "multiple use management while providing protection or enhancement to unique and sensitive resources." Areas were designated as open, limited, and closed to OHV travel. ACECs were used extensively to manage cultural and recreation resource and use.

Alternative B would minimize human activities, offer more protection for wildlife and other natural resources, and favor natural systems over commodities development. Decisions include minimizing routes and enlarging critical habitat for wildlife. All proposed ACECs are considered in this alternative. All eligible wild and scenic rivers (WSRs) are considered for suitability in this alternative. Oil and gas leasing stipulations were determined and used to protect sensitive resources.

Alternative C (Preferred Alternative) would balance the protection of important environmental values and sensitive resources with commodities development. All areas were designated as open, limited, and closed to OHV travel and routes were designated to allow access and protect resources. A balanced use of ACECs and WSRs was used to protect important resource values.

Alternative D emphasizes commodities development over the protection of natural resources. No ACECs were considered in this alternative. No WSRs were brought forward in this alternative. Protection of wildlife habitat was minimized to that required by law, regulation, or policy. Access was maximized; as no acres were closed to OHV travel and almost the entire area was designated as limited to OHV travel.

Alternative E would be based on Alternative B, except it emphasizes protection of 582,360 acres of non-WSA lands with wilderness characteristics and allows for other activities consistent with that emphasis. Large areas on the west side of the Monticello FO would be difficult to access or do any kind of surface disturbing activities. Wilderness characteristics would be enhanced as would adjacent wilderness found in WSAs.

Table 2.1 provides a detailed description of the alternatives carried forward for detailed environmental analysis and is organized alphabetically by resource (i.e. air quality, cultural, fire management, etc.). There are twenty resources listed. Each section includes goals, management common to all alternatives, and then a comparative listing for each alternative of the proposed management decisions. If the proposed management for two different alternatives is the same then management prescriptions will not be repeated, merely indicated by a "same as Alternative…" Occasionally, the proposed management decisions are the same but the acreage or the time frames they are applicable to changes, this is indicated in the text.

2.1.1 Brief Summary and Highlights of the Alternatives in Table 2.1

The major resources/uses where issues were identified during scoping were: travel management, recreation, oil and gas leasing and development, special designations (ACECs and Wild and Scenic Rivers), special status species, wildlife, and non-WSA lands with wilderness characteristics. These resources/uses, among others, are displayed under a range of management alternatives that set forth different priorities and measures to emphasize uses or resource values over other uses or resource values to achieve specific goals or objectives outlined in detail in Table 2.1. Below is a brief summary of the range of alternatives for those major resources/uses

brought forward during scoping. Much more detail for each of these resources and uses, among others, and their proposed management is in Table 2.1.

2.1.1.1 TRAVEL MANAGEMENT

All public lands are required to have off-highway vehicle (OHV) area designations. Areas must be classified as open, limited, or closed to motorized travel activities. OHV designation areas, or categories, are listed by alternative. Within the "Limited" category, routes would be limited to "designated roads and trails" (43 CFR Part 8340.0-5(g)). Specific routes are being designated as open to motorized use by alternative as part of implementation level planning. Summary Table A portrays how travel and access management would be designated under each alternative.

Summary Table A. OHV Acreage and Mileage Designations by Alternative

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Open	611,310	0	2,311	2,311	0
Limited – Seasonal Restrictions	540,260	N/A	3.8[1]	N/A	N/A
Limited – Existing Roads and Trails	570,390	N/A	N/A	N/A	N/A
Limited – Designated Roads and Trails	218,780	1,359,417	1,362,142	1,780,807	812,679
Closed	276,430	423,698	418,667	0	970,436
Total[2]	**N/A[3]**	**1,783,115**	**1,780,809**	**1,780,807**	**1,783,115**
Miles of Routes Designated	2,179[4]	1,521	1,947	2,205	1,342

[1]This acreage applies to Arch Canyon.

[2]Acreage figures may vary by alternative due to the changes in GIS technology and variances in shapefiles.

[3]Acres are not additive under this alternative because of overlap between limited use categories.

[4] Miles of existing routes; but undesignated in the 1991 San Juan RMP.

2.1.1.2 RECREATION

Special Recreation Management Areas (SRMAs) are proposed to manage intensively used recreation areas, and do not restrict other uses. In Alternative B, non-motorized recreation is emphasized; in Alternative D, motorized recreation is emphasized. Alternative C provides opportunities for both non-motorized and motorized recreation. Alternative E emphasizes non-motorized recreation and protection of naturalness, outstanding opportunities for solitude, and outstanding opportunities for primitive and unconfined recreation. These are depicted in Summary Table B.

Summary Table B. SRMAs by Alternative (acres)

Category	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
SRMAs	15,100	528,856	525,512	525,018	508,856

2.1.1.3 Oil and Gas Leasing and Development

One of the major decisions in a land use plan is to determine which areas should be: 1) open to leasing subject to the terms and conditions of the standard lease form stipulations, 2) areas open to leasing subject to moderate constraints such as timing limitations (TL) or controlled surface use (CSU) restrictions, 3) areas open to leasing subject to major constraints such as NSO stipulations, or 4) areas unavailable to leasing. All of these proposed decisions must be consistent with the goals and objectives of other resources and uses for each alternative. Summary Table C depicts how oil and gas leasing would be managed under each alterative.

Summary Table C. Oil and Gas Leasing Stipulations (acres), by Alternative

Stipulation	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Standard	578,604	365,170	629,472	962,283	213,290
TL/CSU	659,626	876,740	719,501	421,000	545,641
NSO	161,224	125,105	39,323	14,175	53,915
Closed	385,316	416,612	395,329	386,853	974,463

In addition, this planning revision has applied the same oil and gas stipulations to all other surface-disturbing activities where they are not contrary to laws, regulations, or policy under all of the action alternatives. For example, if an area has a timing stipulation on it for oil and gas development, BLM would also apply that same timing stipulation on a right-of-way (ROW) construction proposal or an organized recreational event.

2.1.1.4 Special Designations

2.1.1.4.1 Potential Areas of Critical Environmental Concern (ACEC)

The *Federal Register* Notice of Intent (June 2003) for this plan revision requested ACEC nominations from the public for consideration in the planning effort. In order to be considered and carried forward into the range of alternatives for planning, an ACEC must meet the relevance and importance criteria in 43 CFR 1610.7-2(a), and must require special management. The Monticello FO received and evaluated a total of 17 ACEC nominations of which 13 were determined to meet the relevance and importance criteria. The relevance and importance criteria encompass scenery, sensitive plant species, rare plants, cultural and historic resources, wildlife, fish, natural systems, and natural hazards. Summary Table D shows that all of the 13 potential ACECs were brought forward into Alternative B for designation consideration, and 7 potential ACECs were brought forward into Alternative C for designation consideration. There are 10 existing designated ACECs in the Monticello Planning Area (MPA); and therefore 10 in Alternative A. There were no ACECs brought forward for consideration in Alternative D. Where ACECs are designated, special management attention would be directed at the relevant and important values, resources, natural systems and/or natural hazards.

Summary Table D. Proposed total acreage of Potential ACECs by Alternative

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
488,616	521,141	76,764	0	521,141

2.1.1.4.2 WILD AND SCENIC RIVERS (WSRS)

During planning, the BLM must assess all eligible river segments and determine which are suitable or non-suitable per Section 5(d)(1) of the Wild and Scenic Rivers Act of 1958, as amended. The Monticello FO reviewed all river segments for wild and scenic river eligibility and suitability as part of the RMP process. Twelve river segments were found to meet the eligibility criteria. BLM Manual 8351 (BLM 1993b) directs the BLM to provide tentative classifications of Wild, Scenic, or Recreational to the eligible river segments. Under the No Action Alternative (Alternative A), six river segments were identified as eligible for inclusion in the National Wild and Scenic River System. These six segment wouild be managed to protect their free-flowing nature and outstandingly remarkable values until their suitability for inclusion in the Wild and Scenic River System is determined. Alternative B would recommend and manage all of the segments as suitable for Congressional designation into the system, and Alternative C would recommend three river segments as suitable for Congressional designation into the system. The number of miles of rivers recommended suitable for designation are included in Table E below.

Summary Table E. Wild and Scenic Rivers Recommended Suitable by Alternative

Alternative	BLM River Miles	Total River Miles	Classifications
A[1]	56.8	59.2	Recreational, Scenic, Wild
B	92.4	115.3	Recreational, Scenic, Wild
C	18.4	26.9	Scenic, Wild
D	0	0	NA
E	92.4	115.3	Recreational, Scenic, Wild

[1] Miles of river determined eligible under the 1991 San Juan RMP; but suitability not determined.

2.1.1.4.3 WILDERNESS STUDY AREAS (WSAS)

The Monticello FO manages 13 wilderness study areas totaling approximately 386,027 acres. Please see the Special Designation section of Table 2.1 for details.

2.1.1.5 SPECIAL STATUS SPECIES

Land use plan decisions should be consistent with BLM's mandate to recover listed species, and should be consistent with objectives and recommended actions in approved recovery plans, conservation agreements and strategies, MOUs, and applicable biological opinions for threatened and endangered species. The Monticello PA has eleven threatened, endangered, and candidate wildlife, fish, and plant species. They are the Black-footed ferret, Bald eagle, California condor, Southwestern willow flycatcher, (Mexican) spotted owl, (Western) yellow-billed cuckoo, Bonytail, Colorado pikeminnow, Humpback Chub, Razorback sucker, and the Navajo sedge. Standard stipulations have been developed in coordination with the United States Fish and Wildlife Service (USFWS) under all alternatives.

In addition, there are 58 Special Status Species (Please refer to Section 3.16.3.1 Special Status Species, Tables 3.54 and 3.55, pages 3-152-3-158 for a complete list) where there is some discretion in management.

Timing Limitations and Controlled Surface Use stipulations are applied to the habitat of some species and are spread by alternative.

2.1.1.6 WILDLIFE

In planning, BLM should identify actions and area-wide use restrictions needed to achieve desired population and habitat conditions while maintaining a thriving natural ecological balance and multiple-use relationships. The range of alternatives for wildlife actions and habitats includes:

- **Pronghorn antelope** – A Timing Limitation stipulation for surface-disturbing activities, including oil and gas development would be applied to pronghorn habitat. The size of habitat varies by alternative.
- **Desert bighorn sheep** – Recommendations from the BLM Bighorn Sheep Rangeland Management Plan (BLM 1993c) would be adhered to were practicable. Onsite mitigation to replace forage and browse species lost would be required in bighorn habitat. The size of the habitat varies by alternative.
- **Deer and elk** – A Timing Limitation stipulation for surface-disturbing activities, including oil and gas development. Timing limitation and acreage vary by alternative.

2.1.1.7 NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

During planning, the Monticello FO identified decisions to protect or preserve non-WSA lands with wilderness characteristics (naturalness, outstanding opportunities for solitude, and outstanding opportunities for primitive and unconfined recreation). There are 582,360 acres that were found to have wilderness characteristics outside of existing WSAs; all of them would be protected and managed to preserve their wilderness characteristics values in Alternative E. There would not be specific prescriptions for wilderness characteristics under Alternatives A, B, C, and D. However, some of these areas would receive indirect beneficial protections from other resource prescriptions such as NSO, closed to leasing, VRM Class I and limited or closed to OHV use.

Table 2.1 provides a comprehensive description of the alternatives carried forward for detailed environmental analysis.

Table 2.1. Summary Table of Alternatives

MANAGEMENT COMMON TO ALL RESOURCES

The goals and objectives described below apply only to Alternatives B, C, D, and E. Goals and objectives for Alternative A are described in the 1991 San Juan Resource Area Resource Management Plan (BLM 1991a). Acreage figures for Alternative A in this matrix may vary slightly from the acreages in the existing Resource Management Plan (RMP). This variance is due to the current GIS technology that was used to recalculate more accurate acreages for existing management areas and designations.

For the purpose of this plan, off-highway vehicles (OHVs, also called off-road vehicles) are defined as any motorized vehicle capable of or designed for travel on or immediately over land, water, or other natural terrain, excluding the following: (1) any non-amphibious registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) any vehicle whose use is expressly authorized by an authorized officer, or otherwise officially approved; (4) any vehicle in official use; and (5) any combat or combat support vehicle when used in times of national defense emergencies. Designated routes can be categorized as mechanized only (bicycles), single track motorized (dirt bikes), two track motorized (4-wheelers, jeeps), available to all vehicles, or any combination of these categories.

OHV use would be limited to designated roads and trails, except in areas designated as open or closed to OHV use.

Lands within the Monticello PA would be available for oil and gas leasing subject to standard lease terms unless listed specifically in alternatives as NSO, Timing Limitations (TL), Controlled Surface Use (CSU), Controlled Surface Use and Timing Limitations (CST), or Closed.

Management for disposal of mineral materials would be available unless it is specifically stated in the alternatives to be unavailable.

Management for geophysical work would be available unless stated specifically in alternatives that it is unavailable.

The Monticello PA would be open for mining entry unless proposed for withdrawal.

Wilderness Study Areas (WSAs) would be managed according to the Interim Management Policy and Guidelines for Lands Under Wilderness Review (IMP). WSAs would be Visual Resource Management (VRM) Class I. If the WSA is released by Congress, site-specific NEPA would be completed to change the management prescriptions.

All Areas of Critical Environmental Concern (ACECs) would be retained in public ownership, would be subject to appropriate fire management response, and would have travel limited to designated routes unless otherwise noted.

Education and Interpretation

BLM would work with its partners, including local school districts and universities, to develop a variety of opportunities to promote education, research, and interpretation on public lands.

Fire, Drought, and Natural Disasters

BLM would coordinate actions with affected parties where natural resources may be impacted by fire, drought, insects and diseases, or natural disasters.

Monitoring

BLM would conduct monitoring for all resources to determine the effectiveness of management prescriptions in achieving RMP objectives or making progress toward them.

Utah Standards for Rangeland Health

BLM lands would be managed and uses would be authorized in a manner consistent with meeting or moving toward meeting Utah's Standards for Rangeland Health (BLM 1997). The current Utah Standards for Rangeland Health (as revised), augmented with ecological condition and trend objectives, would be incorporated across all resource programs as a minimum management objective. Management prescriptions in the form of constraints to use, terms and conditions, and stipulations may be needed to meet resource objectives and/or to comply with current regulations. Management prescriptions may consider, but would not be limited to, the following:

- Surface-disturbing activities: These would be closely monitored to ensure compliance with authorizations/permits, conditions of approval, or terms and conditions. Actions minimizing new surface disturbance, as well as actions insuring successful reclamation, would be of paramount concern. During periods of drought, BLM could require additional actions such as changes to standard seed mix compositions, amounts of seed, and method of application. Methods to ensure successful revegetation following disturbance could include hydromulching, installation of drip irrigation, and/or temporary fencing to exclude ungulate grazing/browsing.
- Livestock grazing: Active livestock use would be authorized in animal unit months (AUMs), season, and duration to meet static (no apparent trend) to upward trends towards achieving site-specific resource objectives. In the case of fire, drought, insects and diseases, or other natural disasters, BLM would work cooperatively to implement a grazing strategy on an individual grazing allotment basis and make changes to the annual grazing authorizations as appropriate within the limits of the existing permit and in accordance with the grazing regulations. BLM may temporarily close allotments or portions of allotments to grazing where it is determined that other, less drastic measures would not avoid degradation of vegetative resources. Temporary changes to active permitted use or grazing practices, or non-use may also be implemented voluntarily by the permittee with BLM consent.
- Wildlife management: During periods of prolonged dryness or drought or other natural disaster, to the extent that wildlife grazing ungulate populations may not be sustainable and/or impacts to the resource habitats may occur due to competition for water and/or available forage and/or overall animal health is compromised, BLM may enter into discussions with the Utah Division of Wildlife Resources (UDWR) regarding temporary adjustments in herd numbers and overall management options to address the effects of drought.
- Recreation: During periods of prolonged dryness or drought, BLM, in cooperation with local and state fire management agencies, may limit campfires to established fire rings or fully contained fires. The last resort would be to close the public lands to campfires of any kind.
- OHV use: OHV use during period of prolonged dryness could be further restricted to designated routes. If site-specific conditions warrant, closure to OHVs could be implemented to minimize vehicle-induced injury or damage to rangeland and/or woodland resources, and to minimize the potential of spark caused fires.
- SOPs would be implemented as described in Appendix I.

AIR QUALITY

GOALS

Ensure that authorized uses on public lands meet or comply with and support federal, state, and local laws and regulations.

MANAGEMENT COMMON TO ALL ALTERNATIVES

The best air quality control technology, recommended by the Utah Division of Air Quality (UDAQ), would be applied as needed to meet air quality standards.

Prescribed burns would be consistent with the State of Utah Division of Environmental Quality (UDEQ) permitting process and timed in conjunction with meteorological conditions so as to minimize smoke impacts.

BLM would comply with Utah Air Conservation (UAC) Regulation R307–205, which prohibits the use, maintenance, or construction of roadways without taking appropriate dust abatement measures.

BLM would comply with the current Smoke Management Memorandum of Agreement (MOU) between BLM, the U.S. Forest Service (USFS), and UDAQ. The MOU, in accordance with UAC regulation R301-204, requires reporting size, date of burn, fuel type, and estimated air emissions from each prescribed burn.

BLM would manage emissions to prevent deterioration to air quality in Class 1 Airsheds.

Table 2.1. Summary Table of Alternatives

CULTURAL RESOURCES

GOALS

Identify, preserve, and protect important cultural resources and ensure that they are available for appropriate uses by present and future generations (FLPMA, Section 103(c), 201 (a) and (c); National Historic Preservation Act, Section 110 (a); Archaeological Resources Protection Act, Section 14 (a)).

Seek to reduce imminent threats and resolve potential conflicts from natural- or human-caused deterioration, or potential conflict with other resource uses (FLPMA Sec. 103(c), NHPA 106, 110(a)(2) by ensuring that all authorizations for land use and resource use comply with the NHPA Section 106.

MANAGEMENT COMMON TO ALL ALTERNATIVES

BLM would nominate appropriate cultural resource objects, sites, districts, and multiple listings to the National Register of Historic Places (NRHP).

Priority geographic areas for new field inventory would be identified based upon a probability for unrecorded important resources.

BLM would ensure that all authorizations for land and resource use would comply with Section 106 of the National Historic Preservation Act (NHPA), consistent with and subject to the objectives established in the RMP for the proactive use of cultural properties in the public interest.

Impacts to any NRHP-listed or eligible cultural resource sites, objects, or districts found during an inventory would be mitigated in accordance with 43 CFR 800, generally through avoidance. Should it be determined the cultural resources eligible or listed on the NRHP cannot be avoided, consultation with the State Historic Preservation Officer (SHPO) would be initiated and the procedures identified in the National Programmatic Agreement and the Utah State BLM Protocol for meeting BLM's responsibilities under the NHPA would be followed.

BLM would consult with Native American tribes to identify, protect, and maintain access for areas of traditional and religious use that includes but is not limited to burials, rock art, traditional use areas, religiously active areas, and sacred sites.

Burial sites, associated burial goods, and sacred items would be protected in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA) and the Archaeological Resources Protection Act.

Cultural resources would be evaluated according to National Register criteria (36 CFR Part 60.4) and assigned to appropriate use categories as the basis for management decisions.

BLM would conduct a consultation process to identify both the resource management concerns and the strategies for addressing them through an interactive dialogue with appropriate Native American communities.

BLM would work with tribes and other communities with traditional linkage to public lands to identify places of traditional cultural and religious importance. To the extent allowed by statute, regulation, and policy, such locations would be managed to minimize impacts to important values and to allow continued access for traditional purposes.

BLM, in coordination with San Juan County, would continue to identify, evaluate, and nominate historic roads and trails for inclusion into the NRHP.

When new sites are discovered, interim protection may be applied until Section 106 consultation and NAGPRA (CFR 10) processes are completed, if warranted.

BLM would provide for legitimate field research by qualified scientists and institutions.

BLM would work with local communities and other groups to foster heritage tourism throughout the Monticello PA area.

Cultural sites, including ethnographic properties, would continue to be allocated to one of six management use categories: experimental, discharged from management, public, scientific, traditional, and conservation.

Protective measures would be established and implemented for sites, structures, objects, and traditional use areas that are important to tribes with historical and cultural connections to the land, in order to maintain the view shed and intrinsic values, as well as the auditory, visual, and esthetic settings of the resources. Protection measures for undisturbed cultural resources and their natural settings would be developed in compliance with regulatory mandates and Native American consultation.

For Cedar Mesa Cultural-Special Recreation Management Area, see Cedar Mesa C-SRMA, under Recreation.

MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES

Specific plans, Cultural Resource Management Plans (CRMP), and Cultural Special Recreation Management Area for Cedar Mesa would be developed for culturally sensitive areas unless included in other integrated activity plans. The CRMP would not require an amendment to the Monticello RMP if it is consistent with the goals and objectives of this RMP. Such plans would include protective measures such as restrictions and limitations on recreation around cultural at-risk areas and sites, Native American consultation, and regulatory compliance. These plans would also include but not be limited to developing cultural monitoring systems; identifying sites and areas in need of stabilization and protective measures (e.g., fences, surveillance equipment); developing research designs for selected sites/areas; designating sites/areas for interpretive and educational development; identifying areas for cultural inventory where federal undertakings are expected to occur; and developing specific mitigation measures. The plan would designate sites, districts, landmarks, and landscapes that would be nominated for inclusion on the NRHP.

BLM would proactively reduce hazardous fuels or mitigate the potential hazard around archaeological and cultural sites that are susceptible to destruction by fire from prescribed or wildland fire. Management response to fire would follow the guidelines in the Moab District Fire Management Plan.

BLM would promote collaborative partnerships to assist in meeting management goals and objectives for cultural resources.

Certain at-risk cultural properties may be posted as off-limits to visitors with pets.

Ropes and other climbing aids would not be allowed for access to ruins/cultural sites, except for emergencies or administrative needs.

Cultural sites may be closed to visitation when they are determined to be at risk or pose visitor safety hazards.

Comb Ridge Cultural Special Management Area (CSMA)

Alternative A (No Action)	Alternative B	Alternative C (Preferred)	Alternative D	Alternative E
No CSMA was identified in the 1991 San Juan Resource Area RMP, as amended. These lands are managed according to the 1991 San Juan RMP prescriptions.	Comb Ridge (38,012 acres) would be managed as a Cultural Special Management Area (CSMA) with the following prescriptions: • Managed for heritage tourism and traditional cultural values. • Unavailable for geophysical work, disposal of mineral materials, and recommended for withdrawal from locatable mineral entry. • Available for oil and gas leasing subject to NSO. • Open for campfires at designated sites. • Unavailable for private and/or commercial use of	Comb Ridge (38,012 acres) would be managed as a Cultural Special Management Area (CSMA) as in Alternative B except for the following: • Available for private and/or commercial use of woodland products including on-site collection of dead wood for campfires. • Available for range, wildlife habitat, and watershed improvements, and vegetation treatments. • Available for surface-disturbing land treatments if consistent with current law, regulations, policy, and management plan objectives.	Comb Ridge would not be managed as a Cultural Special management Area (CSMA). The area would be managed with the same management prescriptions as the adjacent areas which are: • Available for private and/or commercial use of woodland products including on-site collection of dead wood for campfires. • Available for range, wildlife habitat, and watershed improvements, and vegetation treatments. • Available for livestock use but it may be limited if cultural resources are impacted.	Comb Ridge (38,012 acres) would be managed as a Cultural Special Management Area (CSMA) with the following prescriptions: • Managed for heritage tourism and traditional cultural values. • Unavailable for geophysical work, disposal of mineral materials, and recommended for withdrawal from locatable mineral entry. • Unavailable for oil and gas leasing. • Open for campfires at designated sites. • Unavailable for private and/or commercial use of

Table 2.1. Summary Table of Alternatives

	woodland products, including on-site collection of dead wood for campfires. • Available for livestock use but it may be limited if cultural resources are impacted. • Available for range, wildlife habitat, and watershed improvements. • Available for non–surface disturbing vegetation treatments. • OHV use limited to designated routes. • The Comb Wash Campground would be developed (as proposed in 1991 Monticello RMP). • Closed to dispersed camping. Camping limited to designated camp areas and campgrounds with designated access routes and parking. • Establishment of a permit system for day and overnight use if necessary to protect cultural resources. • In camp areas without toilets, human waste must be packed out. • Designation and signing of trails from parking areas to cultural sites, which are included in the Cultural Management Plan. • Limited parking for day use to designated areas.	• Group size limited to 12 people.	• Available for surface disturbing land treatments if consistent with management plan objectives. • OHV use limited to designated routes.	woodland products including on-site collection of dead wood for campfires. • Available for livestock use but it may be limited if cultural resources are impacted. • Maintenance of existing improvements allowed; no new improvements. • Available for non-surface disturbing vegetation treatments. • Limited OHV use to designated routes and closed in non-WSA lands with wilderness characteristics. • Development of the Comb Wash Campground (as proposed in 1991 Monticello RMP). • Closed to dispersed camping. Camping limited to designated camp areas and campgrounds with designated access routes and parking. • Establishment of a permit system for day and overnight use if necessary to protect cultural resources. • In camp areas without toilets, human waste must be packed out. • Hiking to cultural sites limited to designated trails that would be developed in the Cultural Resource Management Plan. Group size limited to 12 people. • Limited parking for day use to designated areas.
Butler Wash East of Comb Ridge • No allocation limit • No private group size limit • No commercial permit or group size limit • Open to camping • Open to OHV use • Dogs allowed • No fees • Grazing allowed • Fires allowed	**Butler Wash East of Comb Ridge:** Manage the same as Comb Ridge with the following exceptions: • Private group size limited to 6. • Commercial group size limited to 12. • Butler Wash canyons closed to domestic pets and pack animals. • Designated primitive campsites. • If necessary, managed as part of Cedar Mesa permits and regulations, including regulations and permit fees. Groups would view low-impact video at Kane Gulch Ranger Station or Sand Island.	**Butler Wash East of Comb Ridge:** Manage the same as Comb Ridge and the same as Alternative B with the following exceptions: • Private group size limited to 8. • Commercial group size limited to 12.	**Butler Wash East of Comb Ridge**-Manage the same as Comb Ridge with the following exceptions: • Private group size limited to 12. • Commercial group size limited to 12.	**Butler Wash East of Comb Ridge:** Manage the same as Comb Ridge with the following exceptions: • Private group size limited to 6. • Commercial group size limited to 12. • Butler Wash canyons closed to domestic pets and pack animals. • Designated primitive campsites. • Managed as if part of Cedar Mesa permits and regulations, including regulations and permit fees. Groups would view low-impact video at Kane Gulch Ranger Station or Sand Island.
Tank Bench Cultural Special Management Area (CSMA)				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
No CSMA was identified in the 1991 San Juan Resource Area RMP, as amended. These lands are managed according to the 1991 San Juan RMP prescriptions.	Tank Bench (2,646 acres) would be managed as a CSMA with the following prescriptions: **Outlaw Canyon and South Cottonwood Wash** • Hiking limited to designated trails. • Group size limited to 12 people. • Human waste must be packed out. • Closed to domestic pets and pack animals. • Closed to OHV use. • Available for livestock use but it may be limited if cultural resources are impacted. • Available for watershed, range, and wildlife habitat improvements. • Available for non-surface disturbing vegetation treatments. • Closed to campfires. • Closed to private and/or commercial use of	Tank Bench (2,646 acres) would be managed as a Cultural Special Management Area (CSMA) the same as Alternative B except for: **Outlaw Canyon and South Cottonwood Wash** • Hiking not limited to designated trails. • Available for watershed, range, wildlife habitat improvements and vegetation treatments. • Available for surface-disturbing land treatments if consistent with management plan objectives. • Available for locatable mineral entry, disposal of mineral materials, and geophysical work. • Available for oil and gas leasing, subject to standard lease terms.	Tank Bench would not be managed as a CSMA. The area would be managed the same as adjacent areas with the following prescriptions: **Outlaw Canyon and South Cottonwood Wash** • Available for livestock use but may be limited if cultural resources are impacted. • Available for watershed, range, and wildlife habitat improvements. • Available for locatable mineral entry. • Available for disposal of mineral materials and geophysical work. • Available for oil and gas leasing, subject to standard lease terms. • Available for campfires. • Available to private and/or commercial use of woodland products, including the on-site collection of dead wood for campfires.	Tank Bench (2,646 acres) would be managed as a CSMA with the following prescriptions: **Outlaw Canyon and South Cottonwood Wash** • Hiking limited to designated trails. • Group size limited to 12 people. • Human waste must be packed out. • Closed to domestic pets and pack animals. • Closed to OHV use. • Available for livestock use but it may be limited if cultural resources are impacted. • Available for watershed, range, and wildlife habitat improvements. • Available for non-surface disturbing vegetation treatments. • Closed to campfires. • Unavailable for private and/or commercial use of

Table 2.1. Summary Table of Alternatives

	woodland products (including on-site collection of dead wood for campfires) with the exception of traditional cultural uses, as long as they do not adversely impact other resource values. • Recommended for withdrawal from locatable mineral entry, and unavailable for disposal of mineral materials and geophysical work. • Available for oil and gas leasing, subject to no surface occupancy.			woodland products (including on-site collection of dead wood for campfires) with the exception of traditional cultural uses, as long as they do not adversely impact other resource values. • Recommended for withdrawal from locatable mineral entry, and unavailable for disposal of mineral materials and geophysical work. • Available for oil and gas leasing, subject to no surface occupancy.
Beef Basin Cultural Special Management Area (CSMA)				
MANAGEMENT COMMON TO ALL ALTERNATIVES BLM would work with USFS and NPS to develop Interagency Recreation Commercial permits.				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
No CSMA was identified in the 1991 San Juan Resource Area RMP, as amended. These lands are managed according to the 1991 San Juan RMP prescriptions.	Beef Basin (20,302 acres) would be managed as a CSMA with the following prescriptions: • Management focus for the CSMA would be heritage, tourism, traditional cultural values, and scientific research of prehistoric cultural landscapes. • Unavailable for private and/or commercial use of woodland products (including on-site collection of dead wood for campfires). • Available for livestock use, but may be limited if cultural resources are impacted. • Available for watershed, range, wildlife habitat improvements, and vegetation treatments. • OHV use limited to designated routes. • Development of a car campground in Ruin Park for primitive camping. • Designated primitive car camping areas in Middle Park, House Park, and along Beef Basin Loop Road, as well as other areas as necessary to control impacts to cultural resources. • Closure of all campsites that impact archaeological sites. • Cultural site visitation limited to designated trails. • Unavailable for campfires. • Group size limited to 12 people total. • Removal of human waste required. • Parking for day use limited to designated areas. • Car camping limited to designated camp areas and campgrounds with designated access routes and parking. • Climbing gear use allowed as an aid to hiking routes only. No fixed lines, bolts, chalk, etc. allowed in order to protect rock art.	Beef Basin (20,302 acres) would be managed as a CSMA the same as in Alternative B, except for the following: • Designated primitive car camping areas in Middle Park, House Park, and along Beef Basin Loop Road, as well as other areas as necessary to control impacts to cultural resources • Open for campfires; fire pan required. • Groups larger than 20 people total required to camp in designated areas and remove their waste.	Beef Basin would not be managed as a CSMA. The area would be managed with the following prescriptions: • Unavailable for private and/or commercial use of woodland products, except for limited on-site collection of dead wood for campfires. • Available for livestock use but may be limited if cultural resources are impacted. • Available for watershed, range, and wildlife habitat improvements, and vegetation treatments. • Designated primitive campsites outside of Ruin Park. • Development of a (seasonal) commercial campground in Ruin Park area. • Closure of all campsites that impact archaeological sites. • No group size limits. • Open for campfires; fire pan required. • Climbing gear allowed as an aid to hiking routes only. No fixed lines, bolts, chalk, etc. allowed.	Beef Basin (20,302 acres) would be managed as a CSMA with the following prescriptions: • Management focus for the CSMA would be heritage, tourism, traditional cultural values, and scientific research of prehistoric cultural landscapes. • Unavailable for private and/or commercial use of woodland products (including on-site collection of dead wood for campfires). • Available for livestock use but may be limited if cultural resources are impacted • No new improvements, maintenance of existing improvements allowed. • OHV use limited to designated routes and closed in non-WSA lands with wilderness characteristics. • Development of a car campground in Ruin Park for primitive camping. • Designated primitive car camping within the interior of the Beef Basin Loop Road. • Closure of all campsites that impact archaeological sites or negatively impact wilderness characteristics. • Cultural site visitation limited to designated trails. • Closed to campfires. • Group size limited to 12 people total. • Removal of human waste required. • Parking for day use limited to designated areas. • Car camping limited to designated camp areas and campgrounds with designated access routes and parking. • Climbing gear use allowed as an aid to hiking routes only. No fixed lines, bolts, chalk, etc, allowed in order to protect rock art.
McLoyd Canyon-Moon House Cultural Special Management Area (CSMA) McLoyd Canyon-Moon House is within a WSA; WSAs are managed under the IMP. The special management prescriptions below apply to Moon House for cultural protection through a range of alternatives for analysis.				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	McLoyd Canyon-Moon House (1,607 acres) would be managed as a Cultural Special Management Area with the following prescriptions: • A cultural resource management plan (CRMP)	Same as Alternative B except: • Access to interior corridor limited to 4 people at any one time.	Same as Alternative C except: • 24 people would be allowed to visit Moon House per day. Limitations on visitation may change based on-site monitoring of impacts of visitation.	McLoyd Canyon-Moon House (1,607 acres) would be managed as a CSMA with the following prescriptions: • A CRMP would be written for Moon House and would not require a plan amendment to the RMP.

Table 2.1. Summary Table of Alternatives

	would be written for Moon House and would not require a plan amendment to the RMP. • Public access limited via a permit system for day visits. • No more than 12 people allowed to visit Moon House per day. Limitations on visitation may change based on site monitoring of impacts of visitation. • One commercial group per day. • Access to interior corridor limited to 3 people at any one time. • Visitors would not be allowed to enter the Moon Room and adjoining rooms. • Human waste must be packed out. • Designated primitive camp and park area west of the Snow Flat Road. Camping prohibited outside of this primitive camp area. • Hiking to Moon House site limited to designated trail. • Closed to pack animals and pets. • Closed to campfires. • Unavailable for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires. • McLoyd Canyon closed to overnight use from the head of the canyon to UTM: 607100E, 4143495N. • Utah State Section Township 39S Range 19E, Section 2 to be acquired. • Development of a site stewardship program to monitor site and possibly develop guided tours.		• Two commercial groups per day allowed, but total number of visitors not to exceed more than 24 people per day. • Travel allowed on Road D4798, limited to the designated route.	• Public access limited via a permit system for day visits. • No more than 12 people would be allowed to visit Moon House/day. Limitations on visitation may change based on site monitoring of impacts of visitation. • One commercial group per day. • Access to interior corridor limited to 3 people at any one time. • Visitors would not be allowed to enter the Moon Room and adjoining rooms. • Human waste must be packed out. • Designated primitive camp and park area west of the Snow Flat Road. Camping prohibited outside of this primitive camp area. • Hiking to Moon House site limited to designated trail. • Closed to pack animals and pets. • Closed to campfires. • Unavailable for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires. • McLoyd Canyon closed to overnight use from the head of the canyon to UTM: 607100E, 4143495N. • Utah State Section Township 39S Range 19E, Section 2 to be acquired. • Development of a site stewardship program to monitor site and possibly develop guided tours.
Grand Gulch National Historic District Grand Gulch National Historic District is within a WSA; WSAs are managed under the IMP. The special management prescriptions below apply to Grand Gulch National Historic District for cultural protection through a range of alternatives for analysis.				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Grand Gulch Special Emphasis Area/Grand Gulch National Historic District (37,433 acres): Cultural and Recreational (natural values associated with primitive recreation/scenic). Unavailable for mineral leasing in Grand Gulch Special Emphasis area. Available for geophysical work except Grand Gulch Special Emphasis area. Closed to disposal of mineral materials. Retained in public ownership and classified as segregated from entry (a Secretarial withdrawal would be requested). Excluded from private ownership and commercial use of woodland products, except for limited on-site collection of dead wood for campfires. Available for livestock use, except Grand Gulch Canyon and associated tributaries, below Kane Gulch fence to the confluence with the San Juan River (approximately 16,599 acres). Closed to OHV use.	Grand Gulch National Historic District (37,388 acres) would be managed with the following prescriptions: • Unavailable for oil and gas leasing in Grand Gulch Special Emphasis area. • Unavailable for geophysical activities. • Unavailable for disposal of mineral materials. • Recommended for withdrawal from locatable mineral entry. • Unavailable for private and/or commercial use of woodland products, except for limited on-site collection of dead wood for campfires. Campfires limited to mesa tops only (no campfires in the canyon). • Available for livestock use, except Grand Gulch Canyon and associated tributaries, below Kane Gulch fence to the confluence with the San Juan River (approximately 16,316 acres). • Closed to OHV use. • Excluded from surface disturbance by mechanized or motorized equipment. • Excluded from habitat improvements, watershed	Grand Gulch National Historic District (37,388 acres) would be managed the same as Alternative B except for the following: • Non-motorized habitat improvements, watershed improvements, vegetation treatments, including aerial seeding, hand reseeding, planting seedlings, and control of invasive non-native species allowed as long as they do not impact cultural resources based on a site specific analysis, and are consistent with the IMP. • Pack animals permitted but packers must camp in designated areas. Limitations on numbers of trips may be implemented if cultural resources are impacted. • Recommended for withdrawal from locatable mineral entry.	Grand Gulch National Historic District (37,388 acres) would be managed the same as Alternative C with the following exceptions: • Available for oil and gas leasing subject to NSO. • Available for geophysical exploration that meets definition of "casual use" as defined 43 CFR 3150. • Pets and pack animals allowed.	Grand Gulch National Historic District (37,388 acres) would be managed as prescribed by the IMP and with the following prescriptions: • Unavailable to oil and gas leasing in Grand Gulch Special Emphasis area. • Unavailable for geophysical activities. • Unavailable for disposal of mineral materials. • Recommended for withdrawal from locatable mineral entry. • Unavailable for private and/or commercial use of woodland products, except for limited on-site collection of dead wood for campfires. Campfires limited to mesa tops only (no campfires in the canyon). • Available for livestock use, except Grand Gulch Canyon and associated tributaries, below Kane Gulch fence to the confluence with the San Juan River (approximately 16,316 acres). • Closed to OHV use. • Excluded from surface disturbance by mechanized or motorized equipment.

Table 2.1. Summary Table of Alternatives

Managed as VRM Class I. Excluded from surface disturbance by mechanized or motorized equipment. Managed for Recreation Opportunity Spectrum (ROS) Primitive (P)-class to provide primitive recreation opportunities in the ROS areas. ROS P-class areas protected from surface disturbance to the maximum extent possible. Open to leasing with NSO in ROS P-class areas. Managed to limit recreation use if cultural resources or scenic values are being damaged. Subject to conditional fire suppression with motorized suppression methods used only if necessary to protect life or property.	improvements, and vegetation treatments. Exceptions are non-motorized weed control with no surface disturbance. • Designated trails and camping areas as necessary to protect cultural resources. • Closed to pack animals and pets. • Human waste must be packed out.			• Excluded from habitat improvements, watershed improvements, and vegetation treatments. Exceptions are non-motorized weed control with no surface disturbance. • Designated trails and camping areas as necessary to protect cultural resources. • Closed to pack animals and pets. • Human waste must be packed out.
Historic Trails				
MANAGEMENT COMMON TO ALL ALTERNATIVES The designated Old Spanish National Historic Trail would be managed to protect the resource values for which it was designated (Public Law 107-325). Hole in the Rock Trail would be managed for Heritage Tourism in consultation with Utah State Historic Preservation Office and Native American tribes, as well as interested stakeholder groups. BLM would coordinate with the National Park Service (NPS) and other managing agencies in management of the Old Spanish National Historic Trail. All interpretation projects would be done in consultation with Native Americans and other interested parties including the Old Spanish Trail Association and NPS.				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
BLM and NPS are co-administrators of the Old Spanish National Historic Trail and currently involved in the development of a comprehensive management plan for the trail. The trail would be managed to protect the resource values for which it was designated (Public Law 107-325).	• Segments (linear) of the Old Spanish National Historic Trail would be identified and classified for historic integrity and condition. These segments would then be designated for appropriate types of travel. • Special Recreation Permits (SRPs) on the Old Spanish National Historic Trail would be authorized only for heritage tours and reenactments.	Same as Alternative B except: • Landmarks (structures) along the Old Spanish National Historic Trail would be identified for historic integrity and interpreted only if the action would not impact the values at the site.	Same as Alternative C.	• Segments (linear) of the Old Spanish National Historic Trail would be identified and classified for historic integrity and condition. These segments would then be designated for appropriate types of travel. • SRPs on the Old Spanish National Historic Trail would be authorized only for heritage tours and reenactments.
FIRE MANAGEMENT				
Fire management would adopt the comprehensive Utah Land Use Plan Amendment for Fire and Fuels Management, September 2005 (LUP Amendment; BLM 2005c). This document may be found at www.ut.blm.gov/fireplanning/index/htm. Direction and guidance approved by the LUP Amendment is incorporated by reference into this RMP. Specific decisions for other resources that could impact fire management are found throughout this table. However, the content and purpose of the LUP Amendment is adopted and is summarized as follows: • Establishes landscape-level fire management goals and objectives. • Describes Desired Wildland Fire Conditions (DWFC) and the management strategies and actions to meet DWFC goals. • Describes areas where fire may be restored to the ecosystem through wildland fire use for resource benefit and areas where wildland fire use is not appropriate. • Identifies Resource Protection Measures (RPMs) for fire management practices to protect natural and cultural resource values. • Identifies criteria used to establish fire management priorities. **MANAGEMENT COMMON TO ALL ALTERNATIVES** Firefighter and public safety are the primary goals in all fire management decisions and actions. Appendix B, Desired Wildland Fire Condition and Condition Class, shows the different responses allowed for the planning area (PA). Wildland fire would be utilized to protect, maintain and enhance resources and, when possible, would be allowed to function in its natural ecological role. Hazardous fuels reduction treatments would be used to restore ecosystems; protect human, natural and cultural resources; and reduce the threat of wildfire to communities. Fires would be suppressed at minimum cost, taking into account firefighter and public safety as well as benefits and values to be protected that are consistent with resource objectives. The BLM would implement a consistent, safe, and cost-effective fire management program through appropriate planning, staffing, training, and equipment. Fire management objectives would be established for every area with burnable vegetation, based on sound science and consideration of other resource objectives. Emergency stabilization, rehabilitation, and restoration efforts would be implemented to protect and sustain resources, public health and safety, and community infrastructure. The BLM would work together with partners and other impacted groups and individuals to reduce risks to communities and to restore ecosystems. The Reasonable & Prudent Measures and Terms and Conditions identified in consultation with the USFWS for the LUP Amendment would be implemented in fire-related actions. BLM would work together with Native Americans to provide for their use of woodland products as associated with fire, fuels, and emergency stabilization and rehabilitation (ES&R) actions.				

Table 2.1. Summary Table of Alternatives

Criteria for Establishing Fire Management Priorities

Protection of human life is the primary fire management priority. Establishing a priority among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources is based on human health and safety, the values to be protected, and the costs of protection. When firefighters and other personnel have been committed to an incident, these human resources become the highest values to be protected. Priorities for all aspects of fire management decisions and actions are based on the following:

- Protection of the Wildland-Urban Interface (WUI) (including At-Risk Communities and At-Risk Watersheds)
- Maintaining existing healthy ecosystems
- High priority sub-basins or watersheds
- Threatened, endangered, or special status species
- Cultural resources and/or cultural landscapes

Suppression

An Appropriate Management Response (AMR) procedure is required for every wildland fire that is not a prescribed fire. In all fire management decisions, strategies, and actions, firefighter and public safety are the highest priority followed by consideration of benefits and values to be protected as well as suppression costs. The AMR can range from full suppression to managing fire for resource benefit (wildland fire use). Resource goals and objectives outlined in the RMP guide the development and implementation of AMR fire management activities in regard to the accomplishment of those objectives. The FMP establishes fire suppression objectives with minimum and maximum suppression targets for each Fire Management Unit (FMU) within the PA. While firefighter and public safety are the first priority, considerations for suppression activities also include fire intensity, acreage, and spread potential; threats to life and property; potential to impact high-value resources such as critical habitat for threatened, endangered, and sensitive species; crucial wildlife habitat; cultural resources and/or riparian areas; historic fire regimes; and other special considerations such as wilderness and/or adjacent agency lands.

Wildland Fire Use for Resource Benefit

Wildland fire is authorized as a tool, when appropriate, to allow naturally ignited wildland fire to accomplish specific resource management objectives. Due to existing resource conditions and proximity to values at risk, fire cannot be allowed to resume its natural role on all BLM lands in the FO. Consideration of ongoing management decisions and other natural changes would direct periodical reassessment of DWFC and determination of potential areas for wildland fire use. Operational management of wildland fire use is described in the Wildland Fire Implementation Plan (WFIP).

The FMP identifies FMUs that may have the potential for wildland fire use. Wildland fire use may be authorized for all areas, except when the following resources and values may be negatively impacted and there are no reasonable Resource Protection Measures to protect such resources and values:

- WUI areas
- Areas known to be highly susceptible to post-fire cheatgrass or invasive weed invasion
- Important terrestrial and aquatic habitats
- Non–fire adapted vegetation communities
- Sensitive cultural resources
- Areas of soil with high or very high erosion hazard
- Class I areas and PM10 non-attainment areas
- Administrative sites
- Developed recreation sites
- Communication sites
- Oil, gas, and mining facilities
- Above-ground utility corridors
- High-use travel corridors, such as interstates, railroads, and/or highways

Fuels Treatment

Fuels management activities outlined in the FMP would be consistent with the resource goals and objectives contained in the RMP. To reduce hazards and to restore ecosystems, authorized fuels management decisions include wildland fire use, prescribed fire, and mechanical, manual, chemical, biological, and seeding treatments. The FMP describes fuels management goals and objectives, and the full range of fuels management strategies and actions authorized for fuels reduction. Fuels treatments are focused on the DWFC of restoring historic fire regimes to ecosystems when feasible, so that future wildland fire use actions can be more easily implemented.

Fuels management decisions may include but are not limited to the following activities:

- Mechanical treatments such as mowing, chopping, or chipping/grinding (brush cutter), chaining, tilling, or cutting
- Manual treatments such as hand-cutting (chainsaw or handsaw) and hand-piling
- Prescribed fire, including broadcast, underburn, and hand-pile burning
- Chemical spraying or biological treatments such as insects or goats/sheep
- Seeding including aerial or ground application (manual or mechanical)

Targeted areas may be treated in phases over a period of several years and may involve multiple and varied treatments.

Estimated fuels reduction treatments of 5,000 to 10,000 acres/year are targeted dependent on budgetary and time constraints.

Implementation of fuels management decisions would be prioritized using the following criteria:

- WUI areas
- Areas with fuel loading that could potentially result in the loss of ecosystem components following wildland fire
- Resource management goals and objectives

Prevention and Mitigation

Prevention and mitigation goals target a reduction in unauthorized wildland fire ignitions. Goals include coordination with partners and affected groups and individuals, and a wide range of prevention and mitigation activities such as personal contacts, mass media, signing, and defensible space education.

Implementation of fire prevention activities would be prioritized using the following criteria:

Table 2.1. Summary Table of Alternatives

- WUI areas
- Major travel corridors
- Recreation sites
- Public lands as a whole

Emergency Stabilization and Rehabilitation (ES&R)

A Normal Year Fire Stabilization and Rehabilitation Plan (NFRP) is in place to meet ES&R needs and to comply with up-to-date ES&R policy and guidance. The NFRP is a programmatic implementation plan authorizing treatment options specific to vegetative communities and dependent upon post-wildland fire conditions and other site-specific considerations. Treatment actions that are designed according to the type and severity of wildfire impacts and priorities include but are not limited to areas where the following criteria apply:

- It is necessary to protect human life and safety as well as property.
- Unique or critical cultural and/or historical resources are at risk.
- It is determined soils are highly susceptible to accelerated erosion.
- Perennial grasses and forbs (fire-tolerant plants) are not expected to provide soil and watershed protection within two years.
- There is a need to establish a vegetative fuel break of less flammable species (greenstrips).
- Unacceptable vegetation, such as noxious weeds, may readily invade and become established.
- Shrubs and forbs are a crucial habitat component for wintering mule deer, antelope, sage-grouse, or other special status species.
- Stabilization and rehabilitation are necessary to meet RMP resource objectives, including rangeland seedings.
- It is necessary to protect water quality.
- It is necessary to quickly restore threatened, endangered, or special status species habitat populations to prevent negative impacts.

MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES

The Moab Fire District Fire Management Plan (FMP) would be updated and amended to meet the direction and objectives of the RMP.

HEALTH AND SAFETY

GOALS

Effectively manage hazardous risks on public lands to protect the health and safety of public land users and stewards; protect the natural and environmental resources; minimize future hazardous and related risks, costs, and liabilities; and mitigate physical hazards in compliance with all applicable laws, regulations, and policies.

MANAGEMENT COMMON TO ALL ALTERNATIVES

Abandoned Mine Lands

In conformance with BLM's long-term strategies and National Policies regarding Abandoned Mine Lands (AMLs), this RMP recognizes the need to work with our partners toward identifying and addressing physical safety and environmental hazards at all AML sites on public lands. In order to achieve this goal, a state strategy has been written. National program criteria for determining site priorities were used to develop the work plan. This state strategy is entitled "Utah Abandoned Mine Land Multi -Year Work Plan." The following criteria would be established to assist in determining priorities for site and area mitigation and reclamation:

- AML physical safety program priorities:
  - Highest priority would be cleaning up AML sites where (a) a death or injury has occurred, (b) the site is situated on or in immediate proximity to developed recreation sites and areas with high visitor use, or (c) upon formal risk assessment, a high or extremely high risk level is indicated;
  - AML would be factored into future recreation management area designations, land use planning assessments, and all applicable use authorizations;
  - The site is presently listed or is eligible for listing in the Abandoned Mines and Site Cleanup Module;
  - AML hazards should be, to the extent practicable, mitigated or remediated on the ground during site development.
- AML water-quality program priorities are ones where the state has identified the watershed as a priority based on 1) one or more water laws or regulations; 2) threat to public health or safety; 3) threat to the environment; 4) the project reflects a collaborative effort with other land managing agencies; 5) the site is presently listed or is eligible for listing in the Abandoned Mines and Site Cleanup Module; and 6) the project would be funded by contributions from collaborating agencies.

These priorities would be maintained and updated as needed in the state AML strategy.

BLM would identify and clean up unauthorized dumping and shooting areas in the PA as required to comply with applicable state, local, and federal regulations. These would include areas such as the unauthorized shooting range west of Blanding, dumps near Hovenweep, the Monticello Airport, and Piute Knoll.

Hazardous Waste

BLM would respond to releases as appropriate.

LANDS AND REALTY

GOALS

BLM would retain lands within its administration except where necessary to accomplish resource goals and objectives outlined in the plan. BLM would transfer lands out of federal ownership or acquire non-federal lands or conservation easements where needed to accomplish resource goals and objectives, improve administration of public lands, or to meet essential community needs.

Make public land available for a variety of ROWs, alternative energy sources, and permits where consistent with resource, goals, objectives, and prescriptions. Where possible, BLM would encourage project sponsors to locate new major ROWs in existing or designated utility and transportation corridors and not in areas designated for avoidance to protect specific resources.

Table 2.1. Summary Table of Alternatives

MANAGEMENT COMMON TO ALL ALTERNATIVES

BLM would not transfer out of federal ownership any habitat for listed threatened or endangered species or any habitat for non-listed special status species if it could be determined that such an action would lead to the need to list any species as threatened or endangered. Acquisition of potential/occupied special status species habitat would be high priority. These acquired/exchanged lands would be managed according to BLM land management prescriptions for special status species.

Under IMP and Congressional action, WSAs and Wilderness Areas would be exclusion areas for any ROWs (Section 501(a) FLPMA).

Land ownership changes would be considered on lands specifically identified in the RMP for sale or other disposal or acquisition if the changes are in accordance with resource management objectives and other RMP decisions, and would meet one or more of the following criteria as outlined by BLM Land Tenure Adjustment criteria as described in Section 203 of FLPMA:

- Such changes are determined to be in the public interest and would accommodate the needs of local and state governments, including needs for the economy, public purposes, and community growth.
- Such changes would result in a net gain of important and manageable resources on public lands such as crucial wildlife habitat, important cultural sites, quality riparian areas, live water, listed species habitat, or areas key to productive ecosystems.
- Such changes would ensure public access to lands in areas where access is needed and cannot otherwise be obtained.
- Such changes would promote effective management and meet essential resource objectives through land ownership consolidation.
- Such changes would result in acquisition of lands that serve regional or national priorities identified in applicable policy directives.
- Such changes have been identified in existing activity plans (i.e., habitat management plans, etc.).

BLM would recognize the mission, goals, and objectives of the State of Utah as they relate to the values and resources of state-owned lands. The Monticello FO would work cooperatively with the State of Utah in identifying opportunities for Land Tenure Agreements (LTAs) that may assist the state in furthering its mission. These agreements must comply with applicable law and policy; consider fair market values; consider LTA criteria; and comply with goals and objectives for resource management prescribed in the RMP. They would be processed on a case-by-case basis, with consideration given to the goals, objectives, and decisions of this RMP.

Applications for new ROW on public lands would be considered and analyzed on a case-by-case basis, taking into consideration areas identified for avoidance and exclusion. Proposals would be reviewed for consistency with planning decisions and evaluated under requirements of applicable laws for resource protection.

Filming Permits

Applications for filming permits in the Monticello PA would be limited to existing highways, roads, and pullouts throughout the Field Office (including Valley of the Gods, Moki Dugway, Highway 211, Newspaper Rock, and Highway 95) and would have to meet the following criteria of minimal impact to be approved. Filming projects that do not meet these criteria would be subject to site-specific NEPA analysis prior to permit approval (EA on BLM managed lands in Utah within WSAs and the GSENM, EA USO-06-004).

- Project would not impact sensitive habitat or species.
- Project would not impact cultural resources or Native American sacred sites.
- Project would not involve use of pyrotechnics.
- Project would not involve more than minimum impacts to land, air, or water. (Minimum is defined as temporary impact only; no permanent impacts; no surface disturbance allowed that can't be raked out or rehabbed so that there is no sign of activity at the end of the filming).
- Project would not involve use of explosives.
- Project would not involve use of exotic plant or animal species that could cause danger of introduction into the area.
- Project would not involve WSAs, non-WSA lands with wilderness characteristics, WSR corridors, National Register Eligible Sites, and Native American Sacred Sites.
- Project would not involve adverse impacts to sensitive surface resource values including: historic, cultural or paleontological sites; sensitive soils; relict environments; wetlands or riparian areas; ACECs.
- Project does not involve substantial restriction of public access.
- Project does not involve substantial use of domestic livestock.
- Project does not involve 15 or more production vehicles within sensitive area.
- Project does not involve 75 or more people within sensitive area.
- The activity within the sensitive area would not continue in excess of 10 days.
- No refueling allowed within sensitive areas.
- Aircraft use in area with wildlife concerns is not proposed during critical wildlife period for more than 1 day and does not exceed frequency of 2 projects per 30-day period.
- Aircraft use in area with no wildlife concerns is proposed for no more than 2 days and does not exceed frequency of 3 projects per 30-day period.
- Use of aircraft is not proposed within 0.5 mile of a designated campground located within a sensitive area and the number of low-elevation passes would not exceed 4 passes per day.

Recreation and Public Purpose Act (R&PP) and Other Authorizations for Disposal

Lands conveyed to state or local governments or non-profit organizations under the R&PP Act may include those identified in LTAs. In addition, requests for lands other than those identified could be considered for disposal provided the proposed use would provide a greater public benefit than that which the current management provides, and that the action is otherwise consistent with this RMP. Examples may include but are not limited to local government or non-profit recreational and public purposes facilities such as public shooting ranges, landfills, motocross tracks, racetracks, etc. Other authorizations for disposal include the Airport and Airway Improvement Act, Color-of-Title Act, state selections under the Enabling Act, and other lesser-used authorities.

Trespass Resolution

Intentional trespass resolution would be limited to removal and/ or restoration as appropriate. Unintentional trespass resolution may include authorization under ROW grant, commercial/agricultural lease, or permit; disposal of the impacted land through sale or exchange; or removal, depending on the nature of the trespass. In all such trespass cases, administrative costs incurred by the BLM for investigating and resolving trespasses would be collected. All trespass incidents resolved by issuance of ROW grants, leases, or permits would be subject to payment by the holder/lessee/permittee of rent based on market value. Trespass cases resolved by land sales would be based on fair market value, and land exchanges would be completed on an equal value basis.

Access

ROWs for state and private inholdings, in-field oil and gas leases, and pipelines for producing oil and gas wells would be approved subject to a determination of "reasonable" access for the "intended purpose" and they are processed and issued upon application.

Easements

Easements would be acquired from willing landowners and the State of Utah to gain access to public lands or placement of facilities on non-public lands, and acquire easements to accomplish resource objectives.

Table 2.1. Summary Table of Alternatives

Land Tenure Adjustments

Acquisitions would be managed in the same manner as adjoining lands unless they are acquired for a specific purpose (i.e., wildlife habitat, buffer zones near other federal lands, etc.).

Disposal Criteria

As described under Sections 203 (a) and 206 of FLPMA (43 USC 1713; 1716), public lands have potential for disposal when they are isolated and/or difficult to manage. Lands in the Monticello PA identified for disposal must meet public objectives (as outlined in Sections 203 (a) and 206 of FLPMA), such as community expansion and economic development.

Sale or Other Disposals Approximately 6,440 acres of land would be identified for disposal. See Appendix C Lands and Realty, Tracks Identified for Disposal. These lands need to be screened to assure that they meet FLPMA 203 criteria.

Withdrawal Processing and Review: General Management Guidance

FLPMA requires BLM to review agency withdrawals and prior Classification and Multiple Use Act (C&MU) classifications according to schedules prepared by USO or upon special BLM or agency request. The Monticello FO would review other-agency withdrawals (24,140 acres); withdrawals found to be obsolete can be removed. New withdrawals are processed upon request from BLM or other federal agencies, but can be made only by the Secretary or by Congress.

Support

Support from Utah state office and Washington office would be needed for requests for withdrawal. Interdisciplinary staff support would be needed for coordination and development of site-specific mitigation. Coordination with surface owners, surface-administering agencies, or the State of Utah may also be required. Coordination with the U.S. Fish and Wildlife Service would be required where threatened or endangered species are involved.

MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES

- Avoidance and Exclusion Areas for ROWs: ROW avoidance and exclusion areas would be consistent with the stipulations identified for oil and gas leasing and other surface-disturbing activities. Areas NSO or unavailable for leasing or VRM Class I are ROW-avoidance areas. These stipulations have been developed to protect important resource values. **Avoidance**: ACECs, Pearson Canyon hiking area, WSAs, WSRs. **Exclusion**: Grand Gulch Special Emphasis Area, Dark Canyon ACEC, developed recreation sites.

Transportation and Utility Corridors

This RMP would adopt the existing designated ROW corridors including the Western Utility Group (WUG) updates to the Western Regional Corridor Study (Map 4 and Sec. 368 Energy Policy Act of 2005 West-Wide Energy Corridor), and would designate additional corridors subject to physical barriers and sensitive resource values. Designated transportation and utility corridors include existing groupings of ROWs for electric transmission facilities, pipelines 16 inches and larger, communication lines, federal and state highways, and major county road systems.

Rights-of-Way (ROW) – Wind, Solar Energy, Communication Sites

Decision Background

Authorization of any ROW for wind or solar energy development would incorporate best management practices and provisions contained in the Wind Energy Programmatic EIS, once this document becomes final.

Both wind and solar energy development are normally authorized by ROW grant.

Interim policy would be replaced by upcoming internal memorandum (IM).

Alternative A (No Action)	Alternative B	Alternative C (Preferred)	Alternative D	Alternative E
Lands available for ROWs are divided into four categories according to the 1991 San Juan RMP prescriptions (page 37). Lands to be excluded are 120,800 acres: • Cedar Mesa ACEC • Portion of Grand Gulch • Dark Canyon ACEC • ROS SPM area of San Juan River SRMA • Developed Recreation Sites	Consider lands available for ROWs except for: • VRM Class I and II areas • Migratory bird habitats and raptor nesting complexes in riparian habitats and sagebrush and aspen • Special status species habitats	Consider lands available for ROWs except for: • VRM Class I areas • Migratory bird habitats and raptor nesting complexes in riparian habitats and sagebrush and aspen • Threatened and endangered species habitats	Consider lands available for ROWs except for: • VRM Class I areas • Threatened and endangered species habitats • Areas managed as available for oil and gas leasing subject to NSO	Same as Alternative B except as listed below: • Non WSA lands with wilderness characteristics

LIVESTOCK GRAZING

GOALS

Achieve Rangeland Health Standards (BLM 1997) and other desired resource conditions.

MANAGEMENT COMMON TO ALL ALTERNATIVES

Manage grazing according to Standards for Rangeland Health and Guidelines for Grazing Management (BLM 1997).

Maintain lands currently unavailable for livestock grazing (due to vegetation, recreation, wildlife, or other concerns).

Maintain existing land treatments as prioritized in Table D.5, Appendix D, to meet RMP objectives and Standards for Rangeland Health (BLM 1997). Any new land treatments developed in addition to those listed would also be maintained as necessary to meet RMP objectives and Standards for Rangeland Health.

Modify and implement existing Allotment Management Plans (AMPs) (Tank Draw and East Canyon) as necessary to meet RMP objectives and Standards for Rangeland Health (BLM 1997). Develop and implement 29 new AMPs and others identified on a site-specific basis, for which resource concerns develop that require such action.

Continue to make unavailable for grazing 125,356 acres as follows:

- Bridger Jack Mesa (near relict vegetation)
- Grand Gulch area (within the canyon) of Cedar Mesa
- Dark Canyon (partial)
- Lavender Mesa (relict vegetation)

Table 2.1. Summary Table of Alternatives

- Five identified mesa tops (White Canyon area)
- Pearson Canyon (old hiking area boundary)
- Comb Wash side canyons (Mule Canyon south of U-95, Arch, Fish, Owl, and Road)
- Developed recreation sites (currently developed and proposed as listed in the recreation section. Any sites additional to those listed may be unavailable for grazing without a plan amendment and would be analyzed with site-specific NEPA)

Continue to allot 17,300 acres to wildlife (parts of the slopes of Peter's Canyon and East Canyon).

Continue to authorize current active permitted grazing use unless monitoring data or other factors indicate a need for change (e.g., change in federal land ownership, etc.).

Categorize allotments as shown in Chapter 3. Table 3.13. on approval of RMP revision.

Designate key forage species for allotments as shown in Appendix D upon approval of RMP revision and as updated. Key species may be revised as needed (without plan amendment) to meet Rangeland Health Standards (BLM 1997) and Desired Future Condition.

Manage allotments for ecological condition as shown in Chapter 3, Table 3.13 until replaced by a more suitable allotment objective classification such as Desired Future Condition (DFC).

Forage, Livestock/Wildlife

Coordinate with UDWR and grazing permittees to manage for long-term forage and habitat and/or ecological condition requirements or needs for livestock and wildlife, consistent with grazing allotment and herd management unit objectives.

Seasons of Use

Changes in livestock season of use would be made by the FO on an allotment-specific basis to meet RMP objectives or Standards for Rangeland Health (BLM 1997), as shown by monitoring data, and to provide flexibility in management of livestock grazing.

Allotment seasons of use, subject to the statement above, would be the same as in the current RMP (see Appendix D Livestock Grazing) with the following exceptions:

MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES

Season of Use Changes:

- Church Rock season of use would end May 31.
- Indian Rock season of use would end April 15.
- Owens Dugout season of use would end April 30.
- Laws season of use would be April 16 through November 15.
- Bear Trap Season of use would be December 1 through March 15.
- Monument Canyon season of use would be December 1 through May 31.

New Allotments – Established Since 1991 San Juan RMP:

- South Vega season of use would be January 6 through April 30.
- Upper Mail Station season of use would be November 15 through April 15.
- Big Westwater season of use would be May 1 through December 31.

Utilization

Desired utilization levels as management guidelines for key forage species would be identified as needed on a site-specific basis consistent with Utah's Standards for Rangeland Health and Guidelines for Grazing Management (BLM 1997) and DFCs. Where utilization levels have not been established, a use level of 50% would be the management guideline. Utilization is the proportion or degree of current year's forage production that is consumed or removed by animals (including insects). Utilization data should be analyzed in conjunction with climate, actual grazing use, current or historic impacts (wildfire, livestock, wildlife, insects, etc.), and long-term trend data to help evaluate existing and design future management to meet LUP objectives.

Relinquishment of Preference

A grazing permittee may voluntarily relinquish in writing all or a percentage of the grazing preference that is attached to the base property they own or control for any reason they may choose. This action would not require consent or approval by BLM or any other entity. BLM would not be a party to or accept any contingencies or conditions associated with a relinquishment that would require future BLM action(s) such as, but not limited to, discontinuing livestock grazing.

Once the preference and associated permitted use has been relinquished in whole or in part, it would remain available for application for preference and a grazing permit. Prior to reissuance of the relinquished permit, the terms and conditions may be modified to meet RMP goals and objectives and/or site specific resource objectives.

However, upon relinquishment, BLM may determine through a site-specific evaluation and associated NEPA analysis that the public lands within a grazing allotment are better used for other purposes such as recreation, wildlife, watershed for a culinary water source, disposal, etc., or a combination of other uses. Grazing may then be discontinued on the allotment through an amendment to the existing RMP or a new RMP effort. Any decision issued concerning discontinuance of livestock grazing on federal lands would not be permanent and would be subject to reconsideration during subsequent revision or amendment of the RMP.

The evaluation and associated NEPA analysis may also determine that resource conditions are such that livestock grazing should be temporarily discontinued until site-specific resource objectives have been achieved. This evaluation and NEPA analysis would include a narrative with an evaluation time frame and process identified, indicating that once the objectives have been achieved, BLM would reconsider application(s) for grazing use.

Alternative A (No Action)	Alternative B	Alternative C (Preferred)	Alternative D	Alternative E
The following areas were made unavailable to grazing by court decision pending final determination in RMP revision: Comb Wash side canyons (Mule Canyon south of U-95, Arch, Fish, Owl, and Road). Also unavailable for grazing: • Bridger Jack Mesa (near relict vegetation) • Grand Gulch area (within the canyon) of Cedar Mesa • Dark Canyon (partial)	The following areas would be made unavailable to grazing for the life of this plan: • Slickhorn Canyon (Perkins Brother's Allotment) • Rone Bailey Mesa (Upper Mail Station Allotment) • Dodge Canyon Allotment • Mule Canyon (including North and South Forks north of U-95), Arch Canyon, Fish and Owl Canyon, and Road Canyon • Rogers Allotment	Same as Alternative B except for Mule Canyon, which would be made unavailable for grazing south of U-95 (North and South Forks north of U-95 would be open).	The following areas would be made unavailable for grazing for the life of this plan: • Slickhorn Canyon (Perkins Brother's Allotment) • Rone Bailey Mesa (Upper Mail Station Allotment) • Mule Canyon below U-95 • Arch Canyon • Fish and Owl Canyon • Road Canyon • Rogers Allotment	The following areas would be made unavailable for grazing for the life of this plan: • Slickhorn Canyon (Perkins Brother's Allotment) • Rone Bailey Mesa (Upper Mail Station Allotment) • Dodge Canyon Allotment • Mule Canyon (including North and South Forks north of U-95) • Arch Canyon • Fish and Owl Canyon

Table 2.1. Summary Table of Alternatives

• Lavender Mesa (relict vegetation) • Five identified mesa tops (White Canyon area) • Pearson Canyon (old hiking area boundary)	• Portions of West Butler Wash Canyons • Horsehead Canyon within Montezuma Canyon allotment Moki Canyon, Lake Canyon, Harts Canyon, and Indian Creek from Kelly Ranch vicinity to USFS boundary would be restricted to livestock trailing only, no grazing. BLM would develop seasonal restrictions, closures, and/or forage utilization limits on grazing in riparian areas deemed Functioning at Risk.		• Portions of West Butler Wash Canyons	• Road Canyon • Rogers Allotment • Portions of West Butler Wash Canyons • Horsehead Canyon within Montezuma Canyon allotment Moki Canyon, Lake Canyon, Harts Canyon, and Indian Creek from Kelly Ranch vicinity to Forest Service boundary would be restricted to livestock trailing only, no grazing. BLM would develop seasonal restrictions, closures, and/or forage utilization limits on grazing in riparian areas Functioning At Risk.

MINERAL RESOURCES

GOALS

Continue to meet local and national energy and other public mineral needs to the extent possible. Provide opportunities for environmentally responsible exploration and development of mineral and energy resources subject to appropriate BLM policies, laws, and regulations.

Ensure a viable long-term industry related to leasable, locatable, and salable mineral development while providing reasonable and necessary protections to other resources. Establish conditions of use through land use planning to protect other resource values.

The following principles would be applied:

1. encourage and facilitate the development by private industry of public land mineral resources in a manner that satisfies national and local needs and provides for economical and environmentally-sound exploration, extraction and reclamation practices;
2. process applications, permits, operating plans, mineral exchanges, leases, and other use authorizations for public lands in accordance with policy and guidance; and
3. monitor salable and leasable mineral operations to ensure proper resource recovery and evaluation, production verification, diligence and inspection, and enforcement of the lease, sale, or permit terms.

MANAGEMENT COMMON TO ALL ALTERNATIVES

The plan would provide for a variety of mineral exploration and development activities. These activities would be allowed in the PA unless precluded by other program prescriptions. The stipulations identified in Appendix A would apply to these activities where they are applicable. Seasonal wildlife conditions would not apply to maintenance and operation activities for mineral production (see also Wildlife).

WSAs and designated Wilderness would remain closed, by law, to mineral leasing and development.

Where public lands are sold or exchanged under 43 U.S.C. 682(B)(Small Tracts Act), 43 U.S.C. 869 (Recreation and Public Purposes Act), 43 U.S. C. 1718 (Sales) or 43 U.S. C. 1716 (Exchanges), the minerals reserved to the United States would continue to be removed from the operation of the mining laws unless a subsequent land-use planning decision expressly recommends restoring the land to mineral entry.

Leasable Minerals

Oil and Gas

The plan would recognize and be consistent with the National Energy Policy and Conservation Act (EPCA) by:

1. recognizing the need for diversity in obtaining energy supplies;
2. encouraging conservation of sensitive resource values; and
3. improving energy distribution opportunities.

All lands are available for leasing subject to standard lease terms, unless otherwise specified in the plan. Lease stipulations would be developed in the plan, where necessary, to mitigate the impacts of oil and gas activity (see Appendix A). The stipulations would adhere to the Uniform Format prepared by the Rocky Mountain Regional Coordinating Committee in March 1989. Stipulations reflect the minimum requirements necessary to accomplish the desired resource protection and, would contain provisions and criteria to allow for exception, waiver and modification if warranted. Stipulations from Section 6 of the Standard Lease Terms are incorporated for all leases.

Oil and gas leases issued prior to the plan would continue to be managed under the stipulations in effect when issued. Those issued subsequent to this plan would be subject to the stipulations developed in this plan.

Certain federal oil and gas resources within the Monticello PA underlie lands not administered by the BLM. The BLM administers the federal leases on these lands. These lands include:

- 101,720 acres within the Glen Canyon National Recreation Area (NRA)(see Glen Canyon NRA Minerals Management Plan)
- 366,850 acres within the Manti-LaSal National Forest (NF), Monticello Ranger District
- 51,610 acres within the Navajo Indian Reservation
- 1,080 acres within Indian Trust Lands
- 55,390 acres on split-estate lands

Split-estate lands (private surface/federal minerals) and lands administered by other federal agencies are not managed by the BLM. The surface owner or surface management agency (SMA) manages the surface. BLM administers the operational aspects of oil and gas leases. On lands administered by other federal agencies, lease stipulations would include those required by the SMA. On split-estate lands, lease stipulations would consist of those necessary to comply with non-discretionary federal laws, such as the Endangered Species Act. Mitigation measures would also be applied to protect other resource values such as VRM class, Recreation, and non-federally protected fish and wildlife species consistent with section 6 of the standard lease terms. These mitigation measures would be developed during site specific environmental analysis and would be attached as conditions of approval (COA) in consultation with the surface owner or SMA.

Table 2.1. Summary Table of Alternatives

Coal

The coal resources within the Monticello PA are limited to the San Juan Coal Field, totaling about 530,000 acres. Approximately 60% of this field is under private ownership (both surface and mineral estate), and about 212,000 acres of federal surface and federal minerals in the coal field are administered by the Monticello FO. The potential for development of coal resources is low (see Mineral Potential Report and RFD [BLM 2005]). The public has expressed no interest in coal leasing. The RMP does not establish conditions for coal leasing or exploration requirements. This would be done through a plan amendment, should sufficient interest warrant. At such time as interest is expressed in coal leasing, the RMP would be amended and mining unsuitability criteria (43 CFR 3461) would be applied by the Monticello FO before any coal leases are issued. If coal leases are issued, they would be subject to special conditions developed in the RMP amendment and the unsuitability assessment. This may restrict all or certain types of mining techniques. Before any coal could be removed, Monticello FO would have to approve the mining permit application package, incorporating stipulations developed in the RMP. Coal underlying non-WSA lands with wilderness characteristics would not be available for leasing under Alternative E.

Tar Sand

The White Canyon Special Tar Sand Area (STSA) extends over approximately 10,000 acres in the western portion of the Monticello PA. The STSA is available for leasing subject to the same lease stipulations developed in the RMP for oil and gas. However, the mineral report has documented low potential for development. Site-specific NEPA would be completed at the time of development. Activities consistent with other decisions in this RMP would be allowed. Tar sands underlying non-WSA lands with wilderness characteristics would not be available for leasing under Alternative E.

Note: An Oil Shale and Tar Sands Leasing Programmatic Environmental Impact Statement (PEIS) is being prepared for oil shale and tar sands resources leasing on lands administered by the U.S. Department of the Interior, Bureau of Land Management (BLM) in Colorado, Utah, and Wyoming. Based upon the information and analyses developed in this PEIS, the BLM would amend land use plans for these areas.

Potash (Nonenergy Leasable)

Within the Monticello PA, two areas fall within Known Potash Leasing Areas (KPLAs). KPLA designations, based on known geologic data, would remain in place until potash resources are depleted. In KPLAs, potash leases are acquired through competitive bidding. In areas where potash values are not known, the Monticello PA could issue prospecting permits, which could lead to issuance of a preference right lease. The RMP establishes stipulations that would apply to prospecting permits and leases. The KPLAs are available for leasing subject to the same lease stipulations developed in the RMP for oil and gas. Additional KPLAs could be designated, based on geologic data, if interest warranted. This would be an administrative action. Exploration and mining operations for potash are conducted in accordance with the regulations at 43 CFR 3590. Potash (KPLA) underlying non-WSA lands with wilderness characteristics would not be available for leasing under Alternative E.

Geothermal

A portion of the Warm Springs Canyon geothermal area (approximately 16,320 acres) extends into the Monticello PA. Low temperature geothermal waters have been recorded from springs. Because the Monticello PA is situated within the Colorado Plateau geologic province, where heat flow through the earth's crust is generally low, no high-temperature geothermal resources are expected at reasonable drilling depths. Therefore, development potential is low (see Mineral Potential Report and RFD [BLM 2005]). The public has expressed no interest in geothermal leasing. The RMP does not establish conditions for geothermal leasing or exploration requirements. This would be done through a plan amendment should sufficient interest warrant. Geothermal resources underlying non-WSA lands with wilderness characteristics would not be available for leasing under Alternative E.

Locatable Minerals

All public domain lands overlying federal minerals are available for mining claim location unless specifically withdrawn from mineral entry by Secretarial Order or public law or segregated from mineral entry under specific reservations, such as an R&PP lease.

The RMP may be used to recommend lands to be withdrawn from mineral entry. Claims located on these areas prior to withdrawal would not be impacted. Operations on BLM-administered lands available for mineral entry must be conducted in compliance with BLM's surface management regulations (43 CFR Subparts 3802, 3809, 3715 and 3814). BLM surface management regulations do not apply to operations on other federal lands but do apply to all operations authorized by the mining laws on public lands where the mineral interest is reserved to the United States, including Stock Raising Homestead lands.

The BLM would evaluate all operations authorized by the mining laws in the context of its requirement to prevent unnecessary and undue degradation of Federal lands and resources. Consistent with the rights afforded claimants under the mining laws, operations would conform to the management prescriptions in the plan.

Minerals reserved to the United States on tracts of land sold or exchanged, would be removed from the operation of the mining laws. These lands would not be restored to mineral entry without a plan amendment.

Federally owned locatable minerals underlying federal lands administered by the NPS are not generally available for mineral entry. However, locatable minerals under Glen Canyon NRA may be leased under Title 43 of the Code of Federal Regulations, part 3500 (43 CFR 3500) in accordance with the Mineral Management Plan for the NRA. Lands containing wilderness characteristics will be recommended for withdrawal from locatable mineral entry in Alternative E.

Salable Minerals

All BLM-administered lands in the Monticello PA would be placed in one of the following three categories:

- Available for disposal of mineral material subject to standard conditions.
- Available for disposal of mineral material subject to special conditions.
- Unavailable for disposal of mineral material. All non-WSA lands with wilderness characteristics are unavailable for disposal of mineral materials in Alternative E.

The plan would develop management conditions for disposal of mineral materials under each category. These management conditions would correspond respectively to the oil and gas leasing stipulations developed in the RMP, as follows:

- Standard lease terms
- TL and CSU
- NSO and closed

There are currently 16 community pits, totaling about 5,505 acres, designated in the current 1991 San Juan RMP.

Lands Available for Oil and Gas Leasing [1]				
Alternative A (No Action)	**Alternative B**	**Alternative C (Preferred)**	**Alternative D**	**Alternative E**
Acres available for leasing subject to standard lease terms (Category 1): • 578,604 The RMP reported 584,270 acres but was modified as discussed below***	Approximately 365,170 acres would be administratively available for oil and gas leasing, subject to standard lease terms.	Approximately 629,472 acres would be administratively available for oil and gas leasing, subject to standard lease terms.	Approximately 962,283 acres would be administratively available for oil and gas leasing, subject to standard lease terms.	Approximately 213,290 acres would be administratively available for oil and gas leasing, subject to standard lease terms.

Table 2.1. Summary Table of Alternatives

Acres available for leasing subject to special conditions (Category 2): • 659,626 The RMP reported 815,690 acres but was modified as discussed below***	TL: Approximately 786,489 acres would be administratively available for oil and gas leasing subject to timing limitations. CSU: Approximately 67,288 acres would be administratively available for oil and gas leasing subject to controlled surface use. CST: Approximately 22,963 acres would be administratively available for oil and gas leasing subject to timing limitations and controlled surface use.	TL: Approximately 569,657 acres would be administratively available for oil and gas leasing subject to timing limitations. CSU: Approximately 51,419 acres would be administratively available for oil and gas leasing subject to controlled surface use. CST: Approximately 98,425 acres would be administratively available for oil and gas leasing subject to timing limitations and controlled surface use.	TL: Approximately 418,242 acres would be administratively available for oil and gas leasing subject to timing limitations. CSU: Approximately 2,758 acres would be administratively available for oil and gas leasing subject to controlled surface use. CST: Approximately 0 acres would be administratively available for oil and gas leasing subject to timing limitations and controlled surface use.	TL: Approximately 511,649 acres would be administratively available for oil and gas leasing subject to timing limitations. CSU: Approximately 25,428 acres would be administratively available for oil and gas leasing subject to controlled surface use. CST: Approximately 8,564 acres would be administratively available for oil and gas leasing subject to timing limitations and controlled surface use.
Acres available subject to NSO: • 161,224 The RMP reported 268,080 acres but was modified as discussed below***	NSO: Approximately 125,105 acres would be administratively available for oil and gas leasing subject to no surface occupancy.	NSO: Approximately 39,323 acres would be administratively available for oil and gas leasing subject to no surface occupancy.	NSO: Approximately 14,175 acres would be administratively available subject to no surface occupancy.	NSO: Approximately 53,915 acres would be administratively available for oil and gas leasing subject to no surface occupancy.
Acres unavailable for leasing: • 385,316 – current management The RMP reported 111,170 acres but was modified as discussed below.***	Approximately 416,612 acres would be unavailable for leasing.	Approximately 395,329 acres would be unavailable for leasing.	Approximately 386,853 acres would be unavailable for leasing.	Approximately 974,463 acres would be unavailable for leasing.
*** Actual acreage for current management differs from the RMP acreage because of WSAs were unavailable for leasing by the IMP. The 1991 San Juan RMP did not close the WSAs to leasing and the acres were not taken into account at the time of RMP. Most of these areas were ACECs and available for leasing subject to special conditions. [1] NSO – No Surface Occupancy; TL – Timing Limitations; CSU – Controlled Surface Use; CST – Controlled Surface Use and Timing Limitations				
Lands Available for Mineral Entry				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Approximately 1,675,057 acres would be available for mineral entry.	Approximately 1,527,656 acres would be available for mineral entry.	Approximately 1,682,865 acres would be available for mineral entry.	Approximately 1,739,389 acres would be available for mineral entry.	Approximately 1,015,384 acres would be available for mineral entry.
Approximately 110,066 acres would be recommended for withdrawal from locatable mineral entry.	Approximately 257,467 acres would be recommended for withdrawal from locatable mineral entry.	Approximately 102,258 acres would be recommended for withdrawal from locatable mineral entry.	Approximately 45,734 acres would be recommended for withdrawal from locatable mineral entry.	Approximately 769,739 acres would be recommended for withdrawal from locatable mineral entry.
Lands Available for Mineral Material Disposal				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Approximately 584,270 acres would be available for disposal of mineral materials subject to standard terms and conditions.	Approximately 365,168 acres would be available for disposal of mineral materials subject to standard terms and conditions.	Approximately 624,734 acres would be available for disposal of mineral materials subject to standard terms and conditions.	Approximately 962,279 acres would be available for disposal of mineral materials subject to standard terms and conditions.	Approximately 213,290 acres would be available for disposal of mineral materials subject to standard terms and conditions.
Approximately 821,070 acres would be available for disposal of mineral materials subject to special conditions.	Approximately 876,736 acres would be available for disposal of mineral materials subject to special conditions.	Approximately 724,234 acres would be available for disposal of mineral materials subject to special conditions.	Approximately 420,998 acres would be available for disposal of mineral materials subject to special conditions.	Approximately 545,641 acres would be available for disposal of mineral materials subject to special conditions.
Approximately 373,850 acres would be unavailable for disposal of mineral materials.	Approximately 542,402 acres would be unavailable for disposal of mineral materials.	Approximately 435,338 acres would be unavailable for disposal of mineral materials.	Approximately 401,026 acres would be unavailable for disposal of mineral materials.	Approximately 1,025,378 acres would be unavailable for disposal of mineral materials.
NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS				
BLM has identified non-WSA lands with wilderness characteristics for management consideration in this planning effort. Wilderness characteristics include the appearance of naturalness and outstanding opportunities for solitude or primitive and unconfined recreation.				
GOALS AND OBJECTIVES: Maintain wilderness characteristics (appearance of naturalness and outstanding opportunities for primitive and unconfined recreation or solitude) of non-WSA lands with wilderness characteristics as appropriate, considering manageability and the context of competing resource demands. Manage these primitive lands and backcountry landscapes for their undeveloped character, and to provide opportunities for primitive recreational activities and experiences of solitude, as appropriate.				
MANAGEMENT COMMON TO ALL: There would be no management common to all for non-WSA lands with wilderness characteristics.				
Alternative A (No Action)	**Alternative B**	**Alternative C (Preferred)**	**Alternative D**	**Alternative E**
Non-WSA lands with wilderness characteristics were not addressed in the 1991 San Juan Resource Area RMP, as amended. These lands are managed according to the 1991 San Juan RMP prescriptions.	No management prescriptions identified for non-WSA lands with wilderness characteristics.	No management prescriptions identified for non-WSA lands with wilderness characteristics.	No management prescriptions identified for non-WSA lands with wilderness characteristics.	582,360 acres of non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial

Table 2.1. Summary Table of Alternatives

				woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.
PALEONTOLOGY				
GOALS Identify area-wide criteria or site-specific use restrictions where necessary to protect paleontological resources from surface-disturbing activities and to promote the scientific, educational, and recreational uses of fossils. Foster public awareness and appreciation of the paleontological heritage.				
MANAGEMENT COMMON TO ALL ALTERNATIVES Recreational collectors may collect and retain reasonable amounts of common invertebrate and plant fossils for personal, non-commercial use. Surface disturbance must be negligible, and mechanized tools may not be used. Petrified wood collection would be limited to amounts mandated in BLM regulations. Collection of scientifically noteworthy and/or uncommon invertebrate and plant fossils may require a permit. Vertebrate fossils may be collected only under a permit issued by the authorized officer to qualified individuals. Vertebrate fossils include bones, teeth, eggs, and other body parts of animals with backbones such as dinosaurs, fish, turtles, and mammals. Vertebrate fossils also include trace fossils such as footprints, burrows, and dung. Casting of vertebrate fossils, including dinosaur tracks, would be prohibited unless allowed under a scientific/research permit issued by the Utah State BLM Office. Fossils collected under a permit remain the property of the federal government and must be placed in a suitable repository (such as a museum or university) identified at the time of permit issuance. Lands identified for disposal or exchange would be evaluated to determine whether such actions would remove important fossils from federal ownership. In areas where surface disturbance, either initiated by BLM or by other land users, may threaten substantial or noteworthy fossils, BLM would follow its policy per Paleontology Resources Management Manual and Handbook 8370-1 (BLM 1998a) to assess any threat and mitigate damage. Where scientifically noteworthy fossils are threatened by natural hazards or unauthorized collection, BLM would work with permittees and other partners to salvage specimens and reduce future threats to resources at risk.				
Alternative A (No Action)	**Alternative B**	**Alternative C (Preferred)**	**Alternative D**	**Alternative E**
	Conduct on-site evaluation of surface-disturbing activities for all Category 3, 4/5, and 5 areas, and avoid impacts to paleontological resources.	Conduct on-site evaluation of surface-disturbing activities for all Category 5 areas and minimize impacts to paleontological resources to the degree practicable. Evaluation will consider the type of surface disturbance proposed and mitigation will be developed based on site specific information.		Same as Alternative B.
RECREATION				
GOAL To provide for multiple recreational uses of the public lands and to sustain a wide range of recreation opportunities and potential experiences for visitors and residents while supporting local economic stability and sustaining the recreation resource base and other sensitive resource values. **Explanation of Recreation Planning Concepts** Under all alternatives, the primary framework for recreation management in the Monticello PA is the Special Recreation Management Area (SRMA). This is used to define the following components of the recreation program: OHV designations, recreation permitting, developed recreation facilities, campsite designation, tourism, and heritage tourism. SRMAs are discussed below to provide the reader with an understanding of how this concept would be used to manage recreation in the Monticello PA. The management tools and techniques that would be used to support these concepts are discussed within each alternative. **Special Recreation Management Areas (SRMAs)** SRMAs are defined under Manual 8320 (BLM 1981), as "…areas where important public recreation issues or management concerns occur. Special or more intensive types of management are typically needed. Detailed recreation planning is required in these areas and greater managerial investment (e.g., facilities, supervision, etc.) is likely. There may be none to several of these areas within a field office. The size of these management units is typically over 1,000 acres, but exceptions can occur for smaller sites (e.g., very large campground units, trail segments, historical sites, etc.)." SRMAs are designated in each of the alternatives to meet the goals and objectives of the recreation program and to adhere to agency guidance as described above. **Extensive Recreation Management Areas (ERMAs)** An ERMA is defined as an area where substantial recreation opportunity and problems are limited, and explicit recreation management is not required. The BLM would manage all lands within the PA, not within an SRMA (either initially or through subsequent action as described above) as an ERMA.				
MANAGEMENT COMMON TO ALL ALTERNATIVES Continue existing ROWs issued to BLM for all existing developed recreation sites and facilities. Issue similar protective rights-of-way for all new recreation facilities. Manage recreation to meet Utah's Rangeland Health Standards guided by the Standards for Public Land Health and Guidelines for Recreation Management. (Reference Appendix E for Standards and Guides). The guidelines describe the procedures that should be applied to achieve standards for rangeland health within the recreation program. **BLM Recreation Guidelines:** • Recognize that various levels of regulations and limits are necessary. Restrictions and limitations on public uses should be as small as possible without compromising the primary goal. • Use on-the-ground presence as a tool to protect public lands. • Limit or control activities where long-term damage by recreational uses is observed or anticipated through specialized management tools such as designated campsites, permits, area closures, and limitations on number of users and duration of use. Revise recreation management plans and management framework plans when they prove to be either overly restrictive or inadequate to maintain public land health.				

Table 2.1. Summary Table of Alternatives

- Coordinate with federal and state agencies, county and local governments, and tribal nations in recreation planning and managing traffic, search and rescue operations, trash control and removal, and public safety.
- Consider and, where appropriate, implement management methods to protect the resource, as well as maintain the quality of experience of the various user groups. These methods could include limitation of numbers, types, timing, and duration of use.
- Encourage the location of public land recreational activities near population centers and highway corridors by placement of appropriate visitor-use infrastructure. Provide restrooms and other facilities that would be adequate for anticipated uses at designated campgrounds, trailheads, and other areas where there is a concentration of recreational users.
- Emphasize "Leave No Trace" camping and travel techniques throughout the Monticello PA.
- Consider and, where appropriate, implement management methods to protect natural and cultural resources and while giving consideration to community and economic impacts, implement management methods to maintain or enhance recreation opportunities. Management methods may include limitation of visitor numbers, camping and travel controls, implementation of fees, alteration of when use takes place, and other similar actions as they are approved through normal BLM procedures.
- Coordinate management of recreation use with other agencies, state and local government, and tribal units to provide public benefits, help assure public safety, and make effective use of staff and budget resources.
- Recreational OHV and mechanized travel would be consistent with route and area designations described in the travel management decisions. BLM would work with agency and government officials and permit holders to develop procedures, protocols, permits or other types of authorization as appropriate to provide reasonable access for non-recreational use of OHVs for military, search and rescue, emergency, administrative, and permitted uses.
- OHV access for game retrieval would follow all area and route designations. (There would be no off-road retrieval.)
- Dispersed camping, while allowed where not specifically restricted, may be closed seasonally or as impacts or environmental conditions warrant.

General Recreation Management Decisions

Allow development of hiking paths and trails within the PA subject to site-specific NEPA.

The following actions require a signed agreement with the specified agency:

- Manage BLM portion of the Colorado River in coordination with Canyonlands National Park and the Moab BLM FO.
- Manage BLM portion of the San Juan River in coordination with Glen Canyon National Recreation Area and the Navajo Nation.
- Manage BLM portion of Dark Canyon Complex in coordination with Manti-LaSal National Forest and Glen Canyon National Recreation Area.
- Manage BLM portion of the Keeley Trail in coordination with Hovenweep National Monument.

Management of Existing And Development of Future Recreation Facilities

Existing developed recreation sites would be maintained. New sites/facilities/trails would be developed in response to user demand, amenity value, and critical resource protection needs.

All developed recreation sites would be recommended for withdrawal from locatable mineral entry.

These sites would also be available for oil and gas leasing subject to NSO and unavailable for disposal of mineral materials.

Grazing would be excluded from developed recreation sites.

These areas are unavailable for private and/or commercial use of woodland products including on-site collection of dead wood for campfires.

MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES

General Recreation Management Decisions

Benefits Based Management Goals and Objectives (BBMs) have been written for each SRMA. (See Appendix E, Recreation.)

No camping within 200 feet of isolated springs to allow space for wildlife water.

Management of Existing And Development of Future Recreation Facilities

Develop or improve development of recreation sites as prioritized below.

- Kane Gulch Ranger Station (40 acres)
- Sand Island Campground (21 acres)
- Mexican Hat launch site (20 acres)
- Hamburger Rock Campground (20 acres)
- Comb Wash Campground (10 acres)
- Butler Wash Ruin (60 acres)
- Mule Canyon Ruin (10 acres)
- Three Kiva Pueblo (10 acres)
- Shay Mountain Vista Campground (20 acres)
- Indian Creek Recreational and Camping Facilities as outlined in the Indian Creek Recreation Corridor Plan.
- BLM would work with Natural Bridges National Monument to develop an overflow camping area. No campfires would be allowed in these overflow camping areas.
- BLM would work with Canyonlands National Park Needles District to develop an overflow camping area.
- The bench above Sand Island Campground (256 acres) would be closed to camping.

SRMA Plans

MANAGEMENT COMMON TO ALL ALTERNATIVES

Trailheads and associated parking/camping areas are included within the SRMA boundaries where the canyon areas (not the rims) are specified as the SRMA (Dark Canyon, White Canyon).

Provide general recreation management guidance and subsequent implementation of management decisions for activity plan–level actions for SRMAs through continuation of approved Recreation Area Management Plans (RAMPs) and development of new RAMPs for all SRMAs.

If necessary, activity plans would be written for SRMAs.

Table 2.1. Summary Table of Alternatives

Review and update RAMPS as necessary to make adjustments for changing conditions and opportunities.

General SRMA Guidelines

Identify additional SRMAs or add areas to SRMAs as necessary to respond to changing management circumstances.

Establishment of post-RMP SRMAs or revision of SRMA boundaries would require a plan amendment. The criteria for establishment of post-RMP SRMAs or revising SRMA boundaries include:

- Recreation use requires intensive management to provide recreation opportunities or maintain resource values.
- A recreation area management plan or interdisciplinary plan with intensive recreation management decisions is approved.
- BLM announces designation and plan approval through media.

All recreation management activities and developments in the SRMA would be in support of the individual SRMA goals and objectives.

MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES

General SRMA Guidelines

All SRMAs would be designated as special areas under the Land and Water Conservation Fund definition. As per the Land and Water Conservation Fund Act and the Federal Lands Recreation Enhancement Act, this could require permits and payment of fees for recreation use.

San Juan River SRMA

The SRMA would not include the area along Lime Ridge, the associated state section, or the Holliday Pit Quarry.

GOALS

Integrated management between the BLM, NPS, and the Navajo Nation to provide outstanding recreational opportunities and visitor experiences while protecting natural and cultural resource values.

OBJECTIVES

By the year 2012, manage this zone to provide opportunities for visitors to engage in backcountry river-running, camping, and cultural appreciation recreation, providing no fewer than 75% of responding visitors and impacted community residents at least a moderate realization of these benefits: (i.e., 3.0 on a probability scale where 1 = not at all, 2 = somewhat, 3 = moderate, 4 = total realization).

MANAGEMENT COMMON TO ALL ALTERNATIVES

Permits would be issued to commercial companies on a five-year designated basis. They would also be issued to private users through an annual lottery system.

River trips on the San Juan River would require a special use permit.

Unavailable for woodland product use except for limited on-site collection of dead wood for campfires, and permitted wood gathering by Native Americans; woodland use within the floodplain would be limited to collection of driftwood for campfires. Cottonwood and willow harvest would be allowed for Native American ceremonial uses only. Restrictions on harvest would be implemented as necessary to achieve or maintain PFC, and to maintain or improve TES/SSS habitat. Harvest would be administered under a permit system.

Backpackers in Slickhorn Canyon and Grand Gulch would not be allowed to camp within 1 mile of the river.

Open to campfire use with fire pan.

Alternative A (No Action)	Alternative B	Alternative C (Preferred)	Alternative D	Alternative E
SRMA, 15,100 acres managed to preserve ROS P-class and protect ROS SPNM-class (9,380 acres).	The San Juan River would be managed as an SRMA (10,203 acres). The boundary would remain as in previous RMP. Efforts would be made to purchase private lands within the SRMA boundary. The SRMA boundary east of existing Oil and Gas Leasing Category III (NSO) would be below the bench, thereby allowing access to high-quality gravel.	The San Juan River would be managed as an SRMA (9,859 acres). The boundary would remain as in the previous RMP with the exception of Lime Ridge etc. The ACEC boundary would also be changed to match the D4600 Motorized Trail. The SRMA would include the Hole in the Rock Trail. The SRMA boundary east of existing Oil and Gas Leasing Category III (NSO) would be below the bench, thereby allowing access to high-quality gravel.	The San Juan River would be managed as an SRMA (6,365 acres). The boundary would be changed to make the SRMA the same size as the ACEC. The SRMA boundary east of existing Oil and Gas Leasing Category III (NSO) would be below the bench, thereby allowing access to high-quality gravel.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.
Motorized Boating Downstream travel is allowed at low, wakeless speed. Upstream travel is prohibited except for emergency purposes (SPM).	No motorized boating would be allowed, except for emergency purposes.	Same as Alternative A.	Same as Alternative A.	
Launch Limits Current launch limits allow approximately 40,000 user/days per year, private and commercial trips combined. Trip size is limited to 25 people on private trips, and 25 passengers plus 8 crew on commercial trips.	Launch limits would be reduced to provide a river experience that improves visitor experience and perception of solitude, and would reduce potential impacts on the resource. Launch schedules would allow approximately 30,000 user/days per year. Trip size would be limited to 20 people (including crew) for both private and commercial use.	Launch limits would be changed to allow for an improved visitor experience (e.g., hiking opportunities) and increased perception of solitude below Mexican Hat while remaining within the limitations set by the availability of campsites between Slickhorn Canyon and Clay Hills. Launch limits would allow approximately 40,000 user/days per year.	Launch limits would be raised to allow for increased visitor access to resources. Launch schedules would allow approximately 45,000 user/days per year, private and commercial trips combined. Trip size would be increased to a maximum of 35 people per trip for both private and commercial use.	

Table 2.1. Summary Table of Alternatives

		Trip size would be limited to 25 people (including crew) total for both private and commercial trips.		
Commercial/Private Allocations Commercial use, including day trips, is allowed up to 50% of total use. Commercial day trips are not included in launch limits.	Commercial use would be restricted to 30% of total use. One commercial day trip would be allowed and would be included in the allocation and launch limits.	Commercial use would be allowed up to 40% of total use. One commercial day trip per day would be allowed and would not be included in the launch limits.	Commercial/private allocation would be split on a 50/50 basis. Commercial day trips would be allowed on an unlimited basis and would not be included in the launch limits.	
Administrative/Research Use Administrative and research use is currently not included in the launch limits.	Administrative and research use would be restricted to use that can be accommodated within the launch limit.	Administrative and research use would be authorized on a case-by-case review and determination.	Same as Alternative C.	
Visitor Services Minimal visitor services at Sand Island and Mexican Hat ramp areas are provided for visitor health and safety and resource protection.	Minimal visitor services at Sand Island and Mexican Hat ramp areas would be provided for visitor health and safety and resource protection.	Same as Alternative B.	Increased visitor services, including trash receptacles and toilet clean-out facilities, would be provided for visitor health and safety and resource protection at Sand Island, Mexican Hat ramp areas.	
Designated Campsites To minimize conflict in the area from Slickhorn Canyon to Clay Hills, 9 campsites are available for reservation at the time the permit is issued. From May 15 to June 15, only 1 night is allowed in the reserved area. At other time, 2 nights are allowed if available, but must be at 2 different campsites (i.e., 2 nights cannot be spent at the same campsite).	A Memorandum of Understanding would be signed between the NPS/GCNRA and the Navajo Nation. This memorandum would include details on numbers of campsites and their associated permit restrictions.	Same as Alternative B.	Same as Alternative B.	
Non-Boating Use Vehicle camping is not restricted.	With the exceptions of along Lime Creek Road, the Mexican Hat Rock area, and Mexican Hat Boat Ramp, vehicle camping would be allowed within the San Juan SRMA only upstream of Comb Wash. Lime Creek campsite would be reserved for river runners only. All campers (including backpackers) must have carry-out toilets. The bench above Sand Island Recreation Area would be closed to camping, including portions outside of the SRMA. Area wide, camping would be closed within 0.5 mile of designated campsites.	Same as Alternative B.	Vehicle camping would not be restricted within the San Juan River SRMA except for the following: • The bench above Sand Island Recreation Area would be closed to camping, including portions outside of the SRMA. • Area wide, camping would be closed within a 0.5 mile of designated campsites.	With the exception of along Lime Creek Road, and the Mexican Hat Rock area, and Mexican Hat Boat Ramp, vehicle camping would be allowed within the San Juan SRMA only upstream of Comb Wash. Lime Creek campsite would be reserved for river runners only. All campers (including backpackers) must have carry-out toilets. The bench above Sand Island Recreation Area would be closed to camping, including portions outside of the SRMA. Area wide, camping would be closed within a ½ mile of designated campsites.
Minerals Managed as described in 1991 San Juan RMP (BLM 1991a), pages 78 and 100. Available for mineral leasing with special conditions. Available for geophysical. Available for mineral entry with an approved plan of operations.	Available for oil and gas leasing subject to NSO and recommended for withdrawal from locatable mineral entry and unavailable for disposal of mineral materials.	Same as Alternative B.	Same as Alternative B.	Available for oil and gas leasing subject to NSO and recommended unavailable for locatable mineral entry. and disposal except for lands with wilderness characteristics which would be unavailable for oil and gas leasing.
Grazing Available for livestock use.	Grazing in the riparian area would be restricted to October 1–May 31 and must meet or exceed PFC, and incorporate rest-rotation and/or deferment systems. This would include Perkins Brothers, East League, and McCracken Wash Allotments.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B. Fire suppression on non-WSA lands with wilderness characteristics would be through light on the land techniques.

Table 2.1. Summary Table of Alternatives

Watershed	Watershed control structures would be subject to surface restrictions and seasonal restrictions to protect bighorn sheep lambing and rutting areas. Vehicle access in other areas within the SRMA would be limited to designated routes. Area would be subject to fire suppression to protect riparian habitat.	Same as Alternative B.	Same as Alternative B.	No vehicle access through non-WSA lands with wilderness characteristics. Watershed structures would have to meet VRM Class I objectives.
Other	Would be managed to maintain an environment of isolation insofar as allowed by river permit and patrol system. Recommended for withdrawal from locatable mineral entry. Surface disturbance from mining activities on existing claims would be limited to the extent possible without curtailing valid existing rights. The area above the rim in the vicinity of the Bluff airport lease would be available for mineral materials disposal. No vehicle access would be allowed from Comb Wash downstream to Lime Creek, and below Mexican Hat Bridge. OHV use would be limited to designated roads and trails.	Would be managed to maintain an environment of isolation insofar as allowed by river permit and patrol system. Recommended for withdrawal from locatable mineral entry. Surface disturbance from mining activities on existing claims would be limited to the extent possible without curtailing valid existing rights. No vehicle access would be allowed from Comb Wash downstream to Lime Creek and below Mexican Hat Bridge (except for motorized boat use on the river). In areas open to OHV use, mechanized/motorized travel would be limited to designated routes.	Would be managed to maintain an environment of isolation insofar as allowed by river permit and patrol system. Recommended for withdrawal from locatable mineral entry. Surface disturbing from mining activities on existing claims would be limited to the extent possible without curtailing valid existing rights. The area above the rim in the vicinity of the Bluff airport lease would be available for minerals materials disposal. No vehicle access would be allowed from Comb Wash downstream to Lime Creek, and below Mexican Hat Bridge. OHV use would be limited to designated roads and trails.	Same as Alternative B.

(Cedar Mesa) Cultural SRMA (C-SRMA)

GOALS

Integrated management between the BLM and NPS to provide outstanding recreational opportunities and visitor experiences while protecting natural and cultural resource values.

OBJECTIVES

By the year 2012, manage this zone to provide opportunities for visitors to engage in Backcountry, Middle-country, Front-country, and Rural cultural appreciation recreation, providing no fewer than 75% of responding visitors and impacted community residents at least a moderate realization of these benefits (i.e., 3.0 on a probability scale where 1 = not at all, 2 = somewhat, 3 = moderate, 4 = total realization).

MANAGEMENT COMMON TO ALL ALTERNATIVES

Portions of the Cedar Mesa Cultural SRMA fall within existing WSAs. WSAs would be managed according to the IMP. WSAs would be managed as VRM Class I.

MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES

The Grand Gulch SRMA would be changed to the Cedar Mesa Cultural Special Recreation Management Area and would be managed according to guidelines stipulated below. A joint recreation/cultural resources management plan would be written for this area based on the RMP.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Camping: Allowed only at existing campsites. No new campsites may be developed. Camping in Grand Gulch between Kane Gulch and Bullet Canyon is limited to no more than 2 consecutive nights at one campsite. The bench surrounding Split Level Ruin in Grand Gulch is closed to camping. No unauthorized use of existing corrals. **Campfires:** Prohibited in all canyons. **Areas for Day Use only:** Bullet Canyon from Grand Gulch to Jailhouse Ruin. Two miles upstream Fish Canyon from the confluence with Owl Canyon, McLoyd Canyon to impassable pour-off, and Owl Canyon to Nevill's Arch. **Pets:** No limit or fees for pets. All pets must be collared, leashed, and under human control at all times. No pets are allowed in Slickhorn Canyon or below	The following stipulations would apply to the Cedar Mesa Cultural SRMA (375,734 acres): • Available for livestock use with special conditions to protect at risk cultural resources. • Available for watershed, range, and wildlife improvements and vegetation treatments. • Mesa tops and canyons closed to campfire use. • Unavailable for commercial and/or private use of woodland products including on-site collection of dead wood for campfires. • Open to dispersed camping except in areas where cultural resources are at risk. • Permits will be Limited (25 people total) for day hikes and overnight camping to prevent cultural site damage.	Cedar Mesa Cultural SRMA (375,734 acres) would be managed the same as Alternative B except for the following: • Campfires allowed on mesa tops only; fire pan required. • Available for commercial and/or private use of woodland products including on-site collection of dead wood for campfires (outside WSAs and canyons bottoms). **Pets and Stock** Same as Alternative A with these exceptions: • If resources or the visitors' experiences are adversely impacted, pets and or stock animals may be limited or prohibited in canyons requiring permits.	Cedar Mesa Cultural SRMA (375,734 acres) the same as Alternative C except for: **Pets and Stock** Same as Alternative A with the exceptions: • If resources or the visitors' experiences are adversely impacted, pets and or stock animals may be limited or prohibited. People with pets would be required to conform to stipulations described in Alternative A. • Stock limitations would be the same as Alternative A.	The following stipulations would apply to the Cedar Mesa Cultural SRMA (375,734 acres): • Available for livestock use with special conditions to protect at risk cultural resources and wilderness characteristics. • Available for watershed, range, and wildlife improvements and vegetation treatments on lands without wilderness characteristics (acreage). On lands with wilderness characteristics, maintenance of existing improvements is allowed, no new improvements will be allowed. • Mesa tops and canyons closed to campfire use. • Unavailable for commercial and/or private use of woodland products including on-site collection of dead wood for campfires.

Table 2.1. Summary Table of Alternatives

Collins Canyon in Grand Gulch. Pets are not allowed in or at any alcoves, rock art sites, or ruins. Pets must not harass or harm wildlife. Pets must not harass visitors and other visitors' pets. Pets are not allowed to swim in springs, pot holes, or other natural water sources. Pet waste must be buried in a shallow hole away from trails, campsites, cultural sites, and natural water sources. **Stock: horses, llamas, goats, etc:** All commercial and private stock use requires a permit. GGPA allows 1 stock trip at any one time allowed in GGPA, includes day use. Other Cedar Mesa canyons allow 1 overnight stock trip at any one time, and unlimited day use. **Overnight stock use areas**: Kane Gulch, Collins Canyon, Government Trail, Grand Gulch from Kane Gulch to Collins Canyon, Fish Creek Canyon from Comb Wash to confluence with Owl Canyon, Mule Canyon South of U-95, Road Canyon, Lime Creek Canyon, Johns Canyon, and Arch Canyon. **Areas Closed to Stock use**: Grand Gulch below Collins Canyon, all the Slickhorn Canyons, Mule Canyons north of U-95, Bullet Canyon above Jailhouse Ruin, Fish Creek Canyon from 2 miles upstream from Fish Creek and Owl Creek confluence, and Owl Canyon above Nevill's Arch. **Use Limitations**: Stock use, both day and overnight, is subject to the provisions of the Grand Gulch Plateau Cultural and Recreation Management Plan, which allows for no more than 1 overnight stock party at a time in any canyon on Cedar Mesa. However, Grand Gulch is limited to only one stock trip at any time, day or overnight. In the other canyon systems on Cedar Mesa, day stock use is not restricted at this time. The BLM would monitor day use, and reserves the right to implement a day-use allocation and reservation future date if the impacts of day-use visitation warrant. **Group Size**: Overnight and day use in the Grand Gulch Primitive area and other Cedar Mesa Canyons restricted to 12 individuals and 10 animals (pack and/or saddle). **Feed:** Stock users would be required to take all feed (non-germinating, weed free) necessary to sustain their animals while on the trip. **Loose Herding** of pack and saddle stock is prohibited. All stock must be under physical control. When tethered, all stock must be at least 200 feet away from any water source and archaeological sites and their surrounding benches. **No New Trails** would be established for stock use. Use would be restricted to existing trials and routes in areas open to recreational stock use.	• Managed as VRM Class III and IV. **Pets and Stock** Same as Alternative A with the following exceptions: • Pets would not be allowed in canyons requiring permits. (Grand Gulch and its tributaries), Fish Canyon, Owl Canyon, McLoyd Canyon, Slickhorn Canyon, Road Canyon, Lime Canyon, and North and South Mule Canyons). • Recreational stock (horses, pack animals, etc.) would not be allowed in canyons requiring permits.	• Limitations on stock use would be identical to Alternative A with the exception that stock day use would be limited to 1 party per day per trailhead in all canyons requiring permits (except Grand Gulch and McLoyd). • Stock would be limited to 8 animals.		• Open to dispersed camping except in areas where cultural resources are at risk. • Permits will be Limited (25 people total) for day hikes and overnight camping to prevent cultural site damage. • Lands without wilderness characteristics will be managed as VRM Class III and IV. Lands with wilderness characteristic will be managed as VRM Class I. **Pets and Stock** Same as Alternative A with the following exceptions: • Pets would not be allowed in canyons requiring permits. (Grand Gulch and its tributaries), Fish Canyon, Owl Canyon, McLoyd Canyon, Slickhorn Canyon, Road Canyon, Lime Canyon, and North and South Mule Canyon). • Recreational stock (horses, pack animals, etc.) would not be allowed in canyons requiring permits.

Table 2.1. Summary Table of Alternatives

Grand Gulch Plateau (Cedar Mesa) Mesa Top Day Use				
There is no allocation or group size.	No allocations on group numbers. Group size limited to 10 people for both private and commercial use, both within and outside of the WSA.	No allocations on group numbers. Group size limited to 12 people for both private and commercial use, both within and outside of the WSA. No group size limits for groups going to the following areas: Mule Canyon Ruin, Kane Gulch Ranger Station, Salvation Knoll, and other sites as identified.	No allocations on group numbers. Group size limit of 12 people for private and commercial use within the WSA and 25 people outside of the WSA. No group size limits for groups going to the following areas: Mule Canyon Ruin, Kane Gulch Ranger Station, Salvation Knoll, and other sites as identified.	No allocations on group numbers. Group size limited to 10 people for private and commercial use, both within and outside of the WSA.
Grand Gulch Plateau (Cedar Mesa) Mesa Top Camping				
MANAGEMENT COMMON TO ALL ALTERNATIVES Revise the current Grand Gulch Plateau Cultural and Recreation Area Management Plan. **MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES** 14-day camping limit within any 28 consecutive days, with the options of reducing the number of days or closing campsites if impacts occur.				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Cedar Mesa is open to dispersed camping. There is no allocation no group size. No permits or fees required for private or commercial camping.	Designated primitive campsites. Group size limited to 12 people for both private and commercial use. Closure of campsites impacting cultural sites. Overnight campers required to remove their human waste.	Designated primitive campsites. Designated campsites for large groups (12 to 24 people). Group size limited to 24 people for both private and commercial use. Closure of campsites impacting cultural sites. Overnight campers required to remove their human waste.	No designated campsites for groups under 24. Designated campsites for groups of 24 and larger. No group size limit. Closure of campsites impacting cultural sites. Campsite facility development as needed (fire grates, picnic tables, toilets, etc.).	Designated primitive campsites. Group size limited to 12 people for both private and commercial use. Closure of campsites impacting cultural sites. Overnight campers required to remove their human waste.
Grand Gulch Plateau (Cedar Mesa) In-canyon Private/ Commercial Day Use				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Private No limits on numbers of parties per day per trailhead for day use. Group size limited to 12. **Commercial** Group size limited to12. No limits on number of parties per day per trailhead. Revise The Grand Gulch Plateau Cultural and Recreation Area Management Plan. Advanced permit required through Monticello PA.	**Private** Limit of 10 people per day per trailhead. Group size limited to 10. Mandatory permits during high-use season. **Commercial** Group size limited to 10. One commercial group every other day per trailhead. Limit commercial use or close areas to commercial use as necessary to protect cultural and other resources. Advanced permit required through Monticello PA.	**Private** Limit of 12 people per day per trailhead. Group size limited to 12. A limited day use permit system implemented as necessary to protect cultural and other resources. **Commercial** Group size limited to 12. One commercial group per day per trailhead. Implement additional restrictions on group size and visitor frequency (based on monitoring of impact) as necessary to protect cultural or other resources. Advanced permit required through Monticello PA.	Same as Alternative C with the following exception: • Limit of 2 commercial groups per trailhead per day.	**Private** Limit of 10 people per day per trailhead. Group size limited to 10. Mandatory permits during high use season. **Commercial** Group size limited to 10. One commercial group every other day per trailhead. Limit commercial use or close areas to commercial use as necessary to protect cultural and other resources. Advanced permit required through Monticello PA.
Grand Gulch Plateau (Cedar Mesa) In-Canyon Permitted Overnight Camping				
MANAGEMENT COMMON TO ALL ALTERNATIVES Pack it in, pack it out. All cans, trash, organic garbage, and burnable refuse including toilet paper must be carried out. Liquid garbage may be discarded 200 feet away from water sources. Dish water must be strained and discarded 200 feet from camps, trails, and water sources. No swimming or bathing is allowed in the pools. Commercial allocation would be 30% of the Cedar Mesa permitted use.				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Group size limited to 12 people for overnight use. Groups of 8 or more must obtain an advanced reservation. Camping permitted in well-used campsites only. No new campsites may be created. No party may spend more than 2 consecutive nights at campsites near Junction Ruin, Turkey Pen Ruin, Jailhouse Ruin, and the mouth of Bullet Canyon.	Same as Alternative A except for: • Designated campsites for groups up to 4, up to 8, and up to 10 people, and groups with stock. • In-canyon camping could be limited to certain designated areas if resource or cultural damage occurs. • If human waste becomes a public safety and/or resource issue, a requirement to carry out waste may	Same as Alternative A except for: • Designated campsites for large groups of 8-12 people, and for groups with stock animals. • Groups of 1-7 people would not have designated campsites and would camp in dispersed campsites. • In canyon camping could be limited to certain designated areas if resource or cultural damage occurs.	Same as Alternative A except for: • Dispersed camping for groups of 1-7. • Designated campsites for groups of 8-12 and groups with stock. • If human wasted becomes a problem, carrying out waste may be implemented. • Total caps on visitor numbers for each trailhead are shown below. Caps on visitor numbers or group size	Same as Alternative A except for: • Designated campsites for groups up to 4, up to 8, and up to 10 people, and groups with stock. • In-canyon camping could be limited to certain designated areas if resource or cultural damage occurs. • If human waste becomes a public safety and/or resource issue, a requirement to carry out waste may

Table 2.1. Summary Table of Alternatives

No camping allowed at any ruins, rock art sites, or alcoves, nor on the bench area surrounding Split Level Ruin. Backpacker camping is not allowed within 1 mile of the San Juan River in either Grand Gulch or Slickhorn Canyon. No fires allowed in any of the Cedar Mesa Canyons, including Grand Gulch. Latrines or shallow cat-holes for human waste disposal should be dug 4-6" deep and covered with soil. Pack out toilet paper, do not burn it. Burial of human waste prohibited within one mile of the San Juan River. Disposal of human waste at least 200 feet from water sources or dry creek beds. Camping, bathing, and dish washing must be at least 200 feet from water sources or dry creek beds. Soap may not be used in water sources, even if biodegradable. Camping permitted in well-used campsites only. No new campsites may be created. No party may spend more than 2 consecutive nights at campsites near Junction Ruin, Turkey Pen Ruin, Jailhouse Ruin, and the mouth of Bullet Canyon. Commercial trips limited to 1 commercial trip per day per trailhead.	be implemented. **Private:** • Private group size limited to 6 people per day per trailhead. • Total caps on visitor numbers for each trailhead are shown below. **Commercial:** • Commercial guides would be required to meet all pertinent state requirements. • Commercial group size limited to 10 people per day per trailhead. • Total caps on visitor numbers for each trailhead are shown below.	• If human waste becomes a problem, carrying out waste may become implemented. • Total caps on visitor numbers for each trailhead are shown below. Caps on visitor numbers or group size may be modified as necessary to protect resources. **Private**: • Private group size limited to 8 people per day per trailhead. **Commercial:** • Commercial group size limited to 12 people per day per trailhead. • One commercial group per trailhead per day. • Commercial guides are required to meet all pertinent state guidelines.	may be modified as necessary to protect resources. **Private:** • Private group size limited to 12 people per day per trailhead. • If no commercial group allocation, 12 additional permits would be available. **Commercial**: • Group size limited to 12 people per day per trailhead. • Commercial guides would be required to meet all pertinent state requirements. • Commercial trips would be limited to one commercial trip per day per trailhead.	be implemented. **Private:** • Private group size limited to 6 people per day per trailhead. • Total caps on visitor numbers for each trailhead are shown below. **Commercial:** • Commercial guides would be required to meet all pertinent state requirements. • Commercial group size limited to 10 people per day per trailhead. • Total caps on visitor numbers for each trailhead are shown below.
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Trailhead allocations Total overnight visitors per day: Kane 26 Bullet 22 Government 12 Collins 22 Fish/Owl 26 Road Canyon 22 Lime Creek 22 Mule Canyons 22 Slickhorn Canyons 22	**Trailhead allocations** Total overnight visitors per day: Kane 16 Bullet 16 Government 16 Collins 16 Fish/Owl 16 Road Canyon 16 Lime Creek 16 Mule canyons 16 Slickhorn Canyons 16	**Trailhead allocations** Total overnight visitors per day: Kane 20 Bullet 20 Government 20 Collins 20 Fish/Owl 20 Road Canyon 20 Lime Creek 20 Mule Canyons 20 Slickhorn Canyons 20 If commercial cap limits are not met on a given day, additional private visitors would be allowed provided the overall cap of 20 people per trailhead is not exceeded.	**Trailhead allocations** Total overnight visitors per day Kane 24 Bullet 24 Government 24 Collins 24 Fish/Owl 24 Road Canyon 24 Lime Creek 24 Mule Canyons 24 Slickhorn Canyons 24 If commercial cap limits are not met on a given day, additional private visitors would be allowed provided the overall cap of 24 people per trailhead is not exceeded.	**Trailhead allocations** Total overnight visitors per day: Kane 16 Bullet 16 Government 16 Collins 16 Fish/Owl 16 Road Canyon 16 Lime Creek 16 Mule canyons 16 Slickhorn Canyons 16

Dark Canyon SRMA

GOALS

Integrated management between the BLM, USFS and NPS to provide outstanding recreational opportunities and visitor experiences, while protecting natural and cultural resource values.

OBJECTIVES

By the year 2012, manage this zone to provide opportunities for visitors to engage in backcountry muscle-powered exercise and cultural appreciation recreation, providing no fewer than 75% of responding visitors and impacted community residents at least a moderate realization of these benefits: (i.e., 3.0 on a probability scale where 1 = not at all, 2 = somewhat, 3 = moderate, 4 = total realization).

MANAGEMENT COMMON TO ALL ALTERNATIVES

Create and allocate an interagency permit and fee system for these canyons as necessary to preserve resources and the visitor experience.

MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES

All Action Alternatives would separate the existing Canyon Basin SRMA into the Dark Canyon SRMA and the Indian Creek SRMA, with management prescriptions described below by alternative.

The Dark Canyon SRMA would include canyon rims and bottoms for Dark Canyon, Gypsum Canyon, Bowdie Canyon, Lean To Canyon, Palmer Canyon, Lost Canyon, Black Steer Canyon, Young's Canyon, and Fable Valley Canyon. Trailheads and associated parking/camping areas are included within the SRMA boundaries where the canyons are specified as the SRMA.

Table 2.1. Summary Table of Alternatives

An Interagency Management Plan would be written in coordination with the NPS and USFS.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
* In the current RMP, this area is part of the Canyon Basin's SRMA. The Canyon Basin (214,390) SRMA would include both the proposed Dark Canyon SRMA and the proposed Indian Creek SRMA, and would be managed according to the following stipulations: • No group size limit • Commercial permits required • No private permits required • No group limits • No permit fees • No interagency permitting • Little ranger presence • Fires permitted • Dogs permitted • Open dispersed camping permitted • Vehicle use	Dark Canyon (30,820 acres) would be managed as an SRMA with the following prescriptions: • Group size limit would be limited to 10 people for private groups, 12 people for commercial groups. • Implementation of an allocated permit and fee system. • 1 commercial trip allowed per week. • 15 total private users per day. This number could be altered depending upon future visitor impacts. • Camping in designated sites only. • Campfires limited to mesa tops. • Human waste must be packed out. • Unavailable for private and/or commercial collection of woodland products, including on-site collection of dead wood for campfires. • No pets would be allowed.	Dark Canyon (30,820 acres) would be managed as an SRMA with the following prescriptions: • Group size would be limited to 15 people for private and commercial. • 3 commercial trips would be allowed per week. • 20 total private users allowed per day. This number may be altered depending upon future visitor impacts. • If and where necessary, camping would be restricted to designated sites only. • Campfires would be allowed on mesa tops (fire pan required); cook stoves only in canyons. • Unavailable for private and/or commercial collection of woodland product use except for the on-site collection of dead wood for campfires on mesa tops. • If human waste becomes a problem, carrying out waste may be implemented in canyon. • Pets would be allowed on leash and under physical control.	Dark Canyon (30,820 acres) would be managed as an SRMA with the following prescriptions: • Group size limited to 15 people for private and commercial. • Seven commercial trips would be allowed per week. • Dispersed camping would be allowed in canyon and on mesa top. • Campfires would be allowed on mesa tops and in canyons (fire pan required). • Unavailable for private and/or commercial collection of woodland product use except on-site collection of dead wood for campfires. • Pets would be allowed on leash and under physical control.	Dark Canyon (30,820 acres) would be managed as an SRMA with the following prescriptions: • Group size limit would be limited to 10 people for private groups, 12 people for commercial groups. • An allocated permit and fee system would be implemented. • 1 commercial trip would be allowed per week. • 15 total private users would be allowed per day. This number could be altered depending upon future visitor impacts. • Camping would be allowed in designated sites only. • Campfires would be limited to mesa tops. • Human waste must be packed out. • Unavailable for private and/or commercial collection of woodland products including on-site collection of dead wood for campfires. • No pets would be allowed.

Indian Creek SRMA (89,271 acres)

GOALS

Integrated management between the BLM, NPS, and the Nature Conservancy to provide outstanding recreational opportunities and visitor experiences while protecting natural and cultural resource values.

OBJECTIVES

By the year 2012, manage this zone to provide opportunities for visitors to engage in Backcountry, Middle-country, Front-country, and Rural activities and cultural appreciation recreation, providing no fewer than 75% of responding visitors and impacted community residents at least a moderate realization of these benefits: (i.e., 3.0 on a probability scale where 1 = not at all, 2 = somewhat, 3 = moderate, 4 = total realization).

MANAGEMENT COMMON TO ALL ALTERNATIVES

There would be a proposed Open OHV area within the Indian Creek SRMA. See Travel Plan alternatives.

Portions of the Indian Creek SRMA lie within portions of the Indian Creek WSA. WSAs are managed under the IMP.

MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES

Indian Creek (89,271 acres) would be managed as an SRMA.

Indian Creek SRMA boundary would match the boundary for the Indian Creek Corridor Plan and Environmental Assessment (EA).

Management of the Indian Creek Corridor would be in conformance with the guidance outlined in the Indian Creek Corridor Plan, which includes the following guidelines:

- Camping would be prohibited in the Indian Creek riparian corridor from Newspaper Rock to approximately 1 mile downstream of the Dugout Ranch. Camping outside of the riparian corridor within this area would be limited to designated campsites only.
- Designated campgrounds would be removed from the Newspaper Rock area and rehabilitated.
- A picnic area would be constructed adjacent to the Newspaper Rock parking area.
- Camping along the Bridger Jack Mesa Bench would be limited to designated sites.
- A new campground called Shay Mountain Vista Campground would be constructed.
- The area would be unavailable for private and/or commercial use of woodland products, including on-site collection of dead wood for campfires. Campers must bring in their own wood for campfires.
- Campfires would be restricted to fire rings where fire rings are available. In dispersed camping areas, where fire rings are not available, fires would be subject to "Leave No Trace" standards.
- Rock-climbing routes in conflict with cultural sites would be closed.
- Camping fees would be charged if deemed necessary to provide needed facilities.
- Parking areas would be developed.
- Additional camping stipulations and regulations could be implemented if monitoring data shows this is necessary.
- If new climbing routes are established, the BLM may designate a footpath to access the base of the climb to protect wildlife/raptors.

Table 2.1. Summary Table of Alternatives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Dispersed camping would be allowed in Indian Creek Corridor. Canyon Basins SRMA (214,390 acres) – The Canyon Basins SRMA would include the existing Dark Canyon SRMA and the proposed Indian Creek, Harts Point, Lockhart Basin, and Beef Basin SRMAs.	Indian Creek SRMA (89,271 acres) – Dispersed camping would not be allowed in the Indian Creek Corridor (see Map 31). Camping would only be allowed in designated sites.	Indian Creek SRMA (89,271 acres) – Dispersed camping would be allowed in the Indian Creek Corridor, except within the following designated dispersed camping zones that have been established: Bridger Jack Mesa, Indian Creek Falls, and Creek Pasture. Camping within these zones is limited to designated sites.	Same as Alternative C.	Same as Alternative B.
White Canyon SRMA				
GOALS Integrated management between the BLM and NPS (including the Glen Canyon National Recreation Area and Natural Bridges National Monument) to provide outstanding recreational opportunities and visitor experiences, while protecting natural and cultural resource values. **OBJECTIVES** By the year 2012, manage this zone to provide opportunities for visitors to engage in Backcountry recreation, including camping , providing no fewer than 75% of responding visitors and impacted community residents at least a moderate realization of these benefits: (i.e., 3.0 on a probability scale where 1 = not at all, 2 = somewhat, 3 = moderate, 4 = total realization). **MANAGEMENT COMMON TO ALL ALTERNATIVES** Trailheads and associated parking/camping areas are included within the SRMA boundaries where the canyons are specified as the SRMA. The White Canyon SRMA is defined as from rim to rim. Canyons excluded from woodland product use including on-site collection of dead wood for campfire.				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
This area was not identified as an SRMA in the 1991 San Juan Resource Area RMP, as amended. These lands are managed according to the 1991 San Juan RMP prescriptions.	White Canyon (2,828 acres) would be managed as a SRMA with the following prescriptions: • A back-country allocated permit system would be established as necessary to protect resources. • Fire pans would be required for mesa tops. • Campfires would not be allowed. • Human waste must be packed out.	White Canyon (2,828 acres) would be managed as a SRMA with the same management prescriptions as Alternative B except for the following: • If human waste becomes a problem, carrying out waste may be implemented in the canyon. • Campfires would be allowed on mesa tops (fire pan required); cook stoves would only be allowed in canyons. • Campfires would not be allowed in the canyons.	White Canyon (2,828 acres) would be managed as a SRMA with the following prescriptions: • No permit system would be required. • If human waste becomes a problem, carrying out waste may become implemented in the canyon. • Campfires would be allowed on mesa tops and canyons (fire pan required).	Same as Alternative B.
Extensive Recreation Management Areas (ERMAs)				
An ERMA is defined as an area where substantial recreation opportunity and problems are limited, and explicit recreation management is not required. Minimal management decisions related to the BLM's stewardship responsibilities are adequate in these areas. **GOALS AND OBJECTIVES** ERMA lands would be managed to provide an undeveloped setting where visitors can disperse and recreate in a generally unregulated manner, as long as the use is consistent with other resource values. The objective of an ERMA is to provide dispersed recreational opportunities consistent with other resource objectives.				
MANAGEMENT COMMON TO ALL ALTERNATIVES Any portions of an ERMA subject to other management prescriptions (i.e., ACEC, WSA, etc.) would be managed according to those prescriptions. Monitor ERMA to determine if more intensive recreational management is required to protect resource values and preserve the recreational experience. Encourage "Leave No Trace" and "Tread Lightly" principles throughout the ERMA. Manage all lands within the PA, not within an SRMA (either initially or through subsequent action as described above) as the Monticello Extensive Recreation Management Area. ERMA lands may be designated as SRMAs in the future based on intensity of use and would be analyzed through the plan amendment process. Minimal facilities may be constructed in the ERMA as needed to insure visitor health and safety, reduce user conflict, and protect resources. **MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES** Mesa Top Camping (other than Cedar Mesa): • Limit the Bears Ears Road to designated camping only from the intersection of Highway 275 to the USFS boundary. • Limit the Deer Flat Road to designated camping only from the first 4 miles from Highway 275. • Coordinate with Glen Canyon National Recreation Area on building a campground at Muley Point or pursuing a land exchange for Muley Point in order to develop a campground.				

Table 2.1. Summary Table of Alternatives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Not specified	Dispersed vehicle camping would be allowed only in previously disturbed areas off of designated routes. If use is such that undue environmental impacts are taking place, BLM would close and rehabilitate damaged areas.	Dispersed vehicle camping would be allowed within 150 feet of the centerline of designated route on each side. If use is such that undue environmental impacts are taking place, BLM would close and rehabilitate damaged areas. Dispersed camping would be encouraged in previously disturbed areas.	Dispersed vehicle camping would be allowed 300 feet of the centerline of the road on each side. If use is such that undue environmental impacts are taking place, BLM would close and rehabilitate damaged areas. Dispersed camping would be encouraged in previously disturbed areas.	Dispersed vehicle camping would be allowed only in previously disturbed areas off of designated routes except in non-WSA lands with wilderness characteristics since the routes would be closed. If use is such that undue environmental impacts are taking place, BLM would close and rehabilitate damaged areas.
General Policy for Issuance and Management of Special Recreation Permits (SRPs).				
MANAGEMENT COMMON TO ALL ALTERNATIVES There would be no competitive mechanized or motorized events in WSAs while these areas are managed under the IMP. Under all alternatives, SRPs would be issued as a discretionary action as a means to help meet management objectives, control visitor use, protect recreational and natural resources, and provide for the health and safety of visitors. All SRPs would contain standard stipulations appropriate for the type of activity and may include additional stipulations (see Appendix E: Recreation) necessary to protect lands or resources, reduce user conflicts, or minimize health and safety concerns. **MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES** SRPs would be used to manage different types of recreation associated with commercial uses, competitive events, organized groups, vending, and special areas. These recreation uses can include, for example, large group events, river guide services, and commercial recreation activities. BLM would follow the 43 CFR 2930, October 1, 2004, the National Guidelines on Cost Recovery (Federal Register, Volume 67, October 1, 2002), and the Utah Special Recreation Permit Cost Recovery Policy (Utah IM 2004-036). In accordance with BLM's Priorities for Recreation and Visitor Services Work Plan (May 2003, as amended), commercial SRPs would also be issued as a mechanism to provide a fair return for the commercial use of public lands.				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Commercial use of any kind requires a permit.	**Criteria for requiring an SRP:** • Any commercial use. • Day use organized group or event of more than 25 people in ERMA. • Overnight with group or event of more than 15 people in ERMA. • More than 15 motorized vehicles/OHVs on designated routes (does not include County B Roads or state and federal highways). • More than 15 non-motorized mechanized vehicles on designated routes (does not include County B Roads or state and federal highways). • A group size of more than 10 riding and/or pack animals. • Car camping with more than 10 vehicles or more than 50 people. • Activities or events with the potential to conflict with existing resource management guidelines/prescriptions. • Events with the potential for user conflict. • Events that could impact public health and safety. • Permitted use would only be allowed on designated routes consistent with the travel plan.	**Criteria for requiring an SRP:** • Any commercial use. • Non-mechanized/non-stock day use organized group or event of more than 50 people in ERMA. • Non-mechanized/non-stock overnight with group or event of more than 25 people in ERMA. • More than 25 motorized vehicles/OHVs on designated routes (does not include County B Roads or state and federal highways). • More than 25 non-motorized mechanized vehicles on designated routes (does not include County B Roads or state and federal highways). • A group size of more than 15 riding and/or pack animals. • Car camping with more than 15 vehicles or more than 50 people. • Activities or events with the potential to conflict with existing resource management guidelines/prescriptions. • Events with the potential for user conflict. • Events that could impact public health and safety. • Permitted use would only be allowed on designated routes consistent with the travel plan.	**Criteria for requiring an SRP:** • Any commercial use. • Non-mechanized/non-stock day use organized group or event of more than 75 people in ERMA. • Non-mechanized/non-stock overnight with group or event of more than 50 people in ERMA. • No limits on motorized vehicles/OHVs on designated routes (does not include County B Roads or state and federal highways). • No limits on non-motorized mechanized vehicles on designated routes (does not include County B Roads or state and federal highways). • A group size of more than 20 riding and/or pack animals. • Car camping with more than 20 vehicles groups or more than 50 people. • Activities or events with the potential to conflict with existing resource management guidelines/prescriptions. • Events with the potential for user conflict. • Events that could impact public health and safety. • Permitted use would only be allowed on designated routes consistent with the travel plan.	**Criteria for requiring an SRP:** • Any commercial use. • Day use organized group or event of more than 25 people in ERMA. • Overnight with group or event of more than 15 people in ERMA. • More than 15 motorized vehicles/OHVs on designated routes (does not include County B Roads or state and federal highways). • More than 15 non-motorized mechanized vehicles on designated routes (does not include County B Roads or state and federal highways). • A group size of more than 10 riding and/or pack animals. • Car camping with more than 10 vehicles or more than 50 people. • Activities or events with the potential to conflict with existing resource management guidelines/prescriptions. • Events with the potential for user conflict. • Events that could impact public health and safety. • Permitted use would only be allowed on designated routes consistent with the travel plan.
Commercial use of any kind requires a permit.	**Commercial:** • Commercial motorized/mechanized events/tours allowed on designated routes except in WSAs. • Commercial use permits authorized in conjunction with organized events or when the use supports resource protection and management. • Arch Canyon closed to OHV use. • No commercial motorized/mechanized use in Arch Canyon. • No commercial motorized/mechanized events/tours in crucial bighorn sheep lambing and rutting areas from April 1 to July 15 (lambing) and from October	**Commercial**: Managed the same as Alternative B except for the following: • OHV use in Arch Canyon limited to the designated route to the end of the State Section (T37S R20E Section 16) year-round. The canyon would be closed year-round from west boundary of the State Section to the end of the route at the National Forest boundary. • No commercial motorized/mechanized events/tours in crucial bighorn sheep lambing and rutting areas from April 1 to June 15 (lambing) and from October	**Commercial:** • Commercial motorized/mechanized events/tours allowed on designated routes. • Commercial use permits authorized to enhance recreational experiences and provide recreational opportunities to the public. • OHV use in Arch Canyon limited to designated route year-round. • No commercial motorized/mechanized events/tours in crucial bighorn sheep lambing and rutting areas from April 15 to May 15 (lambing), and from November 1 through December 15 (rutting), unless	**Commercial:** • There would be no competitive mechanized or motorized events in lands with wilderness characteristics. • Commercial motorized/mechanized events/tours allowed on designated routes except in WSAs. • Commercial use permits authorized in conjunction with organized events or when the use supports resource protection and management. • Arch Canyon closed to OHV use. • No commercial motorized/mechanized use in Arch Canyon.

Table 2.1. Summary Table of Alternatives

	15 through December 31 (rutting), unless it can be shown that the animals are not present in a specific project location or the activity can be conducted so the animals are not adversely impacted. • No commercial motorized/mechanized events/tours in crucial antelope habitat restrictions April 15 through June 30. • No commercial motorized/mechanized events/tours in crucial deer and elk winter range November 1 through May 15. • Group size for commercial motorized events/tours limited to 2 groups of 12 vehicles per route per day. • Special OHV events limited to 350 total vehicles and approved OHV event routes. • Balloon Festival limited to 35 balloons with their associated support vehicles. • Commercial hiking tours in Comb Wash and Butler Wash limited to 10 individuals. A permit system would be established for commercial day and overnight use. • Commercial camping limited to designated areas. • Commercial hiking to cultural sites limited to designated trails and human waste must be packed out. • Ropes and other climbing aides not allowed to access cultural sites. • Commercial guides using dogs to hunt/pursue mountain lion and black bears would not operate in areas where dogs are prohibited. • No commercial motorized/mechanized use in Cedar Mesa ACEC.	15 through December 15 (rutting), unless it can be shown that the animals are not present in a specific project location or the activity can be conducted so the animals are not adversely impacted. • No commercial motorized/mechanized events/tours allowed in crucial antelope habitat restrictions May 1 through June 15. • No commercial motorized/mechanized events/tours allowed in crucial deer and elk winter range November 15 through April 15. • Special OHV events limited to 350 total vehicles and approved OHV event routes.	it can be shown that the animals are not present in a specific project location or the activity can be conducted so the animals are not adversely impacted. • No commercial motorized/mechanized events/tours allowed in crucial antelope habitat restrictions May 15 through June 15. • No commercial motorized/mechanized events/tours allowed in crucial deer and elk winter range December 15 through March 31. • Group size for commercial motorized events/tours limited to 2 groups of 25 vehicles per route per day. • Special OHV events limited to 350 total vehicles and approved OHV event routes. • Balloon Festival limited to 35 balloons with their associated support vehicles.	• No commercial motorized/mechanized events/tours in crucial bighorn sheep lambing and rutting areas from April 1 to July 15 (lambing) and from October 15 through December 31 (rutting), unless it can be shown that the animals are not present in a specific project location or the activity can be conducted so the animals are not adversely impacted. • No commercial motorized/mechanized events/tours in crucial antelope habitat restrictions April 15 through June 30. • No commercial motorized/mechanized events/tours in crucial deer and elk winter range November 1 through May 15. • Group size for commercial motorized events/tours limited to 2 groups of 12 vehicles per route per day. • Special OHV events limited to 350 total vehicles and approved OHV event routes. • Balloon Festival limited to 35 balloons with their associated support vehicles. • Commercial hiking tours in Comb Wash and Butler Wash limited to 10 individuals. A permit system would be established for commercial day and overnight use. • Commercial camping limited to designated areas. • Commercial hiking to cultural sites limited to designated trails, and human waste must be packed out. • Ropes and other climbing aides not allowed to access cultural sites. • Commercial guides using dogs to hunt/pursue mountain lion and black bears would not operate in areas where dogs are prohibited. • No commercial motorized/mechanized use in Cedar Mesa ACEC.
Competitive Events				
MANAGEMENT COMMON TO ALL ALTERNATIVES Motorized/mechanized competitive events would be authorized consistent with OHV designations. Motorized and mechanized competitive events would not be permitted in WSAs.				
RIPARIAN RESOURCES				
GOALS Manage riparian resources for desired future conditions, ensuring ecological diversity, stability, and sustainability, including the desired mix of vegetation types, structural stages, and landscape/riparian/watershed function and provide for native and special status plant, fish, and wildlife habitats. Manage riparian areas for properly functioning condition (PFC) and ensure stream channel morphology and functions are appropriate to the local soil type, climate, and landform. Avoid or minimize the destruction, loss or degradation of riparian, wetland and associated floodplains, and preserve and enhance natural and beneficial values. Public lands would be managed in accordance with laws, executive orders, and regulations on floodplain and wetland areas to reduce resource loss from floods and erosion. BLM would take appropriate actions to maintain water quality in streams within SJRA to meet state and federal water quality standards, including designated beneficial uses and anti-degradation requirements.				
MANAGEMENT COMMON TO ALL ALTERNATIVES Oil and gas leasing would be NSO in riparian areas. BLM would follow Utah's Standards for Rangeland Health and Guidelines for Grazing and Recreation Management (BLM 1997) to achieve riparian PFC. No new surface-disturbing activities would be allowed within active floodplains or within 100 meters of riparian areas. BLM guidelines would be followed as appropriate for managing riparian areas (See Technical Reference 1737-6: Riparian Area Management as amended).				

Table 2.1. Summary Table of Alternatives

All floodplains and riparian/wetlands would be managed in accordance with Executive Orders 11988 and 11990, sections 303 and 404 of the Clean Water Act, and the Endangered Species Act.

Floodplains and riparian/aquatic areas would be:

- Subject to fire suppression to protect riparian habitat.
- Excluded from private and/or commercial use of woodland products except for Native American traditional purposes as determined on site-specific basis; limited on-site collection of dead wood for campfires would be allowed as per Woodlands section.
- Available for habitat, range, and watershed improvements and vegetation treatments described in 1991 Vegetation EIS (as amended).
- Excluded from surface disturbance by mechanized or motorized equipment (except as allowed above) and from structural development (unless there is no practical alternative or the development would enhance riparian/aquatic values).

Unnecessary multiple social trails in riparian/floodplain areas would be minimized. Social trails in Road Canyon, Fish Creek, and Mule Canyon would be closed to protect riparian resources.

BLM would follow/implement the SWFL Recovery Plan as appropriate.

Monitoring and management strategies and restrictions would be developed as necessary to meet or maintain PFC.

Cottonwood and willow harvest would be allowed for Native American ceremonial uses only. Restrictions on harvest would be implemented as necessary to achieve or maintain PFC. This would be administered through a permit system.

No camping would be allowed within 200 feet of isolated springs or water sources.

Pipeline Crossings

Pipeline crossings of perennial, intermittent, and ephemeral stream channels should be constructed to withstand 100-year floods to prevent breakage and subsequent accidental contamination of runoff during high-flow events. Surface crossings must be constructed high enough to remain above stream flows at each crossing, and subsurface crossings must be buried deep enough to remain undisturbed by scour throughout passage of the peak flow. Hydraulic analysis would be completed in the design phase by the project proponent to eliminate potential environmental degradation associated with pipeline breaks at stream crossings to avoid repeated maintenance of such crossings. Specific recommendations regarding surface and subsurface crossings are found in Guidance for Pipeline Crossings (see Appendix F).

Alternative A (No Action)	Alternative B	Alternative C (Preferred)	Alternative D	Alternative E
BLM would act to avoid degradation of stream banks or aquatic habitats and loss of riparian vegetation. Special conditions found in the 1991 San Juan RMP (BLM 1991a, page 98) for floodplains and riparian/aquatic areas would be implemented.	Close Harts Canyon from private land to Yancy's Fence to OHV and mechanized use. Close routes in other selected riparian areas considered Functioning at Risk if site-specific analysis determines that OHV use is contributing to riparian degradation. Restrict Moki Canyon, Lake Canyon, Harts Canyon, and Indian Creek from Kelly Ranch vicinity to Forest Service to livestock trailing only, not grazing. Develop seasonal restrictions, closures, and/or forage utilization limits on grazing in riparian areas considered Functioning at Risk. Temporarily close riparian areas considered Functioning at Risk to dispersed motorized camping until PFC is restored.	Same as Alternative B.	Same as Alternative A.	Same as Alternative B except non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.

SOIL AND WATER RESOURCES

GOALS

Manage soils and water resources to maintain watershed health, thereby insuring ecological diversity and sustainability.

Provide for favorable conditions of water flow (quality, quantity, and timing), and maintain stable and efficient stream channels as required and provide for fish and wildlife habitat, recreation, and livestock.

MANAGEMENT COMMON TO ALL ALTERNATIVES

Manage all floodplains and riparian/wetlands in accordance with Executive Orders 11988 and 11990, sections 303 and 404 of the Clean Water Act, and the Endangered Species Act.

Maintain satisfactory watershed conditions as indicated by maintenance of riparian PFC and Standards for Rangeland Health and Guidelines for Grazing Management (BLM 1991a) and Guidelines for Grazing and Standards for Public Health and Guidelines for Recreation Management for BLM Lands in Utah (Appendix E).

Manage public lands consistent with the Colorado River Salinity Control Act.

Comply with Utah's state water quality standards.

Collaborate with San Juan County, the State of Utah, tribal governments, and local municipalities on management of municipal watersheds to meet local needs.

Maintain or improve soil quality and long-term soil productivity through the implementation of Standards for Rangeland Health and Guidelines for Grazing Management (BLM 1997) and other soil protection measures.

Manage uses to minimize and mitigate damage to soils.

Maintain and/or restore overall watershed health and reduce erosion, stream sedimentation, and salinization of water.

Watershed Health

Prioritize the watersheds identified on the 303d impaired lists.

Modify the BMPs and vegetation management as appropriate to meet water quality standards and maintain watershed function (Montezuma Creek, Indian Creek [Forest Service boundary to Newspaper Rock], Johnson Creek [and tributaries from confluence with Recapture Creek to headwaters], and Recapture Reservoir).

Assess watershed function using Utah's Standards for Rangeland Health, riparian PFC, and state water quality standards.

Table 2.1. Summary Table of Alternatives

Where Utah's Standards for Rangeland Health are not met due to the impairment of biological soil crusts, apply guidelines from Biological Soil Crusts: Ecology and Management (BLM 2001b, as revised), if consistent with the management decisions of this plan.

Reduce tamarisk where appropriate using allowable vegetation treatments (refer to vegetation section for treatment acreages).

Sensitive Soils

Any proposed activities that would be located in sensitive soils (e.g., hydric, saline, gypsiferous, or highly erodible soils, Maps 34-40) would be subject to site-specific NEPA and would incorporate BMPs and other mitigation measures to minimize soil erosion and maintain soil stability.

Alternative A (No Action)	Alternative B	Alternative C (Preferred)	Alternative D	Alternative E
	If surface-disturbing activities cannot be avoided on slopes between 21 and 40%, an erosion control plan would be required. The plan must be approved by BLM prior to construction and maintenance and include the following: • An erosion control strategy • BLM accepted and/or approved survey and design	If surface-disturbing activities cannot be avoided on slopes between 21 and 40%, an erosion control plan would be required. The plan must be approved by BLM prior to construction and maintenance and include the following: • An erosion control strategy • BLM-accepted and/or approved survey and design For slopes greater than 40%, no surface disturbance would be allowed unless it is determined that it would cause undue or unnecessary degradation to pursue other placement alternatives. An erosion control plan would be required.	If surface-disturbing activities cannot be avoided on slopes greater than 40%, a plan would be required. The plan must be approved by BLM prior to construction and maintenance, and include the following: • An erosion control strategy • BLM accepted and/or approved survey and design	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.

SPECIAL DESIGNATIONS – ACECS

GOALS

Designate, modify, and manage areas as ACECs where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, other natural systems or processes, or to protect life and safety from natural hazards.

Designate Research Natural Areas and Outstanding Natural Areas as types of ACECs using the ACEC designation process.

MANAGEMENT COMMON TO ALL ALTERNATIVES

In those areas where any of the following ACECs overlap with WSAs, the WSA management prescriptions, as stipulated in the IMP, would take precedence.

Within the area managed by the Monticello PA, there is an area totaling 2,155 acres contiguous to the Butler Wash WSA) that was studied as a boundary variation during the wilderness review mandated by Congress in FLPMA Sections 603(a) and (b). These lands were addressed in the Utah BLM Statewide Wilderness Final EIS (November, 1990) and were recommended for congressional wilderness designation in the Utah Statewide Wilderness Study Reports (October, 1991). This recommendation was forwarded by the President of the United States to Congress in 1993. The lands would continue to be managed in a manner that does not impair their suitability for congressional designation in accordance with FLPMA Section 603(c). Subject to valid existing rights, the only case-by-case actions that would be considered would be those where it is determined that wilderness suitability would not be adversely impacted.

MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES

A cultural RMP consistent with the goals and objectives of this RMP would be written for Alkali Ridge, Cedar Mesa, Hovenweep, and Shay Canyon ACECs and would not require a plan amendment to the RMP.

Alkali Ridge ACEC

Alternative A (No Action)	Alternative B	Alternative C (Preferred)	Alternative D	Alternative E
Alkali Ridge ACEC (39,202 acres): Would be designated as a Cultural ACEC. It contains a National Historic Landmark (2,340 acres) and would be managed with the following management prescriptions: • Where riparian areas overlap this ACEC, the special conditions for floodplain and riparian/aquatic areas would take precedence. • Requirements of appropriate regulations would be met. • All cultural properties eligible for the NRHP, would be surrounded by an avoidance area sufficient to allow permanent protection. • If cultural resources or their avoidance areas cannot be avoided, appropriate mitigation would be applied, ranging from limited testing to extensive excavation. • In any given situation, mitigation would be designed to fit the specific circumstances and reviewed by the SHPO and the Advisory Council	**Alkali Ridge ACEC (39,196 acres):** Would be the same as Alternative A except for the following changes in management prescriptions: • Unavailable for private and/or commercial use of woodland products except for limited on-site collection of dead wood for campfires. • Watershed improvements allowed. • Livestock use may be restricted if cultural resources are being impacted. • No surface-disturbing vegetation treatments. Any treatment must avoid cultural sites by sufficient margin as to have no impact. • Managed as VRM Class IV.	**Alkali Ridge ACEC (39,196 acres):** Would be the same as Alternative A except for the following changes in management prescriptions: • Available for woodland harvest, limited to designated routes. Off-road travel would only be allowed in chained areas. If woodland product use is impacting cultural resources, woodland product use may be confined to specific areas within Alkali Ridge. • Available for watershed improvements. • Livestock may be restricted if cultural resources are being impacted. • Vegetation treatments would avoid cultural sites wherever possible to prevent impacts. Access routes used for vegetation treatments would be reclaimed to prevent future use. Non–surface disturbing treatments would be preferred. • Managed as VRM Class IV.	Alkali Ridge would not be designated as an ACEC. The area would be managed with the following prescriptions: • Available for woodland harvest, limited to designated routes. • Available for watershed improvements. • Livestock use would conform to Rangeland Health Standards. • Vegetative treatments would avoid eligible cultural sites and NHL. • Managed as VRM Class IV. • Available for mineral leasing (Category 1). • Available for geophysical work. • Available for the disposal of mineral materials. • Available for locatable mineral entry with an approved plan of operations. • Retained in public ownership and not classified, segregated or withdrawn from entry. • Subject to conditional fire suppression.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.

Table 2.1. Summary Table of Alternatives

on Historic Preservation. • Available for mineral leasing (Category 1). • Available for geophysical work. • Available for the disposal of mineral materials. • Available for locatable mineral entry with an approved plan of operations. • Retained in public ownership and not classified, segregated, or withdrawn from entry. • Available for private and commercial use of woodland products. • Available for livestock use. • Available for land treatments or other range improvements. • Subject to conditional fire suppression. • OHV use limited to existing roads and trails. • Managed as VRM Class III. • Campfires allowed. • Available for wildlife habitat improvement. • Surface disturbance limited to what can be successfully established within 5 years after project completion.			• OHV use limited to existing roads and trails. • Campfires allowed. • Available for wildlife habitat improvement. • Surface disturbance limited to what can be successfully established within 5 years after project completion.	
Alkali Ridge National Historic Landmark (Contained within the Alkali Ridge ACEC)				
Management Common to All Action Alternatives A Cultural Resource Management Plan (CRMP) would be written for this NHL.				
National Historic Landmark (2,340 acres): Management would be the same as the management for the Alkali Ridge ACEC above except: All cultural resources would be avoided by 100 feet.	Management prescriptions for the Alkali Ridge NHL 2,146 acres would be: • Available for oil and gas leasing subject NSO. • All mechanized/motorized traffic limited to designated routes. • Campfires not allowed. • Unavailable for private and/or commercial use of woodland products including on-site collection of dead wood for campfires. • Available for watershed improvements. • Open to livestock use with restrictions if cultural resources become impacted. • No surface disturbing vegetation treatments. Any treatment must avoid cultural sites by sufficient margin as to have no adverse impact. • Unavailable for geophysical work. • Unavailable for disposal of mineral materials. • Recommended for withdrawal from locatable mineral entry. • Surface disturbance allowed for emergency fire suppression. • Recreation use limited if cultural resources become impacted. • Climbing aids such as ropes not allowed for access into cultural sites/ruins.	Management Prescriptions for the Alkali Ridge NHL 2,146 acres would be the same as for Alternative B except for: • Appropriate Management Response to fire. • Available for geophysical exploration that meets the definition of "casual use" as defined 43 CFR 3150.	Management Prescriptions for the Alkali Ridge National Historic Landmark (NHL) 2,146 acres would be the same as Alternative C.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.

Table 2.1. Summary Table of Alternatives

Bridger Jack Mesa ACEC (Mesa Top Only)				
MANAGEMENT COMMON TO ALL ALTERNATIVES Bridger Jack Mesa ACEC lies entirely within a WSA. The special management prescriptions below apply to the proposed Bridger Jack Mesa ACEC for protection of near-relict vegetation.				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Bridger Jack Mesa ACEC (6,260 acres): Designated as an ACEC for Range Management Program/Near-relict Vegetation, and would be managed with the following management prescriptions: • Available for mineral leasing subject to NSO on mesa top; available for geophysical work. • Unavailable for the disposal of mineral materials. • Available for locatable mineral entry with approved plan of operations, subject to stipulations precluding surface use of the mesa top, insofar as possible. • Retained in public ownership and not classified, segregated, or withdrawn from entry. • Excluded from livestock grazing, including grazing by saddle stock and pack animals allowed for access. • Excluded from land treatments or other improvements, except for test plots and facilities necessary for study of the near-relict plant communities. • Closed to OHV use. • Subject to conditional fire suppression. • Managed to limit recreation use if vegetation resources are being damaged. • Semi-primitive non-motorized (SPNM) ROS class. • Excluded from private or commercial use of woodland products, except for limited on-site collection of dead wood for campfires. • Excluded from wildlife habitat improvements. • Excluded from watershed control structures. • Surface disturbance limited to what can be successfully established within 5 years after project completion. • Excluded from surface disturbance by mechanized or motorized equipment, except helicopter access for scientific study and heliportable equipment, insofar as legally possible. • Excluded from improvements for wildlife habitat, watershed, or vegetative treatments.	**Bridger Jack Mesa ACEC (6,225 acres):** Prescriptions are the same as Alternative A except for the boundary change.	Bridger Jack Mesa would not be managed as an ACEC. Management prescriptions for this area would be the same as the surrounding lands except for the following: • Unavailable for livestock grazing, including grazing by saddle stock and pack animals allowed for access. • Unavailable for private and/or commercial use of woodland products except for the limited on-site collection of dead wood for campfires.	Same as Alternative C.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.

Table 2.1. Summary Table of Alternatives

Butler Wash North ACEC				
MANAGEMENT COMMON TO ALL ALTERNATIVES Butler Wash North ACEC lies within a portion of the Butler Wash WSA. The special management prescriptions below apply to the proposed Butler Wash North ACEC for protection of scenic values.				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Butler Wash ACEC (17,464 acres) is designated as an ACEC for scenic values and is managed with the following management prescriptions: • Managed under the special conditions developed for ROS-P class areas. • Available for mineral leasing subject to NSO; however, the area manager would grant an exception to the NSO stipulation in the event it is determined through an EA, or EIS if necessary, with the adoption and use of appropriate mitigation measures, that the project would meet visual quality standards for the area. • Available for geophysical work. • Unavailable for disposal of mineral materials. • Available for mineral entry with an approved plan of operations. • Retained in public ownership and not classified, segregated, or withdrawn from entry. • Excluded from private and commercial use of woodland products, except for limited on-site collection of dead wood for campfires. • Available for livestock use. • Closed to OHV use. • Managed to limit recreation use if scenic values are being damaged. • Managed as VRM Class I.	**Butler Wash North (17,365 acres)** would be designated as a Scenic ACEC and would be managed with the following prescriptions: • Managed as VRM Class I. • Available for mineral leasing subject to NSO; however, the area manager would grant an exception to the NSO stipulation in the event it is determined through an EA, or EIS if necessary, with the adoption and use of appropriate mitigation measures, that the project would meet visual quality standards for the area. • Unavailable for disposal of mineral materials. • Retained in public ownership and withdrawn from entry. • Closed to private and/or commercial use of woodland products, except for limited on-site collection of dead wood. • Available for livestock use but may be limited if cultural resources are being impacted. • Managed to limit recreation use if scenic values are being damaged. • BLM would seek to acquire state inholdings in this ACEC. • OHV/mechanized use limited to designated routes.	Butler Wash North area would not be designated as an ACEC. Management prescriptions for this area would be the same as the surrounding lands except for the following: • Retained in public ownership. • Unavailable for private and/or commercial use of woodland products, with the exception of the limited on-site collection of wood for campfires. • Available for livestock use but may be limited if cultural resources are impacted. • OHV/mechanized use limited to designated routes.	Same as Alternative C.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.

Cedar Mesa ACEC				
Note: In the 1991 San Juan RMP, three ACECs (Dark Canyon, Indian Creek, and Cedar Mesa) were described as protecting values for Recreation/Visual (VRM) because these two programs were combined and managed under the Recreation program. Since that time, the two programs have been separated and are now managed under their own resource management program. Scenic is considered a relevant value under ACEC evaluation processes, however, Recreation is not. Therefore any existing ACECs that are brought forward in this plan will not include Recreation as a value. Management for recreational values would be managed as an SRMA under the Recreation program.				
MANAGEMENT COMMON TO ALL ALTERNATIVES Portions of the Cedar Mesa ACEC lie within 8 WSAs. The special management prescriptions below apply to the proposed Cedar Mesa ACEC for protection of cultural values through a range of alternatives for analysis.				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Cedar Mesa ACEC (295,336 acres) is designated as an ACEC for cultural and scenic values.Recreation/ Primitive Area/ Natural Area values would be maintained and would continue to be managed under the Cultural CRMP and Recreation/Scenic programs with the following management prescriptions: • Where riparian areas overlap Cedar Mesa ACEC, the special conditions for floodplains and riparian/aquatic areas would take precedence. • The ROS special conditions include both P and SPNM classes apply, and would be managed for these classes. ROS P-class areas would be managed	**Cedar Mesa ACEC (306,742 acres)** would continue to be managed as a Cultural-ACEC with the following prescriptions: • Available for livestock use with special conditions to protect at-risk cultural resources. • Available for watershed, range, habitat improvements and vegetation treatments. • Unavailable for private and/or commercial use of woodland products except for limited on-site collection of dead wood for campfires. • Campfires limited to mesa tops, would be closed if there are impacts to cultural sites.	Cedar Mesa area would not be designated as a Cultural ACEC, but it would be managed as a Cultural Special Recreation Management (C-SRMA) area (375,734 acres). The WSAs (209,619 acres) would be managed according to the IMP. Areas outside of the WSAs (166,115 acres) would be managed the same as Alternative B, except for the following: • Available for commercial and/or private use of woodland products, including on-site collection of dead wood for campfires (on mesa tops only, canyons closed). • Open to dispersed camping except in areas where	Same as Alternative C.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.

Table 2.1. Summary Table of Alternatives

as NSO. • If cultural resources or their avoidance areas cannot be avoided, appropriate mitigation would be applied, ranging from limited testing to extensive excavation. • In any given case, mitigation would be designed to fit the specific circumstances and reviewed by the SHPO and the Advisory Council on Historic Preservation. The Cedar Mesa Management Plan developed for the ACEC would guide site protection, data recovery, and all other necessary cultural management activities. • Revegetation for surface disturbance would be limited to what can be successfully established within 5 years after project completion. • Available for mineral leasing (Category 1). • Surface use limited by special conditions. • Available for geophysical work. • Available for disposal of mineral materials. • Available for mineral entry with an approved plan of operations. • Available for livestock use. • Available for land treatments or other range improvements. • Available for wildlife habitat improvements. • Subject to conditional fire suppression with motorized suppression methods used only if necessary to protect life or property. • Excluded from surface disturbance by mechanized or motorized equipment. • OHV use limited to designated roads/trails. • Available for private and commercial use of woodland products in designated areas with designated access, except that on-site collection of dead fuelwood for campfires would be allowed throughout the area. <u>Grand Gulch Special Emphasis Area</u> contained within the Cedar Mesa ACEC would be managed as: • Closed to mineral leasing (Category 4). • Not available for geophysical work unavailable for disposal of mineral materials. • Retained in public ownership and classified as segregated from entry (a Secretarial withdrawal would be requested). • Excluded from private and commercial use of woodland products, except for limited onsite collection of dead wood for campfires. • Available for livestock use, except Grand Gulch itself, below Kane Gulch fence to the confluence with the San Juan River, 11,200 acres. • Designated as closed to OHV use; • managed to limit recreation use if cultural resources or scenic values are being damaged. • Managed as VRM class I.	• Closed to dispersed camping. • Designated parking areas adjacent to designated routes. • Limited number of recreation permits issued for day hikes and overnight camping as necessary to prevent cultural site damage from over-visitation. • Overnight campers must pack out their human waste. • Managed as VRM Class III (except for WSAs within the boundary of the ACEC). <u>Grand Gulch Special Emphasis Area:</u> • Same as Alternative A. The Scenic Highway Corridor ACEC would not be designated under this alternative.	cultural resources are at risk. • There would be no requirement to pack out human waste. <u>Grand Gulch Special Emphasis Area</u>: • Same as Alternative A. The Scenic Highway Corridor ACEC would not be designated under this alternative.		

Table 2.1. Summary Table of Alternatives

Dark Canyon ACEC

Note: In the 1991 San Juan RMP, three ACECs (Dark Canyon, Indian Creek, and Cedar Mesa) were described as protecting values for Recreation/Visual (VRM) because these two programs were combined and managed under the Recreation program. Since that time, the two programs have been separated and are now managed under their own RMP. Scenic is considered a relevant value under ACEC evaluation processes, however, Recreation is not. Therefore any existing ACECs that are brought forward in this plan will not include Recreation as a value. Management for recreational values would be handled under the Recreation program, specifically SRMAs.

MANAGEMENT COMMON TO ALL ALTERNATIVES

Dark Canyon ACEC lies within a portion of the Dark Canyon WSA. WSAs are managed under the IMP.

The special management prescriptions below apply to the proposed Dark Canyon ACEC for protection of scenic and wildlife values through a range of alternatives for analysis.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Dark Canyon ACEC (61,660 acres) is designated as an ACEC for -Recreation/Natural Area and Visual/VRM values, would be maintained and would continue to be managed with the following management prescriptions: • Unavailable for mineral leasing. • Unavailable for geophysical work. • Unavailable for disposal of mineral materials. • Retained in public ownership and classified as segregated from entry (Secretarial withdrawal would be requested). • Excluded from private and commercial use of woodland products except for limited on-site collection of dead wood for campfires. • Unavailable for livestock use except Fable Valley, where livestock trailing and emergency grazing (drought or severe winter) would be allowed. • Closed to OHV use. • Managed as VRM Class I with projects that meet these visual standards allowed. • Managed to limit recreation use if cultural resources or scenic values are being damaged. • Subject to conditional fire suppression, with motorized suppression methods used only if necessary to protect life or property.	**Dark Canyon (61,660 acres)** would be designated as a Scenic and Wildlife ACEC, and would be managed with the following prescriptions: • Unavailable for oil and gas leasing. • Unavailable for geophysical work. • Unavailable for disposal of mineral materials. • Retained in public ownership and recommended for withdrawal from mineral entry. • Unavailable for private and/or commercial use of woodland products except for limited on-site collection of dead wood for campfires on mesa tops. • Campfires limited to mesa top with fire pan (no campfires in canyons). • Human waste to be packed out. • Unavailable for livestock use except Fable Valley, where livestock trailing and emergency grazing (severe winter) would be allowed. • Closed to OHV use. • Managed as VRM Class I with projects that meet these visual standards allowed. • Managed to limit recreation use if wildlife habitat or scenic values are being damaged. • Subject to conditional fire suppression, with motorized suppression methods used only if necessary to protect life or property. • Improvements conditionally allowed for wildlife habitat, watershed, and vegetative treatments that meet VRM Class I management.	Dark Canyon would not be managed as an ACEC. Dark Canyon WSA would be managed according to the IMP. Areas outside of the WSA would be managed with prescriptions similar to the surrounding BLM lands, which include but are not limited to the following prescriptions: • Campfires limited to mesa top with fire pan (no campfires allowed in canyon). • Private and/or commercial use of woodland products limited to areas identified in woodlands section. Limited on-site collection of dead wood for campfires is allowed on mesa tops. • Unavailable for livestock use except Fable Valley, where livestock trailing and emergency grazing (severe winter) would be allowed. • Closed to OHV/mechanized use. • Managed to limit recreation use if wildlife habitat or scenic values are being damaged. • Subject to appropriate fire management response with habitat-disturbing suppression methods used only if necessary to protect life or property. • A Secretarial withdrawal for mineral entry would not be requested.	Same as Alternative C.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.

Hovenweep ACEC

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Hovenweep ACEC (1,798 acres) would continue to be managed as an ACEC for Cultural and Habitat Management values with the following management prescriptions: **Visual Protective Zone (880 acres):** • Available for mineral leasing with NSO. • Available for livestock use. • Excluded from watershed and grazing (vegetative) treatment improvement. **Cajon Pond (Habitat):** • Available for mineral leasing and other surface uses with stipulations to prevent surface occupancy or surface disturbance during the shorebird and waterfowl courtship and nesting season of March	**Hovenweep ACEC** would continue to be managed as an ACEC with the addition of 620+ acres contiguous with existing ACEC and east of Hovenweep National Monument, for cultural values. **Total acres 2,439**. • Cultural properties eligible for the National Register of Historic Places would be avoided as necessary to provide permanent protection. This would be implemented on a case-by-case basis. • Unavailable for disposal of mineral materials. • Available for mineral entry with an approved plan of operation. • Available for livestock use but may be limited if cultural resources are impacted. • No new routes designated in this ACEC.	Same as Alternative A except for the following: • The boundary would be expanded to include the addition of 620+ acres contiguous with existing ACEC and east of Hovenweep National Monument, for cultural values. • Available for watershed improvements and vegetative treatments as long as cultural sites are not impacted. Emphasis would be on non-surface disturbing vegetation treatments. • Available for mineral leasing with standard stipulations. • Managed as VRM Class III.	Hovenweep would not be designated as an ACEC. (Hovenweep National Monument would continue to be managed by the NPS.) Management prescriptions for this area would be the same as the surrounding lands and include but are not limited to the following prescriptions: • Available for watershed improvements and vegetative treatments as long as cultural sites are not impacted. Emphasis would be on non-surface disturbing vegetation treatments. • Managed as VRM Class IV. • Available for livestock use. • Available for campfire use. • Available for mineral leasing, mineral entry, and disposal of mineral materials.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.

Table 2.1. Summary Table of Alternatives

1–June 30 (Category 2). Excluded from use within the fenced portion (about 1 acre). **General Area Exclusive of Special Emphasis Zones:** • Where riparian areas overlap Hovenweep ACEC, the special conditions for floodplains and riparian/aquatic areas would take precedence. • Within Hovenweep ACEC, cultural properties eligible for the NRHP would be avoided by 100 feet. • Cultural properties eligible for the NRHP would be surrounded by an avoidance area sufficient to allow permanent protection. • If cultural resources or their avoidance areas cannot be avoided, appropriate mitigation would be applied, ranging from limited testing to extensive excavation. • In any given case, mitigation would be designed to fit the specific circumstances and reviewed by the SHPO and the Advisory Council on Historic Preservation. The Cedar Mesa Management Plan developed for the ACEC would guide site protection, data recovery, and all other necessary cultural management activities. • Available for mineral leasing (Category 2). • Available for geophysical work. • Unavailable for disposal of mineral materials. • Available for mineral entry with an approved plan of operation. • Available for livestock use. • Subject to conditional fire suppression. • OHV use limited to designated roads/trails in entire area. • Excluded from private or commercial use of woodland products, except for limited on-site collection of dead wood for campfires. • Open for improvement in habitat, watershed and vegetation treatments. • Managed as VRM Class III.	• No surface-disturbing habitat, watershed, or vegetation treatments. Any treatment must avoid cultural sites by sufficient margin as to avoid adverse impact. • Available for campfire use. • Unavailable for private and/or commercial use of woodland products, except for limited on-site collection of dead wood for campfires. • Managed as VRM Class III. • Available for mineral leasing with standard stipulations.			
Indian Creek ACEC **Note:** In the 1991 San Juan RMP, three ACECs (Dark Canyon, Indian Creek, and Cedar Mesa) were described as protecting values for Recreation / Visual (VRM) because these two programs were combined and managed under the Recreation program. Since that time, the two programs have been separated and are now managed under their own resource management program. Scenic is considered a relevant value under ACEC evaluation processes, however, recreation is not. Therefore any existing ACECs that are brought forward in this plan will not include recreation as a value. Management for recreational values would be handled under the recreation program, specifically SRMAs.				
MANAGEMENT COMMON TO ALL ALTERNATIVES Portions of the Indian Creek ACEC lie within portions of the Indian Creek WSA in Alternative B. The special management prescriptions below apply to the proposed Indian Creek ACEC for protection of scenic values through a range of alternatives for analysis.				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Indian Creek ACEC (8,510 acres), which covers an area adjacent to Canyonlands National Park, falls within Canyon Basins SRMA. It would be designated under program 4333, Recreation/VRM, and managed to maintain scenic quality with the following prescriptions:	**Indian Creek (8,510 acres)** would be designated as a Scenic ACEC and would be managed with the following prescriptions: Same as Alternative A except:	Same as Alternative B except the ACEC would be 3,908 acres (outside of the WSA). • Dispersed camping allowed in the Indian Creek Corridor except for the following designated dispersed camping zones that have been established:	Indian Creek would not be designated as an ACEC. Management prescriptions for this area would be the same as the surrounding lands and include but are not limited to: • Dispersed camping allowed throughout the Indian	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and

Table 2.1. Summary Table of Alternatives

• Almost all the ACEC would be in ROS P-class areas. • All vegetation must be with native species naturally occurring in the vicinity. • Available for mineral leasing with stipulations to prevent surface occupancy (Category 3) NSO; however, the are manager would grant an exception to the NSO stipulation in the event it is determined through and EA or EIS, is necessary, with the adoption and use of appropriate mitigation measures, that the project would meet visual quality standards for the area. • Available for geophysical work. • Unavailable for disposal of mineral materials. • Available for mineral entry with an approved plan of operations. • Retained in public ownership and not classified as segregated, or withdrawn from entry. • Excluded from private and commercial use of woodland products, except for limited on-site collection of dead wood for campfires. • Available for livestock use. • Closed to OHV use. • Managed to limit recreation use if scenic values are being damaged. • Managed as VRM Class I class. • Subject to conditional fire suppression, with motorized suppression methods used only if necessary to protect life and property.	• Managed as VRM Class I. • Available for mineral leasing subject to No Surface Occupancy (NSO). • Unavailable for disposal of mineral materials. • Retained in public ownership and recommended for withdrawal from mineral entry. • Available for geophysical work if VRM Class I can be met. • Unavailable for private and/or commercial use of woodland products including on-site collection of dead wood for campfires. However campfires are restricted to fire rings where fire rings are available. • Available for livestock use. • Closed to OHV use. • Dispersed camping not allowed in the Indian Creek Corridor (see Map 44). Camping allowed only in designated sites**.**	Bridger Jack Mesa, Indian Creek Falls, and Creek Pasture. Camping within these zones would be limited to designated sites.	Creek corridor. • Managed as VRM Class III.	commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.
Lavender Mesa ACEC (Mesa Top Only)				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Lavender Mesa ACEC (Non-WSA) Grazing Management Program – Relict Vegetation, (649 acres): Would be maintained and would continue to be managed with the following management prescriptions: • Managed to provide a baseline for rangeland studies through research and experiments and to allow for SPNM recreation. • Managed as ROS SPNM class. • Available for mineral leasing with an approved plan of operations, subject to stipulations precluding surface use of the mesa top insofar as possible (NSO). • Available for geophysical work. • Unavailable for disposal of mineral materials. • Available for mineral entry with an approved plan of operations, subject to stipulations precluding surface use of the mesa top insofar as possible. • Retained in public ownership and not classified, segregated, or withdrawn from entry. • Excluded from private or commercial use of woodland products, except for limited on-site collection of dead wood for campfires. • Unavailable for livestock grazing, including	Lavender Mesa (649 acres) would continue to be designated as a Vegetation (Relict) ACEC, and would be managed with the same management prescriptions as the Alternative A, except for the following changes: • Non-surface disturbing vegetative treatment allowed to control invasive species and for rehabilitation of disturbed surfaces. • Managed as NSO for oil and gas leasing. • Available for locatable mineral entry with approved plan of operations (for the sides of the mesa, not the top), subject to stipulations protecting vegetation on the mesa top. • No campfires allowed. • Managed to limit recreation use if vegetation communities are being adversely impacted. • Helicopter access allowed for scientific study and heliportable equipment. • Managed as VRM Class II.	Lavender Mesa (649 acres) would continue to be designated as a Vegetation (Relict) ACEC and would be managed with the same management prescriptions as Alternative **A,** except for the following changes: • Excluded from land treatments or other improvements, except for test plots and facilities necessary for study of the plant communities, and restoration/reclamation activities. • Managed as NSO for oil and gas leasing. • Available for locatable mineral entry with approved plan of operations, subject to stipulations protecting vegetation on the mesa top. • No campfires allowed. • Managed to limit recreation use if vegetation communities are being adversely impacted. • Geophysical exploration allowed if it does not adversely impact vegetation communities. • Managed as VRM Class II. • Helicopter access allowed for scientific study and heliportable equipment.	Lavender Mesa would not be designated as an ACEC and would be managed the same as the surrounding area. • Mechanized/motorized travel limited to designated routes. However, it should be noted that the area is inaccessible to motorized travel or grazing. • Helicopter access allowed for scientific study and heliportable equipment. • Managed as VRM Class III. • Unavailable for private and/or commercial use of woodland products including limited on-site collection of dead wood for campfires.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.

Table 2.1. Summary Table of Alternatives

grazing by saddle stock and pack animals allowed for access. • Excluded from land treatments or other improvements, except for test plots and facilities necessary for study of relict plant communities. • Excluded from wildlife habitat improvements. • Excluded from watershed control structures. • Subject to conditional fire suppression. • Closed to OHV use. • Managed to limit recreation use if cultural resources or scenic values are being damaged. • Excluded from surface disturbance by mechanized or motorized equipment, except helicopter access for scientific study and heliportable equipment, insofar as possible.				
Lockhart Basin ACEC				
MANAGEMENT COMMON TO ALL ALTERNATIVES Lockhart Basin potential ACEC overlays Indian Creek WSA (6,870 acres). WSAs are managed under the IMP. The special management prescriptions below apply to the proposed Lockhart Basin ACEC for protection of scenic values through a range of alternatives for analysis.				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
There is not currently an existing ACEC for Lockhart Basin. A portion of the potential Lockhart Basin ACEC area includes the Indian Creek existing ACEC. The current stipulations for the Indian Creek ACEC are listed below. Indian Creek ACEC (partial WSA) Scenic value (8,642 acres). Would be maintained and would continue to be managed with the following prescriptions: • Almost all of the ACEC would be in ROS P-class areas. • All vegetation must be with native species naturally occurring in the vicinity. • Available for mineral leasing with stipulations to prevent surface occupancy (Category 3) NSO; however, the area manager would grant an exception to the NSO stipulation if is determined through an EA (or EIS, if necessary) that with the adoption and use of appropriate mitigation measures, the project would meet visual quality standards for the area. • Available for geophysical work. • Unavailable for disposal of mineral materials. • Available for mineral entry with an approved plan of operations. • Retained in public ownership and not classified as segregated or withdrawn from entry. • Excluded from private and commercial use of woodland products, except for limited on-site collection of dead wood for campfires. • Available for livestock use. • Closed to OHV use. • Managed to limit recreation use if scenic values are being damaged.	Lockhart Basin (47,783) acres would be designated as a Scenic ACEC and would be managed with the following prescriptions: • Available for mineral leasing subject to NSO. Exemptions may be granted on a case-by-case basis if site-specific NEPA determines that VRM Class I can be met. • Surface-disturbing activities would be prohibited. Exemptions may be granted on a case-by-case basis if site-specific NEPA determines that VRM Class I can be met. • Available for geophysical work if VRM Class I can be met. • Unavailable for disposal of mineral materials. • Retained in public ownership and recommended for withdrawal from mineral entry. • Available for livestock use. • Managed as VRM Class I. • Pursue acquisition of state inholdings in this ACEC. • Open for campfires. • Unavailable for woodland product use except for limited on-site collection of dead wood for campfires.	Lockhart Basin would not be designated as an ACEC. It would be managed with the following prescriptions: • Available for mineral leasing subject to timing limitations and controlled surface use in Bighorn Sheep area, and Standard lease terms in remaining area. • Retained in public ownership. • Available for livestock use. • Managed as VRM Class II and III. • Open for campfires. • Unavailable for woodland product use except for limited on-site collection of dead wood for campfires.	Same as Alternative C.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.

Table 2.1. Summary Table of Alternatives

• Managed as VRM Class I. • Subject to conditional fire suppression, with motorized suppression methods used only if necessary to protect life and property.				
San Juan River ACEC				
MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES A Cultural Resources Management Plan would be written for the San Juan River and would not require an amendment to the RMP; the management plan will be based on the RMP.				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
San Juan River: The area proposed for ACEC designation under alternatives B, C, and E would not be designated as an ACEC under this alternative but would continue to be managed as the San Juan River SRMA (15,100 acres).	The San Juan River (7,590 acres) would be designated as a Scenic, Cultural, Wildlife, and Natural Systems and Processes ACEC and would be managed with the following prescriptions: **Note:** Increase boundary to include the east flank of Lime Creek Anticline. • Vehicle access, including OHVs/mechanized, limited to designated routes. • Unavailable for private and/or commercial use of woodland products except for limited on-site collection of dead wood for campfires; woodland use within the floodplain would be limited to collection of driftwood for campfires. • Available for livestock use October 1–April 30. • Available for watershed, range, wildlife habitat improvements and vegetation treatments. • West Montezuma Creek to Private land managed as VRM Class II. • West of accreted land at Town of Bluff to River mile 9 managed as VRM Class III. • River mile 9 to river mile 23 (above Mexican Hat formation) managed as VRM Class I. • River mile 23.8 to river mile 28 managed as VRM Class III. • River mile 28 to Glen Canyon NRA managed as VRM Class I. • Available for oil and gas leasing subject to NSO. • Unavailable for mineral material disposal. • Recommended for withdrawal from locatable mineral entry. • Managed to limit recreation use if wildlife values are being adversely impacted. • A Cultural Resources Management Plan would be written for all Alternatives (except Alternative A) for the San Juan River, and would not require an amendment to the RMP. • Camping closed in areas as necessary to protect cultural, wildlife, and natural processes. • Designated access trails to cultural sites as necessary to protect cultural resources. • No camping in cultural sites. • Ropes and other climbing aids not allowed for access to ruins, cultural sites, and nesting raptors.	Same as Alternative B.	The proposed area would not be designated as an ACEC. The area would be managed using the following prescriptions: • Vehicle access, including OHVs, limited to designated routes. • Unavailable for private and/or commercial use of woodland products except for limited on-site collection of dead wood for campfires; woodland use within the floodplain would be limited to collection of driftwood for campfires. • Available for livestock use October 1–May 31 and must meet or exceed PFC, and incorporate rest-rotation and/or deferment systems. • Camping closed in areas as necessary to protect cultural resources, wildlife and natural processes. • Designated access trails to cultural sites as necessary to protect cultural resources. • Available for watershed, range, wildlife habitat improvements, and vegetation treatments. • No camping in cultural sites. • Ropes and other climbing aids not allowed for access to ruins, cultural sites, or nesting raptors. • Managed as VRM Class II and VRM Class III. • Available for oil and gas leasing subject to NSO. • Retained in public ownership and not recommended for withdrawal from mineral entry. • Unavailable for mineral material disposal.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.

Table 2.1. Summary Table of Alternatives

Scenic Highway Corridor ACEC				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
For the 21,380 acres where the Scenic Highway Corridor ACEC (79,017 acres) overlaps the Cedar Mesa ACEC (295,336 acres), the special conditions for Scenic Highway Corridor ACEC would take precedence. Special conditions for the Corridor would be: Open for mineral leasing with stipulations to prevent surface occupancy (Category 3); however, the area manager would grant an exception to the NSO stipulation in the event it is determined, through an environmental assessment or environmental impact statement, if necessary, with the adoption and use of appropriate mitigation measures, that the project would meet visual quality standards. Available for disposal of mineral materials subject to visual quality considerations. Managed to limit recreation use if scenic values are being damaged. Managed as VRM class I with projects that meet these visual quality standards allowed.	Scenic Highway Corridor would not be designated.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
Shay Canyon ACEC				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Shay Canyon ACEC (3,561 acres): Cultural, and Special Emphasis Area for conservation value would be maintained with the following management prescriptions: • Where riparian areas overlap part of Shay Canyon ACEC, the special conditions for floodplains and riparian/aquatic areas would take precedence. • Within Shay Canyon ACEC, cultural properties eligible for NRHP would be surrounded by a buffer sufficient to allow permanent protection. If cultural resources or their buffers cannot be avoided, appropriate mitigation would be applied ranging from limited testing to extensive excavation. • In any given case, mitigation would be designed to fit the specific circumstances and reviewed by the SHPO and the Advisory Council on Historic Preservation. The Cedar Mesa Management Plan developed for the ACEC would guide fire protection, data recovery, and all other necessary cultural management activities. • Revegetation must be successfully established within 5 years after project completion. • Available for mineral leasing; surface use limited by special conditions. • Available for geophysical work. • Available for disposal of mineral materials. • Available for mineral entry with an approved plan of operations. • Retained in public ownership and not classified, segregated, or withdrawn from entry. • Excluded from private and commercial use of	Shay Canyon (119 acres) would be designated as a Cultural ACEC and would be managed with the following prescriptions: **Note:** Original ACEC boundary would be decreased to 119 acres. • A Cultural Resource Management Plan (CRMP) would be written for Shay Canyon ACEC. • OHV and mechanized travel limited to designated routes. • No surface disturbance for vegetation, watershed, or wildlife treatments/improvements. • Manage as NSO for oil and gas. • Open to geophysical exploration as long as it is consistent with the objectives of the ACEC. • Grazing restricted to trailing only. • With the exception of side canyons, hiking limited to designated trails. • Open to mineral entry with an approved plan of operations to avoid impacts to cultural and paleontological resources. • Unavailable for disposal of mineral materials. • Closed to campfires. • Unavailable for private or commercial use of woodland products including on-site collection of dead wood for campfires. • Recreation use may be limited if cultural and paleontological resources are impacted. • Managed as VRM Class II. • Closed to camping.	Same as Alternative B.	Shay Canyon would not be designated as an ACEC. It would be managed the same as the surrounding area, with the following prescriptions; • Open to grazing. • Managed as VRM Class III. • OHV use limited to designated routes. • Unavailable for private or commercial use of woodland products including on-site collection of dead wood for campfires.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.

Table 2.1. Summary Table of Alternatives

woodland products, except for limited on-site collection of dead wood for campfires. • Available for livestock use. • Managed as VRM Class I, with projects that meet these visual quality standards allowed. • Subject to conditional fire suppression. • OHV use limited to designated roads/trails. • Open for improvements in habitat and watershed. • Special Emphasis Area (corridor averaging 275 feet wide centered on [upper] Indian Creek): Managed to maintain and enhance riparian/aquatic habitat quality and to increase the extent of fishery habitat.				
Valley of the Gods ACEC				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Valley of the Gods: (31,387 acres) Special Emphasis Area for Scenic Value within the Cedar Mesa ACEC. • Surface disturbance would be managed to be compatible with VRM Class I criteria. • Surface disturbance would be limited to what can be successfully established within 1 year after project completion. Revegetation must be with native species naturally occurring in the vicinity. • Available for mineral leasing, NSO; however, the manager would grant an exception to the NSO stipulation in the event it is determined through an EA (or EIS, if necessary) that with the adoption and use of appropriate mitigation measures, the project would meet visual quality standards for the area. • Available for geophysical work. • Available for disposal of mineral materials with an approved plan of operations. • Available for mineral entry with an approved plan of operations. • Retained in public ownership and not classified, segregated, or withdrawn from entry. • Available for private and commercial use of woodland. • Open for livestock use. • Managed as VRM Class I. • OHV use limited to designated roads and trails. • Subject to conditional fire suppression.	Valley of the Gods (22,863 acres) would be designated as a Scenic ACEC and would be managed with the following prescriptions: • Managed as VRM Class I. • Unavailable for mineral leasing. • Unavailable for disposal of mineral materials. • Recommended for withdrawal from locatable mineral entry. • Available for livestock use. • Available for vegetation treatments. • No campfires allowed. • Unavailable for private and/or commercial use of woodland products. • BLM would pursue acquisition of state in-holdings in this ACEC.	Same as Alternative B	No ACEC designated.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.
SPECIAL DESIGNATIONS – WILD AND SCENIC RIVERS				
GOALS Review all eligible rivers to determine suitability for congressional designation into the National Wild and Scenic Rivers System (NWSRS). To the extent of the BLM's authority (limited to BLM lands within the river corridor), maintain and enhance the free-flowing character, preserve and enhance the ORVs, and allow no activities within the river corridor that would alter the tentative classification of those river segments determined suitable for congressional designation into the NWSRS until Congress acts on the designation.				
MANAGEMENT COMMON TO ALL ALTERNATIVES River segments found suitable and/or recommended for designation would be managed in accordance with the Wild and Scenic Rivers Act to protect the free-flowing nature of the river/segment, the tentative classification level, and to prevent impairment of the outstandingly remarkable values within 0.25 mile from high water mark on each side of the river not to exceed 320 acres per mile. On the San Juan River the area would be 0.25 mile from high water mark on the north side not to exceed 160 acres per mile. On the San Juan River, BLM has jurisdiction on the lands north of the river; and the Navajo Nation has jurisdiction on the southern side of the river. BLM would coordinate with the Navajo Nation in developing consistent management of the river. Management prescriptions for designated Wild and Scenic Rivers are listed in the BLM Manual 8351, Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation, and Management (BLM 1993b) by tentative classification: wild, scenic, recreational.				

Table 2.1. Summary Table of Alternatives

Suitable rivers would be managed in a manner similar to the BLM Manual 8351 guidelines. BLM would not seek water rights as part of a suitability decision made in the ROD for this RMP. All floodplains and riparian/aquatic areas would be managed in accordance with Executive Orders 11988 and 11990, and the Endangered Species Act, the BLM Riparian Area Management Policy, and the Utah guidelines for implementing BLM riparian area management policy.				
White Canyon – 30 miles from the Manti-La Sal National Forest boundary to the Glen Canyon National Recreation Area. Found eligible in the 1991 San Juan RMP. Was not recommended suitable under any alternative because it has no perennial water.				
Colorado River (Recreational) Segment 1 (352 acres)				
Alternative A (No Action)	**Alternative B**	**Alternative C (Preferred)**	**Alternative D**	**Alternative E**
Recommendation: This segment of the Colorado River was not evaluated for eligibility in the 1991 San Juan RMP (see segments 2 and 3 below).	Recommendation: Suitable – Recreational Size: 352 acres Location: Northern-most Monticello PA boundary, east side of Colorado River (1 mile north of Potash land) south of private land. Total river miles: 6.2 BLM river miles: 2.2 This segment would be managed with the following prescriptions: • VRM Class III. • Available for oil and gas leasing subject to standard lease terms, except for floodplains and riparian corridors, which would be managed as available for oil and gas leasing subject to NSO.	Recommendation: Not suitable.	Recommendation: Not suitable.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.
Colorado River (Scenic) Segment 2 (880 acres)				
Recommendation: The Colorado River was determined eligible in the 1991 San Juan RMP; suitability was not evaluated at that time. Location: From state lands near river mile 44 to the boundary of Canyonlands National Park, 12.5 miles. The eligible segment includes the BLM portion of the Colorado River, from the north line of public land south of the San Juan County line down river to the north boundary of Canyonlands National Park. This segment would be managed under special conditions for floodplains and riparian/aquatic areas (entire 12.5-mile segment) and SPNM class (lower 9.5-mile segment). Floodplains and riparian/aquatic areas would be: • Available for mineral leasing with stipulations to prevent surface occupancy within actual floodplains or riparian/aquatic areas (Category 3). • Managed as ROS SPNM. **Note:** These stipulations apply to proposed Colorado River segments 2 and 3.	Recommendation: Suitable – Scenic. Size: 880 acres Location: State lands near river mile 44 to approximately river mile 38.5. Total river miles: 6.8 BLM river miles: 5.5 miles This segment would be managed with the following prescriptions: • VRM Class II. • Available for oil and gas leasing subject to NSO.	Recommendation: Suitable – Scenic. Size: 880 acres Location: State lands near river mile 44 to approximately river mile 38.5 (5.5 miles). This segment would be managed with the following prescriptions: • VRM Class II. • Available for oil and gas leasing subject to NSO. • Motorized boat use allowed on the river.	Recommendation: Not suitable.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.
Colorado River (Scenic) Segment 3 (1,040 acres)				
See management prescriptions above.	Recommendation: Suitable – Scenic. Size: 1,040 acres Location: From approximately river mile 37.5 at state land to boundary of Canyonlands National Park near river mile 31. Total river miles: 6.5 BLM river miles: 6.5 This segment would be managed with the following prescriptions:	Recommendation: Suitable – Scenic. Size: 1,040 acres Location: From approximately river mile 37.5 at state land to boundary of Canyonlands National Park near river mile 31 (6.5 miles). Lands along CNP and with WC will be managed as per WC prescriptions (approximately 1 mile). This segment would be managed with the following prescriptions: • VRM Class I.	Recommendation: Not suitable.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.

Table 2.1. Summary Table of Alternatives

	• VRM Class I. • Unavailable for oil and gas leasing. • Closed to OHV use. • Recommended for withdrawal from locatable mineral entry. • Closed to motorized boat use.	• Unavailable for oil and gas leasing. • Closed to OHV use. • Recommended for withdrawal from locatable mineral entry. • Closed to motorized boat use.		
Indian Creek (Recreational; 1,536 acres)				
Recommendation: This segment of Indian Creek was not evaluated for eligibility in the 1991 San Juan RMP.	Recommendation: Suitable – Recreational. Size: 1,536 acres Location: Forest boundary to Donnelly Canyon. Total river miles: 6.5 BLM river miles: 4.8 miles This segment would be managed with the following prescriptions: • VRM Class III. • Available for oil and gas leasing subject to standard lease terms, except for floodplains and riparian corridors, which would be available for oil and gas leasing subject to NSO. • OHV travel would be limited to designated routes.	Recommendation: Not suitable.	Recommendation: Not suitable.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.
Fable Valley (Scenic; 2,176 acres)				
Recommendation: This segment of Fable Valley was not evaluated for eligibility in the 1991 San Juan RMP.	Recommendation: Suitable – Scenic. Size: 2,176 acres Location: Source to mouth at Gypsum Creek Total river miles : 6.8 BLM river miles: 6.8 Recommended as Suitable – Scenic. This segment would be managed with the following prescriptions: • VRM Class I. • Unavailable for oil and gas leasing. • Managed per IMP.	Recommendation: Not suitable.	Recommendation: Not suitable.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.
Dark Canyon (Wild) 2,048 acres				
Recommendation: This segment of Dark Canyon was not evaluated for eligibility in the 1991 San Juan RMP.	Recommendation: Suitable – Wild. Size: 2,048 acres Location: Forest boundary to Glen Canyon NRA below Young's Canyon. Total river miles: 13.6 BLM river miles: 6.4 This segment would be managed with the following prescriptions: • VRM Class I. • Unavailable for oil and gas leasing. • Closed to OHV use. • Recommended for withdrawal from locatable mineral entry.	Same as Alternative B.	Recommendation: Not suitable.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.

Table 2.1. Summary Table of Alternatives

San Juan River (Recreational) Segment 1 (1,360 acres)				
Recommendation: This segment of the San Juan River and the upper portion of proposed segment 2 were not evaluated for eligibility in the 1991 San Juan RMP (see segments 2, 3, 4, and 5 below).	Recommendation: Suitable – Recreational. Size: 1,360 acres Location: West Montezuma Creek to private land just before "avulsed" parcel of Navajo land at St. Christopher's Mission. Total river miles: 15.3 BLM River Miles: 8.5 This segment would be managed with the following prescriptions: • VRM Class III. • Available for oil and gas leasing subject to standard lease terms except for floodplains and riparian corridors which would be available for oil and gas leasing subject to NSO.	Recommendation: Not suitable.	Recommendation: Not suitable.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.
San Juan River (Recreational) Segment 2 (1,600 acres)				
San Juan River (This description covers a portion of proposed San Juan River Segment 2 and all of proposed segments 3, 4, and 5.) The eligible segment includes the BLM portion of the San Juan River from the bridge on US Highway 191 south of Bluff to the Glen Canyon NRA boundary. This segment would be managed under the special conditions listed below: **ROS P-Class Conditions for San Juan River** • Excluded from private and commercial use of woodland products, except for onsite collection of dead wood for campfires. • Available for livestock use. • Excluded from new land treatments. • Managed to allow cultural resources to remain subject to natural forces. • Managed as VRM Class I, with only those projects that meet class-I objective allowed; subject to conditional fire suppression, with motorized suppression methods used only if necessary to protect life and property. • Excluded from surface disturbance by mechanized or motorized equipment. **Semi-primitive Motorized (SPM) Class within San Juan River SRMA** The SPM-class area within San Juan River SPRA (9,380 acres) would be managed under certain conditions listed above for P-class areas, except that motorized boat use on San Juan River would be allowed. This area would be managed to maintain an environment of isolation insofar as allowed by river permit and patrol system. Levels of management and use are aimed at maintaining safety and the riverine ecosystem. The following special conditions are in addition to those listed above for P-class areas: • The area would be recommended for withdrawal from locatable mineral entry.	Recommendation: Suitable – Recreational. Size: 1,600 acres Location: West of "accreted" land at town of Bluff, Utah at river mile (minus) -1 to river mile 9. Total river miles: 10 BLM river miles: 10 This segment would be managed with the following prescriptions: • VRM Class III. • Available for oil and gas leasing subject to standard lease terms except for floodplains and riparian corridors which would be managed as available for oil and gas leasing subject to NSO.	Recommendation: Not suitable.	Recommendation: Not suitable.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.

Table 2.1. Summary Table of Alternatives

• Surface disturbance from mining activities on existing claims would be limited to the extent possible without curtailing valid existing rights. • The area above the rim in the vicinity of the Bluff airport lease would be available for mineral material disposal. • Except for motorized boat use on the San Juan River, no vehicle access would be allowed from Comb Wash downstream to Lime Creek and south of Mexican Hat bridge. In areas closed to OHV use, a plan of operations is required for any mining-related activity other than casual use. In other areas within the SRMA, vehicle access would be limited to designated roads and trails.				
San Juan River Wild Segment 3 (2,128 acres)				
See management prescriptions above.	Recommendation: Suitable – Wild. Size: 2,128 acres Location: River mile 9 to river mile 23 above the Mexican Hat formation. Total river miles: 13.3 BLM river miles: 13.3 This segment would be managed with the following prescriptions: • VRM Class I. • Unavailable for oil and gas leasing. • Closed to OHV use. • Recommended for withdrawal from locatable mineral entry.	Recommendation: Not suitable.	Recommendation: Not suitable.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.
San Juan River (Recreational) Segment 4 (672 acres)				
See management prescriptions above.	Recommendation: Suitable – Recreational. Size: 672 acres Location: River mile 23.8 west to river mile 28. Total river miles: 5.3 BLM river miles: 4.2 This segment would be managed with the following prescriptions: • VRM Class III. • Available for oil and gas leasing subject to standard lease terms, except for floodplains and riparian corridors, which would be available for oil and gas leasing subject to NSO.	Recommendation: Not suitable.	Recommendation: Not Suitable	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.
San Juan River Wild Segment 5 (2,768 acres)				
See management prescriptions above.	Recommendation: Suitable – Wild. Size: 2,768 acres Location: River mile 28 to Glen Canyon NRA at river mile 45. Total river miles: 17.3 BLM river miles: 17.3 This segment would be managed with the following	Recommendation: Not suitable.	Recommendation: Not suitable.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.

Table 2.1. Summary Table of Alternatives

	prescriptions: • VRM Class I. • Available for oil and gas leasing subject to NSO. • Closed to OHV use. • Recommended for withdrawal from locatable mineral entry.			
Arch Canyon (Recreational; 2,208 acres)				
This segment was not evaluated for eligibility in the 1991 San Juan RMP.	Recommendation: Suitable – Recreational. Size 2,208 acres Location: Forest boundary to 0.5 mile west of its confluence with Comb Wash. Total river miles: 7.7 BLM river miles: 6.9 This segment would be managed with the following prescriptions: • VRM Class III. • Open to oil and gas leasing subject to standard lease terms, except for floodplains and riparian corridors, which would be managed as open to oil and gas leasing subject to NSO.	Recommendation: Not suitable.	Recommendation: Not suitable.	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as unavailable for OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and as proposed for withdrawal from mineral entry.
SPECIAL DESIGNATIONS – Lands Studied For Congressional Wilderness Designation Under FLPMA Section 603				
GOALS AND OBJECTIVES FOR LANDS STUDIED FOR CONGRESSIONAL WILDERNESS DESIGNATION UNDER FLPMA SECTION 603 Manage FLPMA Section 603 wilderness study areas in a manner that does not impair their suitability for congressional designation into the National Wilderness Preservation System. This is the protective mandate of FLPMA Section 603(c).				
MANAGEMENT COMMON TO ALL ALTERNATIVES FOR LANDS STUDIED FOR CONGRESSIONAL WILDERNESS DESIGNATION UNDER FLPMA SECTION 603 All lands studied during the FLPMA Section 603 wilderness review will continue to be managed in a manner that does not impair their suitability for congressional designation in accordance with FLPMA Section 603(c), subject to valid existing rights. Actions may be allowed on a case-by-case basis only where BLM determines that such action would not impair the lands' wilderness suitability. The Monticello FO manages 13 wilderness study areas (386,027 GIS acres and 387,410 acres were listed in the 1991 San Juan RMP): Mancos Mesa (51,440 acres), Grand Gulch ISA Complex (37,810), Road Canyon (52,420), Fish Creek Canyon (46,440), Mule canyon (5,990), Cheese box Canyon (15,410), Dark Canyon ISA Complex (62,040), Butler Wash (22,030), Bridger jack Mesa (5,290), Indian Creek (6,870), South needles (160), Squaw and Papoose Canyons (6,560), Cross Canyon (1,000) Within the area managed by the Monticello FO, there is an area totaling 2,155 acres contiguous to the Butler Wash WSA, that was studied as a boundary variation during the wilderness review mandated by Congress in FLPMA Sections 603(a) and (b). These lands were addressed in the Utah BLM Statewide Wilderness Final EIS (November 1990) and were recommended for congressional wilderness designation in the Utah Statewide Wilderness Study Reports (October 1991). This recommendation was forwarded by the President of the Untied States to Congress in 1993 as part of the recommendation for the Butler Wash WSA, and thus in the Butler Wash WSA acreage addressed in this document. WSAs are managed in a manner consistent with the IMP. When appropriate, a land use plan amendment or amendments may be initiated. The only decisions related to WSA management that would be made in this plan are VRM, OHV designations, and route designations. WSA management prescriptions, as stipulated in the Interim Management Policy for Lands Under Wilderness Review (IMP), would take precedence over other management prescriptions. Designation of routes can only be on existing ways identified during the initial wilderness inventory. Under Alternatives A, C, and D, where some routes would remain available for motorized use within WSAs, such use could continue on a conditional basis. Use of the existing routes in the WSAs (called "ways" when located within WSAs, see Glossary) could continue as long as use of these routes does not impair wilderness suitability, as provided by the Interim Management Policy and Guidelines for Lands Under Wilderness Review (BLM 1995). The miles of motorized routes in WSAs (see below for miles of route per WSA) are only conditionally open to vehicle use. If Congress designates the area as wilderness, the routes will be closed. In the interim, if use and/or non-compliance are found through monitoring efforts to impair the area's suitability for wilderness designation, BLM would take further action to limit use of the routes, or close them. The continued use of these routes, therefore, is based on user compliance and non-impairment of wilderness values. Wilderness Study Areas would be managed as VRM Class I. Only Congress can release a WSA from wilderness consideration. Should any WSA, in part or in whole, be released from wilderness consideration, proposals in the released area would be examined on a case-by-case basis for consistency with the goals and objectives of the RMP decisions. Actions inconsistent with RMP goals and objectives would be deferred until completion of requisite plan amendments. Should any WSA, in part or in whole, be released by Congress from wilderness consideration, proposals in the released area would be examined on a case-by-case basis for consistency with the goals and objectives of the RMP decisions. Because the management direction of the released land would continue in accordance with the goals and objectives established in the RMP, there is no separate analysis required in this land use plan to address resource impacts if any WSAs are released.			
SPECIAL STATUS SPECIES				
GOALS Maintain, protect, and enhance habitats (including but not limited to designated critical habitat) of federally listed Threatened, Endangered, or Candidate plant or animal species to actively promote recovery to the point that they no longer need protection or prevent the listing of species under the Endangered Species Act.				

Table 2.1. Summary Table of Alternatives

Maintain, protect, and enhance habitats of BLM State Director's sensitive plant and animal species to ensure that actions requiring authorization or approval by the BLM are consistent with the conservation needs of special status species and do not contribute to the need to list any special status species, either under provisions of ESA or other provisions in the BLM Manual 6840 (BLM 2001c).

Develop conservation measures to minimize long-term habitat fragmentation through avoidance and site-specific reclamation to provide habitat quality and quantity adequate to fulfill the life history requirements and to support a natural diversity of species.

MANAGEMENT COMMON TO ALL ALTERNATIVES

Threatened and Endangered species avoidance and minimization measures would be used for all surface-disturbing activities to comply with the Endangered Species Act, the BLM State Director's sensitive plant and animal species, and the BLM Manual 6840, Special Status Species Management. See Appendix A.

Oil and gas and mineral development BMPs would be used, including minimizing roadbed width and footprint size, co-location of facilities, etc., to minimize habitat fragmentation.

BLM would continue to use the lease notices that BLM and FWS agreed to in the recent section 7 consultation on the oil and gas leasing program.

Inventories and monitoring studies would be conducted in order to determine special status plant and animal species locations, potential habitat, population dynamics, and existing and potential threats.

The protection of species and potential and/or occupied habitat for special status species would be considered and implemented prior to any authorization or action by the BLM that could alter or disturb such habitat.

No management action would be permitted on BLM lands that would jeopardize the continued existence of species that are listed, proposed for listing, or candidates for listing under the Endangered Species Act.

BLM would follow and implement the guidelines and management recommendations presented in species recovery or conservation plans (as updated), or alternative management strategies developed in consultation with USFWS.

BLM would support and implement where possible current and future sensitive species Conservation Agreements, including the Colorado River Cutthroat Trout Conservation Agreement and Strategy and Conservation Agreement for the roundtail chub, bluehead sucker, and flannelmouth sucker.

BLM would continue to work with USFWS and others to ensure that plans and agreements are updated to reflect the latest scientific data.

BLM would work cooperatively with USFWS and UDWR to obtain and/or maintain maps of current occupied and potential habitats for special status species.

BLM would work with the UDWR to implement the Utah Comprehensive Wildlife Conservation Strategy (UDWR 2005) to coordinate management decisions that would conserve native species and prevent the need for additional listings.

Translocations of population augmentation of special status species would be allowed to aid in conservation and recovery efforts. Necessary habitat manipulations and monitoring would be implemented to ensure successful translocation efforts.

BLM would implement and follow the guidelines in the Colorado River Fishes Recovery and Implementation Program (as updated).

Implement BLM's Guidance for the Management of Sagebrush Plant Communities for Sage-grouse Conservation and BLM's National Sage-grouse Habitat Conservation Strategy.

Consistent with RMP goals and objectives, the following plans or best available scientific information would be utilized and applied, as needed, as part of implementing the BLM's National Sage-grouse Habitat Conservation Strategy: Strategic Management Plan for Sage-grouse (BLM 2004d), WAFWA Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats (Connelly et al. 2004), and the Gunnison Sage-grouse Rangewide Conservation Plan (2005, as revised).

The Gunnison Sage-grouse Conservation Easement (320 acres) would be managed to protect and enhance habitat for sage-grouse and allow for land-ownership changes on conservation easements for sage-grouse.

Retain potential/occupied special status species habitat in federal ownership. Acquisition of potential/occupied special status species habitat would be high priority. These acquired/exchanged lands would be managed according to BLM land management prescriptions for special status species.

Any non-essential routes developed for a project located in special status species habitat would be closed and rehabilitated when the project is complete.

Raptor management would be guided by the use of Best Management Practices for Raptors and Their Associated Habitats in Utah (Appendix M), utilizing seasonal and spatial buffers, as well as mitigation, to maintain and enhance raptor nesting and foraging habitat, while allowing other resource uses.

Bald Eagle

Any BLM lands that contain nesting or winter roost habitat for the bald eagle would be avoided or use restrictions may be implemented depending on activity. Implementation of appropriate measures would depend on whether the action is temporary or permanent, and whether it occurs within or outside the bald eagle nesting or roosting season. A temporary action would be one that is completed outside of the breeding or roosting season leaving no permanent structures and resulting in no permanent habitat loss. A permanent action would be one that continues for more than one breeding or roosting season and/or causes a loss of eagle habitat or displaces eagles through disturbances, i.e., creation of a permanent structure. Raptors would be managed according to the USFWS Guidelines for Raptor Protection from Human and Land Use Disturbances (Romin and Muck 2002, as amended) and BLM's Best Management Practices.

Avoidance and minimization measures include the following:

- Surveys may be required prior to implementation of proposed action. All surveys must be conducted by qualified individual(s), be conducted according to protocol, and be acceptable to BLM.
- Activities may require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures would be evaluated and, if necessary, Section 7 consultation reinitiated.
- Any activity should be managed to ensure maintenance or enhancement of riparian habitat.
- Temporary activities within 1 mile of nest sites would not occur during the breeding season of January 1 to August 31, unless the area has been surveyed according to protocol and determined to be unoccupied as of June 1 of a given year.
- Temporary activities within 0.5 miles of winter roost areas, e.g., cottonwood galleries, would not occur during the winter roost season of November 1 to March 31, unless the area has been surveyed according to protocol and determined to be unoccupied.
- Seasonal and spatial buffers would be implemented in accordance with USFWS Raptor Guidelines when temporary daily activities must occur within winter roosting buffers.
- No future ground-disturbing activities would be authorized within 0.5 mile of known bald eagle nest sites year-round. Deviations may be allowed only after appropriate levels of consultation and coordination with the USFWS.
- No permanent above-ground structures would be allowed within 0.5 miles of a winter roost site, if the structure would result in the habitat becoming unsuitable for future winter roosting by bald eagles.
- In conjunction with the county, public notices would be posted instructing drivers to watch for eagles on roads within bald eagle foraging range.
- Avoid loss or disturbance to large cottonwood gallery riparian habitats.
- Avoid surface disturbance in riparian areas. If impracticable, all areas of surface disturbance within riparian areas and/or adjacent uplands should be re-vegetated with native species.

Exceptions to the above-described prescriptions or additional measures may be implemented to avoid or minimize impacts to the species at any time in consultation with the USFWS to ensure continued compliance with the ESA.

Mexican Spotted Owl (MSO)

Avoidance and minimization measures would include the following:

- Assess habitat suitability for both nesting and foraging using accepted habitat models in conjunction with field reviews. Apply the appropriate conservation measures below if project activities occur within 0.5 mile of suitable owl habitat. Determine potential impacts of actions to owls and their habitat.
  - Document type of activity, acreage, and location of direct habitat impacts, type and extent of indirect impacts relative to location of suitable owl habitat.
  - Document if action is temporary or permanent.

Table 2.1. Summary Table of Alternatives

- For all temporary actions that may impact owls or suitable habitat (Map 86).
  - If the action occurs entirely outside of the owl breeding season (March 1–August 31), and leaves no permanent structure or permanent habitat disturbance, action can proceed without an occupancy survey.
  - If action would occur during a breeding season, survey for owls prior to commencing activity. If owls are found, activity should be delayed until outside of the breeding season.
  - Rehabilitate access routes created by the project through such means as raking out scars, re-vegetation, gating access points, etc.

For all permanent actions that may impact owls or suitable habitat:

- Survey two consecutive years for owls according to accepted protocol prior to commencing activities.
- If owls are found, no disturbing actions would occur within 0.5 mile of identified nest site. If nest site is unknown, no activity would occur within the designated current and historic Protected Activity Center (PAC).
- Avoid permanent structures within 0.5 mile of suitable habitat unless surveyed and not occupied.
- Reduce noise emissions (e.g., use hospital-grade mufflers) to 45 dBA at 0.5 mile from suitable habitat, including canyon rims. Placement of permanent noise-generating facilities should be contingent upon a noise analysis to ensure noise does not encroach upon a 0.5 mile buffer for suitable habitat, including canyon rims.
- Limit disturbances to and within suitable habitat by staying on designated and/or approved routes.
- Limit new access routes created by the project.

Exceptions to the above-described prescriptions or additional measures may be implemented to avoid or minimize impacts to the species at any time in consultation with the USFWS to ensure continued compliance with the ESA.

Southwestern Willow Flycatcher and Yellow-billed Cuckoos

Any BLM lands that contains riparian habitat that falls within the range for southwestern willow flycatcher or yellow-billed cuckoos would be avoided or use restrictions may be implemented depending on activity. Application of appropriate measures would depend on whether the action is temporary or permanent, and whether it occurs within or outside the nesting season. A *temporary* action is completed prior to the following breeding season leaving no permanent structures and resulting in no permanent habitat loss. A *permanent* action continues for more than one breeding season and/or causes a loss of habitat or displaces flycatchers or cuckoos through disturbances, i.e., creation of a permanent structure.

Avoidance and minimization measures include the following (note that these would apply to both temporary and permanent actions):

- Surveys may be required prior to implementation of proposed action. All surveys must be conducted by qualified individual(s), be conducted according to protocol, and be acceptable to BLM.
- Activities may require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures would be evaluated and, if necessary, Section 7 consultation reinitiated.
- Any activity would be managed to ensure maintenance or enhancement of riparian habitat.
- All surface-disturbing activities would maintain a 300-foot buffer from suitable riparian habitat year-long.
- Construction or disturbing activities within 0.25 mile of occupied breeding habitat would not occur during the breeding season of May 1 to September for flycatchers, and May 1 to August 31 for cuckoos.
- Permanent facilities that emit high noise levels would maintain a 0.25 buffer from riparian areas yearlong.
- Ensure that water extraction or disposal practices do not result in change of hydrologic regime that would result in loss or degradation of riparian habitat.
- Revegetation of disturbed areas within riparian areas and adjacent uplands would be done with native species or ecological equivalents.

Exceptions to the above-described prescriptions or additional measures may be implemented to avoid or minimize impacts to the species at any time in consultation with the USFWS to ensure continued compliance with the ESA and BLM's 6840 Manual.

Endangered Colorado River Fishes

Any BLM areas, watersheds, or tributaries to the section of rivers that are Designated Critical Habitat for Colorado River fish (bonytail, humpback chub, Colorado pikeminnow, and razorback sucker) would be avoided or use restrictions may be implemented depending on activity. Designated critical habitat for all the endangered fishes includes those portions of the 100-year floodplain that contain primary constituent elements necessary for survival of the species.

Avoidance and minimization measures include the following:

- Surveys may be required prior to implementation of proposed action. All surveys must be conducted by qualified individual(s) and be acceptable to BLM.
- Activities may require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures would be evaluated and, if necessary, Section 7 consultation reinitiated.
- Any activity would be managed to ensure maintenance or enhancement of riparian habitat.
- Avoid loss or degradation of riparian habitats.
- Implement the Utah Oil and Gas Pipeline Crossing Guidance (Appendix F).
- Follow Executive Orders 11990 and 11988 to ensure protection to listed fish species and/or their critical habitat.

Water depletions from any portion of the Upper Colorado River drainage basin above Lake Powell are considered to adversely impact or adversely modify the critical habitat of the four resident endangered fish species, and must be evaluated with regard to the criteria described in the Upper Colorado River Endangered Fish Recovery Program. Formal consultation with USFWS is required for all depletions. All depletion amounts must be reported to BLM.

Exceptions to the above-described prescriptions or additional measures may be implemented to avoid or minimize impacts to the species at any time in consultation with the USFWS to ensure continued compliance with the ESA.

California Condor

Any BLM lands that are utilized by communal roosting or nesting California condors (if and when they utilize the PA) would be avoided or use restrictions may be implemented depending on activity. Appropriate measures would depend whether the action is temporary or permanent, and whether it occurs within or outside the condor nesting season. A *temporary* action is completed outside of the breeding season leaving no permanent structures and resulting in no permanent habitat loss. A *permanent* action continues for more than one breeding season and/or causes a loss of condor habitat or displaces condors through disturbances, i.e., creation of a permanent structure.

The following avoidance and minimization measures would apply if and when condors nest in the PA:

- Surveys may be required prior to implementation of proposed action. Surveys must be conducted by qualified individual(s), be conducted according to protocol, and be acceptable to BLM.
- Temporary land-use activities would not occur within 1 mile of a California condor nest site during the breeding season.
- Recreation uses would be monitored within 1 mile of condor nest sites and activities temporarily restricted if necessary to protect the condor.
- Special use permit group events would be prohibited within 1 mile of condor nest sites during the breeding season.
- No permanent structures or roads would be allowed within 1 mile of condor nest sites.
- Educational opportunities would be promoted, with an emphasis on use of non-lead ammunition and minimizing interaction of condors with recreationists.

Table 2.1. Summary Table of Alternatives

- BLM would work with utility companies or permit holders to minimize impacts to condors.

Gunnison Sage-grouse

New fences built within Gunnison sage-grouse habitat should be fitted with visual devices (flagging, white-tipped t-posts, etc.) to minimize grouse collision. Where possible, place fences in areas where topographic features can be used to deter collisions.

Alternative A (No Action)	Alternative B	Alternative C (Preferred)	Alternative D	Alternative E
Gunnison Sage-grouse				
Unspecified.	Crucial Year-round Habitat: 145,583 acres (BLM lands: 4,524 acres) The following prescriptions would apply to BLM lands and/or BLM-permitted activities associated with the administration of federal minerals on split-estate lands: Lek habitat (within 2 miles of active strutting ground) • Prohibit year-round construction of fences. Retrofit visual devices on existing fences to prevent collisions. Where opportunity exists, remove existing fences. • Prohibit construction of power lines or other tall structures year-round. • CSU for oil and gas leasing activities. • Unavailable for non–ground disturbing geophysical work from March 20 to May 15. • Prohibit construction of roads year-round. • Prohibit construction of wind power turbines year-round. • Avoid all permitted activities from March 20 to May 15. If impracticable, no activity from sunset the evening before to 3 hours after sunrise the next morning.	Crucial Year-round Habitat: 145,583 acres (BLM lands: 4,524 acres) The following prescriptions would apply to BLM lands and/or BLM-permitted activities associated with the administration of federal minerals on split-estate lands: Lek habitat (within 0.6 miles of active strutting ground) • Retrofit visual devices on existing fences to prevent collisions year-round. Where opportunity exists, remove existing fences. Avoid construction of new fences as much as possible. If new fences have to be built, fit with visual devices. • Prohibit construction of power lines or other tall structures year-round. • CSU for oil and gas leasing activities. • Unavailable for non–ground disturbing geophysical work from March 20 to May 15. • Prohibit construction of roads year-round. • Avoid construction of wind power turbines year-round. • With the exception of grazing, prohibit all permitted activities from 1 hour before sunrise to 3 hours after sunrise from March 20 to May 15.	Crucial Year-round Habitat: 70,460 acres (BLM Lands-2,877 acres) The following prescriptions would apply to BLM lands and/or BLM-permitted activities associated with the administration of federal minerals on split-estate lands: Lek habitat (within 0.25 miles of active strutting ground) • Avoid construction of fences wherever possible. • Avoid construction of power lines or other tall structures. If impractical, bury power lines or retrofit them to prevent perching by raptors. • CSU for oil and gas leasing activities. • Unavailable for non-ground disturbing geophysical work from March 20 to May 15. • Prohibit maintenance and operation activities for mineral production from 1 hour before sunrise to 3 hours after sunrise from March 20 to May 15. • Prohibit construction of roads year-round. • Avoid construction of wind power turbines year-round. • Avoid permitted activities from 1 hour before sunrise to 3 hours after sunrise from March 20 to May 15.	• Same as Alternative B except that non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as closed to OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and proposed for withdrawal from mineral entry.
	Year-round habitat (within 6 miles of active strutting ground). • Sagebrush treatments must have recovery objectives that meet the habitat objectives listed in the Gunnison Sage-grouse Rangewide Conservation Plan (2005, as amended). Any variance from these recovery objectives would be subject to site-specific NEPA, including collaboration with stakeholder groups. • Prohibit the construction of new fences. If impracticable, increase the visibility of the fences and monitor effectiveness of visual devices and modify or remove feces if necessary to minimize sage-grouse mortality. • Leasing would be available with standard stipulations for oil and gas development to minimize impacts to sage-grouse and sagebrush habitat. Follow Suggested Management Practices, where applicable, for oil and gas development listed in the Gunnison Sage-grouse Rangewide Conservation Plan (2005, as amended). • Prohibit the construction of power lines or other tall structures. • Prohibit construction of wind power turbines. • Limit grazing use levels as necessary to maintain and/or improve sage-grouse habitat.	Year-round habitat (within 6 miles of active strutting ground from June 1 to March 14). • Sagebrush treatments must have recovery objectives that meet the habitat objectives listed in the Gunnison Sage-grouse Rangewide Conservation Plan (2005, as amended). Any variance from these recovery objectives would be subject to site-specific NEPA, including collaboration with stakeholder groups. • Avoid the construction of new fences. If impracticable, increase the visibility of the fences and monitor effectiveness of visual devices and modify or remove feces if necessary to minimize sage-grouse mortality. • Leasing would be available with standard stipulations for oil and gas development to minimize impacts to sage-grouse and sagebrush habitat. Follow Suggested Management Practices, where applicable for oil and gas development listed in the Gunnison Sage-grouse Rangewide Conservation Plan (2005, as amended). • Avoid the construction of power lines or other tall structures. If impractical, bury power lines or retrofit them to prevent perching by raptors. • Prohibit construction of wind power turbines. • Limit grazing use levels as necessary to maintain and/or improve sage-grouse habitat.	Year-round habitat (within 6 miles of active strutting ground from June 1 to March 14). • Sagebrush treatments must have recovery objectives that meet the habitat objectives listed in the Gunnison Sage-grouse Rangewide Conservation Plan (2005, as amended), or, if varied, must be approved by local sage-grouse working group. • Construction of new fences must be made as visible as possible to avoid grouse collisions. • Leasing would be available with standard stipulations for oil and gas development to minimize impacts to sage-grouse and sagebrush habitat. • Manage grazing to maintain Rangeland Health. • BLM lands within sage-grouse habitat in the following grazing allotment would not be grazed from March 20 to May 15: Sage Flat, Upper East Canyon, Sage-grouse, and Dry Farm.	• Same as Alternative B except that non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, as closed to OHV use, as ROW exclusion areas, as unavailable for disposal of mineral materials, as unavailable for private and commercial woodland harvest, as VRM Class I, and proposed for withdrawal from mineral entry.

Table 2.1. Summary Table of Alternatives

	• BLM lands within sage-grouse habitat in the following grazing allotments would not be grazed from March 20 to May 15: Sage Flat, Upper East Canyon, Sage-grouse, Dry Farm.	• BLM lands within sage-grouse habitat in the following grazing allotments would not be grazed from March 20 to May 15: Sage Flat, Upper East Canyon, Sage-grouse, Dry Farm.		
Habitat for Mexican Spotted Owl and Flannelmouth Sucker				
Arch Canyon				
	• Closed to OHV use. • Group size limited to 10 vehicles and 2 groups per day. • A permit system would be implemented.	• OHV use would be limited to the designated route to the end of the State Section (T37S R20E Section 16) year-round. The canyon would be closed year-round from west boundary of the state section to the end of the route at the National Forest boundary. • Group size limited to 12 vehicles and two groups per day. • A permit system would be implemented.	• OHV use limited to the designated route year-round. • Commercial motorized use limited to 12 vehicles and up to 2 trips a day.	
TRAVEL MANAGEMENT				
GOALS AND OBJECTIVES BLM would provide opportunities for a range of motorized recreation experiences on public lands while protecting resources and minimizing conflicts among various users. All BLM lands would be designated as open, limited, or closed. Seasonal restrictions can be applied to the limited category. Any fire, military, emergency, or law enforcement vehicle being used for emergency or administrative purposes is exempt from OHV decisions. OHV vehicle use would be managed in accordance with BLM's National OHV strategy.				
MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES Designated routes would be categorized as mechanized only (bicycles), single-track motorized (dirt bikes), or two-track motorized (4-wheelers, jeeps), or available to all vehicles, or any combination of these categories. Adjustments of these categories would be made based on recreational demand and potential conflict. The impacts of these adjustments would be analyzed and disclosed at the activity planning level. All non-motorized travel would be allowed on designated routes unless otherwise prohibited. OHV and mechanized travel would be allowed on some routes unless otherwise designated. There would be no exceptions that allow for cross-country travel for game retrieval or antler gathering in areas designated as limited or closed. OHV use for game retrieval would adhere to all OHV classifications in all alternatives. BLM Back Country Byways and National Recreation Trails may be designated in the future, as deemed appropriate, with site-specific environmental analysis. Where the authorized officer determines that OHVs are causing or would cause considerable adverse impacts, the authorized officer shall close or restrict such areas. The public would be notified. **Making Modifications to Travel Plan Designated Route Network [IM UT 2004-061] See Appendix G Monticello Travel Plan.** Recreation management decisions concerning designation modifications and recreational facility or trail proposals would be evaluated annually. Representatives from interested user groups would be asked to participate and comment during the review process. Decision-making criteria including visitor numbers, user complaints, user conflicts, quantity and variety of recreation uses occurring, types and numbers of recreation violations, proliferation of unauthorized routes, changes in visitor needs, and documented resource damage would provide the basis for recreation management determinations. Final route determinations would be approved by the field manager. Through additional analysis and land use planning (i.e., activity level planning), BLM would collaborate with impacted and interested parties in evaluating the designated road and trail network for suitability for active OHV management, and envisioning potential changes in the existing system or adding new trails that would help meet current and future demands. In conducting such evaluations, the following factors would be considered: • Trails suitable for different categories could include equestrian/stock, mechanized vehicles (bicycles), and OHVs (dirt bikes, ATVs, and 4-wheel drive touring vehicles) as well as opportunities for joint trail use. • Needs for parking, trailheads, informational and directional signs, mapping, and development brochures or other materials for public dissemination. • Opportunities to tie into existing or planned trail networks. • Measures needed to avoid on- and off-site impacts to current and future land uses and important resources. Among others, issues include noise and air pollution, erodible soils, stream sedimentation, non-point source water pollution, listed and sensitive species habitats, historic and archeological sites, wildlife, special management areas, grazing operations, fence and gate security, needs of recreationists, and recognition of property rights for adjacent landowners. • Public land roads or trails determined to cause considerable adverse impacts or to constitute a nuisance or threat to public safety would be considered for relocation or closure and rehabilitation after appropriate coordination with applicable agencies and partners. BLM would make future route adjustments based on access needs, recreational opportunities, and resource constraints. These activities would be analyzed at the site-specific activity planning level. BLM would manage bicycle and other mechanized uses consistent with the National Mountain Bicycling Strategic Action Plan (BLM 2002a).				
OHV Area Designations				
Alternative A (No Action)	**Alternative B**	**Alternative C (Preferred)**	**Alternative D**	**Alternative E**
Open to OHV use: 611,310 acres Squaw Canyon and Cross Canyon WSAs are within this acreage but would not be designated as open unless and until Congress releases them from WSA status. This would require a plan amendment.	Open to OHV use: 0 acres	Open to OHV use: 2,311 acres	Open to OHV use: 2,311 acres	Open to OHV use: 0 acres

Table 2.1. Summary Table of Alternatives

Limited use with seasonal restrictions: 540,260 acres to protect the following: • bighorn sheep lambing and rutting areas • antelope fawning areas • deer winter ranges Limited to existing roads and trails: 570,390 acres To protect cultural, scenic, and recreational values: • Alkali Ridge ACEC • Scenic Highway Corridor ACEC • Most SPNM-class areas Limited to Designated Roads and Trails: 218,780 acres To protect cultural, scenic, and recreational values: • Cedar Mesa ACEC (partial) • Hovenweep ACEC • Pearson Canyon hiking area • Shay Canyon ACEC • SPNM-class areas in SRMAs • Road corridors adjacent to SPNM-class areas • Developed recreation sites • Floodplains, riparian/aquatic areas	Limited to designated routes: 1,359,417 acres Mountain bike use would be limited to the same designated routes as OHV travel. Limited to designated routes with seasonal restrictions: 0 acres	Limited to designated routes: 1,362,142 acres Limited to designated routes with seasonal restrictions: Approximately 3.8 miles. (Arch Canyon) Four WSAs would allow for conditional motorized use of 7 ways to provide access to trailheads: • Fish Creek WSA 2 ways • Road Canyon WSA 1 way • Mancos Mesa WSA 2 ways • Grand Gulch WSA 2 ways Where routes would remain available for motorized use within WSAs, such use could continue on a conditional basis. Use of the existing routes in the WSAs, ("ways" when located within WSAs – see Glossary) could continue as long as the use of these routes does not impair wilderness suitability, as provided by the IMP (BLM 1995). If Congress designates the area as wilderness, the routes will be closed. In the interim, if use and/or non-compliance are found through monitoring efforts to impair the area's suitability for wilderness designation, BLM would take further action to limit use of the routes, or close them. The continued use of these routes, therefore, is based on user compliance and non-impairment of wilderness values.	Limited to Designated Routes: 1,780,807 acres Mountain bike use would be limited to the same designated routes as OHV travel. Limited to Designated Routes with Seasonal Restrictions: 0 acres	Limited to Designated Routes: 812,679 acres Mountain bike use would be limited to the same designated routes as OHV travel. Limited to Designated Routes with Seasonal Restrictions: 0 acres
Closed to OHV Use: 276,430 acres To protect the following vegetation study areas: • Bridger Jack Mesa • Lavender Mesa To protect the following cultural, scenic, and recreational values: • Butler Wash ACEC • Cedar Mesa ACEC (partial) • Dark Canyon ACEC • Indian Creek ACEC • Most ROS-P areas San Juan River SRMA SPM-class area • RN-class area on Mancos Mesa **Note:** Acres may not be additive because of overlap.	Closed to OHV Use: 423,698 acres To protect the following vegetation study areas: • Bridger Jack Mesa • Lavender Mesa To protect the following cultural, scenic, and recreational values: • San Juan River SRMA SPM-class area To protect the following cultural values: • Tank Bench C-SMA, Outlaw Canyon • Tank Bench C-SMA, South Cottonwood Wash To protect the wilderness character of the following: • Cross Canyon WSA • Squaw and Papoose WSA • Mule Canyon WSA • Fish Creek WSA • Grand Gulch ISA Complex • Road Canyon WSA • Dark Canyon WSA • Indian Creek WSA • Bridger Jack Mesa WSA • Butler Wash WSA • Mancos Mesa WSA • Cheesebox Canyon WSA • South Needles WSA and the Administratively Endorsed Lands that are contiguous to Butler Wash WSA.	Closed to OHV Use: 418,667 acres To protect the following vegetation study areas: • Bridger Jack Mesa • Lavender Mesa To protect the following cultural, scenic, and recreational values: • San Juan River SRMA (partial) minus CR D4602 (Rincon Rd) is a cherry-stem route To protect the following cultural values: • Tank Bench C-SMA, Outlaw Canyon • Tank Bench C-SMA, South Cottonwood Wash To protect wilderness character of the following except for "ways" noted above: • Cross Canyon WSA • Squaw and Papoose WSA • Mule Canyon WSA • Fish Creek WSA • Grand Gulch WSA ISA Complex • Road Canyon WSA • Dark Canyon WSA • Indian Creek WSA • Bridger Jack Mesa WSA • Butler Wash WSA • Mancos Mesa WSA • Cheesebox Canyon WSA • South Needles WSA and the Administratively Endorsed Lands that are contiguous to Butler Wash WSA.	Closed to OHV Use: 0 acres	Closed to OHV Use: 970,436 acres To protect vegetation study areas: • Bridger Jack Mesa • Lavender Mesa To protect cultural, scenic, and recreational values: • San Juan River SRMA SPM-class area To protect cultural values: • Tank Bench C-SMA, Outlaw Canyon • Tank Bench C-SMA, South Cottonwood Wash To protect wilderness character: • Cross Canyon WSA • Squaw and Papoose WSA • Mule Canyon WSA • Fish Creek WSA • Grand Gulch WSA ISA Complex • Road Canyon WSA • Dark Canyon WSA • Indian Creek WSA • Bridger Jack Mesa WSA • Butler Wash WSA • Mancos Mesa WSA • Cheesebox Canyon WSA • South Needles WSA and the Administratively Endorsed Lands that are contiguous to Butler Wash WSA • Non-WSA lands with wilderness characteristics as shown in Table 3.19 Lands evaluated for Wilderness Characteristics (page 3-73)

Table 2.1. Summary Table of Alternatives

Miles of Designated Roads on Public Lands within the Monticello PA				
Open B-Class Roads: 890 miles Open D-Class Roads: 2,179 miles Closed D-Class Roads: 0 miles	Open B-Class Roads: 875 miles Open D-Class Roads: 1,521 miles Closed D-Class Roads :780 miles	Open B-Class Roads: 873 miles Open D-Class Roads: 1,947 miles Closed D-Class Roads: 316 miles	Open B-Class Roads: 873 miles Open D-Class Roads: 2,205 miles Closed D-Class Roads: 45 miles	Open B-Class Roads: 875 miles Open D-Class Roads: 1,342 miles Closed D-Class Roads: 959 miles
Special Stipulation Areas within the *Limited to Designated Routes* Category				
MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES Routes in riparian areas designated as Functioning at Risk would be closed if site-specific analysis determines that OHV use is contributing to riparian degradation.				
Arch Canyon (to protect wildlife)				
Alternative A	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
See also Special Status Species section.	• Area would be closed to OHV use. • Group size (for non-mechanized, non-motorized) limited to 10 individuals and two groups per day. • A permit system would be implemented.	• OHV use would be limited to the designated route to the end of the State Section (T37S R20E Section 16) year-round. The canyon would be closed year-round from the west boundary of the State Section to the end of the route at the National Forest boundary. • Group size for OHV use limited to 12 individuals and two groups per day. • There would be no limits on non-mechanized, non-motorized group size. • A permit system would be implemented for OHV use only.	• OHV use would be limited to designated route year-round. • Commercial motorized use would be limited to 12 people per trip and up to 2 trips per day. • Private OHV group size would be unlimited.	• Area would be closed to OHV use. • Group size (for non-mechanized, non-motorized) would be limited to 10 individuals and two groups per day. • A permit system would be implemented.
McLoyd Canyon-Moon House (for cultural protection)				
See also Cultural section.	The "way" D4798, which is within Fish Creek WSA, would be closed to motorized use.	No motorized travel would be allowed on northern section of road (approximately 500 feet) D4798, which crosses onto BLM land (and lies within Fish Creek WSA) at the northern State Section boundary.	Travel would be allowed on Road D4798 and would be limited to the designated route (which lies within the Fish Creek WSA).	The "way" D4798, which is within Fish Creek WSA, would be closed to motorized use.
Non-mechanized (e.g., Hiking, Equestrian, and Backpacking)				
MANAGEMENT COMMON TO ALL ALTERNATIVES Non-mechanized travel is not restricted on public lands except where limited or prohibited to protect specific resource values, provide for public safety, or maintain an identified opportunity. Provide opportunities for non-mechanized travel (hiking) on all routes open to mechanized use. Manage routes identified in each alternative to exclude motorized and mechanized use and provide opportunities for non-mechanized travel independent of motorized and mechanized routes. Limit non-mechanized travel on specific lands to designated routes for resource protection purposes. Continue to manage non-mechanized travel under the 1991 San Juan RMP (BLM 1991a) and under closure and restriction notices published in the Federal Register under the authority of 43 CFR 8364. **MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES** Manage the following trails for non-mechanized use: • Open to foot travel: Kane Gulch, Todie Canyon, Bullet Canyon, Shieks Canyon, Government Trail, Collins Canyon, Slickhorn Canyon, Point Lookout Canyon, Grand Gulch (from junction to San Juan River), Fish Canyon, Owl Canyon, Road Canyon, McLoyd Canyon, Lime Creek Canyon, North Mule Canyon, South Mule Canyon, Lower Mule Canyon from Comb Wash, Mule Canyon or Cave Canyon Towers, Arch Canyon, Johns Canyon, Honaker Trail, Keeley Trail, Dark Canyon (Sundance Trail), Fable Valley Trail, Salt Creek Mesa Trail, Butler Ruin Interpretative Trail, Sand Island Petroglyph Trail, Shay Canyon Petroglyph Trail, Newspaper Rock Trail, Salvation Knoll Trail, Monarch Cave Trail, Fish Mouth Trail, Cold Springs Trail, Procession Panel Trail, Wolf Man Panel Trail, Moon House Trail, Ball Room Cave Trail. • Open for Stock overnight use: Kane Gulch, Bullet Canyon, Government Trail, Collins Canyon, Grand Gulch (from Kane Gulch to the junction of Collins Canyon; no stock below Collins Canyon), Fish Canyon (from Comb Wash to confluence with Owl Canyon), Road Canyon, McLoyd Canyon, Lime Creek Canyon, Lower Mule Canyon from Comb Wash, Arch Canyon, Johns Canyon, Salt Creek Mesa Trail. • Open for stock day use: Bullet Canyon (from Grand Gulch to Jailhouse Ruin), Fish Canyon (2 miles above the confluence with Owl Canyon), Owl Canyon (to Neville's Arch), Road Canyon, McLoyd Canyon (to the impassible pour-off), Lime Creek Canyon, Salt Creek Mesa Trail, Monarch Cave Trail, Fish Mouth Trail, Cold Springs Trail, Procession Panel Trail, Wolf Man Panel Trail, Moon House Trail, Ball Room Cave Trail. Non-mechanized routes may be added through subsequent planning at the activity plan level on a case by case basis. Indian Creek Climbing Trails would include the following: Bridger Jack Mesa, Super Crack Buttress, Cat Wall, Broken Tooth Wall, Scarface, and Battle of the Bulge.				

Table 2.1. Summary Table of Alternatives

VEGETATION

GOALS

Manage vegetation resources for desired future conditions, ensuring ecological diversity, stability, and sustainability, including the desired mix of vegetation types, structural stages, and landscape/riparian/watershed function, and provide for native plant, fish, and wildlife habitats.

Provide opportunities for plant material gathering (seed collection, plant collection, etc.) of various vegetation types while protecting other resources.

Maintain existing vegetative treatment areas as appropriate.

Sustain the integrity of the sagebrush steppe community type to provide the amount, continuity, and quality of habitat that is necessary to maintain sustainable populations of sage-grouse and other sagebrush obligate species.

Control invasive and non-native weed species and prevent the introduction of new invasive species through the implementation of a comprehensive weed program, including coordination with partners; prevention and early detection; education; inventory and monitoring; and principles of integrated weed management.

Control invasive and non-native weed species and prevent the introduction of new invasive species through the implementation of the BLM National Strategy and Action Plan as outlined in documents such as, "Pulling Together: National Strategy for Invasive Plant Management Initiative" and "Partners Against Weeds" (1994).

Control insect pest species as necessary to protect vegetation resources in conjunction with Animal and Plant Health Inspection Service (APHIS).

MANAGEMENT COMMON TO ALL ALTERNATIVES

Areas that meet Utah's Rangeland Health Standards would be open to seed gathering and plant collection, including commercial seed gathering.

Seed gathering would be managed according to Utah BLM guidance for Seed Collection Policy and Pricing (as amended).

1.3.1 Guidance for Addressing Sagebrush Habitat Conservation (November, 2004) as described in BLM's National Sage-grouse Habitat Conservation Strategy (WO-IM-2005-024) would be implemented.

Necessary vegetation information would be gathered and monitoring continued to assess if planning objectives are being met.

Invasive and non-native weed species (as identified in Table 3.56, Invasive and Noxious Weeds of San Juan County) would be controlled, and the infestation and spread of new invasive species prevented through cooperative agreements, implementing the principles in BLM weed management policies and action plans.

Poisonous plant species would be controlled as necessary based on site-specific needs.

Cooperating agreements with other federal, state, local, and private organizations would be developed to control invasive non-native species, control insect pest species, and implement fuels vegetation treatments and WUI risk assessments and management.

Vegetation treatments from Utah ROD for the 1991 Vegetation EIS [as amended by Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States PEIS (2007)] would be incorporated.

Upland areas would be managed to achieve DFC.

Unnecessary social trails would be minimized throughout the PA.

Pack stock and riding stock users on BLM-administered land would be required to use certified weed-free feed.

Restoration/rehabilitation activities would be required to use certified weed-free seed mixes, mulch, fill, etc.

The power washing of equipment used for permitted uses may be required to help control noxious weeds.

MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES

Implement 30,000 to 50,000 acres of vegetation treatments in Fire Regime Condition Class III areas over a 15-year period.

The following sagebrush communities would be prioritized for treatment: Harts Draw, Beef Basin, Black Mesa, Alkali, Mustang, Cedar Point, Shay Mesa, and all areas with Gunnison sage-grouse habitat.

Treat greasewood in Comb Wash, Butler Wash, Montezuma, East Canyon, Indian Creek, South and North Cottonwood Wash, and Cross Canyon to improve ground cover, biodiversity, and water quality.

Alternative A (No Action)	Alternative B	Alternative C (Preferred)	Alternative D	Alternative E
Maintain existing land treatments and provide new land treatments; apply RMP stipulations and special conditions through NEPA documentation (232,130 acres).	Maintain an estimated 1,000 acres/year of existing land treatments and implement new vegetation treatments to restore ecosystem health, functioning condition, etc. in the following vegetation cover types: • sagebrush 1,000 acres/year • weed treatments 3,000 acres/year • pinyon-juniper 2,000 acres/year • riparian 500 acres/year • greasewood 100 acres/year	Maintain an estimated 1,500 acres/year of existing land treatments and implement new vegetation treatments to restore ecosystem health, functioning condition, etc. in the following vegetation cover types: • sagebrush 1,500 acres/year • weed treatments 3,000 acres/year • pinyon-juniper 3,000 acres/year • riparian 100 acres/year • greasewood 200 acres/year	Maintain an estimated 2,000 acres/year of existing land treatments and implement new vegetation treatments to restore ecosystem health, functioning condition, etc. in the following vegetation cover types: • sagebrush 2,000 acres/year • weed treatments 3,000 acres/year • pinyon-juniper 4,000 acres/year • riparian 100 acres/year • greasewood 200 acres/year	Same as Alternative B except for non-WSA lands with wilderness characteristics would be managed as unavailable for mineral leasing, closed to OHV use, proposed for withdrawal from mineral entry, right-of-way exclusion area, unavailable for disposal of mineral materials, unavailable for private and commercial woodland harvest, and managed as VRM Class I, Land treatments would be maintained with non-surface disturbing techniques.

Table 2.1. Summary Table of Alternatives

VISUAL RESOURCE MANAGEMENT (VRM)

GOALS

Designate VRM classes.

Manage activities consistent with VRM Management Class objectives.

MANAGEMENT COMMON TO ALL ALTERNATIVES

All permitted activities would have to comply with VRM management class objectives, unless a waiver, exemption, or modification is granted by the Authorized Officer.

WSAs would be managed as VRM Class I.

Allow for recreational viewing platforms and special recreation facilities in all high scenic areas.

VRM classifications need to match Minimum Impact Criteria.

MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES

Visual resources would be managed as the VRM inventory class (see Maps 55–59) unless specified otherwise in the management prescriptions.

In areas available for oil and gas leasing subject to standard lease terms or available to oil and gas leasing subject to Timing and CSU, visual resources would be managed as VRM Class III or IV (depending on inventory) unless otherwise specified in the management prescriptions.

Areas that inventory as VRM Class II but are in areas that are available for oil and gas leasing subject to standard lease terms or available to oil and gas leasing subject to Timing and Controlled Surface Use would be managed as VRM Class III unless otherwise specified in the management prescriptions below.

Wild segments of a WSR would be managed as VRM Class I.

Scenic segments of a WSR would be managed as VRM Class II.

Recreation segments of a WSR would be managed as the same VRM class as surrounding land.

High-volume film areas should be visually protected for filming. Actions would be mitigated to reduce visual impacts in those areas. Visual Impact analysis would use GIS technology.

(Lists below are not meant to be inclusive – See Maps 55-59 and Matrix)

Alternative A (No Action)	Alternative B	Alternative C (Preferred)	Alternative D	Alternative E
371,575 acres would be managed as VRM Class I. • The Monticello FO manages 13 wilderness study areas (387,410 acres): Mancos Mesa (51,440 acres), Grand Gulch ISA Complex (37,810), Road Canyon (52,420), Fish Creek Canyon (46,440), Mule Canyon (5,990), Cheesebox Canyon (15,410), Dark Canyon ISA Complex (62,040), Butler Wash (22,030), Bridger Jack Mesa (5,290), Indian Creek (6,870), South Needles (160), Squaw and Papoose Canyons (6,560), Cross Canyon (1,000). • Castle Creek, Horse Pasture, and Steer Pasture • Moqui Canyon; south end of Mancos Mesa • Scenic Highway Corridor ACEC to the intersection with Natural Bridges	497,668 acres would be managed as VRM Class I. • WSAs (same as Alternative A) Potential ACECs: • Butler Wash North • Dark Canyon • Lockhart Basin • Valley of the Gods • Indian Creek • San Juan River sections 3 and 5 WSRs: • Dark Canyon WSR • Colorado Number 3	425,179 acres would be managed as VRM Class I. • WSAs (same as Alternative A) Potential ACECs: • Valley of the Gods • Indian Creek • San Juan River sections 3 and 5 WSRs: • Dark Canyon WSR • Colorado River Number 3	390,424 acres would be managed as VRM Class I. • WSAs (same as Alternative A)	998,370 acres would be managed as VRM Class I. • WSAs (same as Alternative A) Non-WSA lands with wilderness characteristics: (Total acres 582,360), Arch Canyon (50), Bridger Jack Mesa (23050), Butler Wash (1660), Cheesebox Canyon (13240), Comb Ridge (13,760), Cross Canyon (1350), Dark Canyon (66330), Fish and Owl Creeks (24650), Fort Knocker Canyon (12410), Gooseneck (3570), Grand Gulch (55240), Gravel and Long Canyons (36890), Hammond Canyon (4700), Harmony Flat (9660), Harts Point (24740), Hatch Lockhart (1760), Indian Creek (23260), Lime Creek (5560), Mancos Mesa (61570), Nokai Dome (94270), Red Rock Plateau (17010), Road Canyon (11320), San Juan River (14340), Shay Mountain (6710), Sheep Canyon (4000), Squaw and Papoose Canyon (3570), Upper Red Canyon (24920), Valley of the Gods (13670), White Canyon (9080)
355,112 acres would be managed as VRM Class II. • Sweet Alice South/Ruin Canyon • North of Highway 95 in the Comb Ridge Area • South Cottonwood, east of Black Mesa Road • Clay Hill's Crossing (west end to state land) and the southern polygon (as shown on Map 55) • Highway 276 National Bridges area east, and southwest of UT 95 and 261 junction. • Mesa shoulders for Tables of the Sun	250,641 acres would be managed as VRM Class II. • Castle Creek, Horse Pasture, and Steer Pasture Potential ACECs: • Bridger Jack Mesa • Lavender Mesa • Shay Canyon • San Juan River section 1 • Colorado River #2 WSRs: • Colorado Number 2 • Fable Valley	132,001 acres would be managed as VRM Class II. Potential ACECs: • Lavender Mesa • Shay Canyon • San Juan River (portions) WSRs: • Colorado River Number 2. • Southern boundary of Indian Creek east to rims is the northern boundary, and the southern boundary is Forest Service northern boundary. On the east, the canyon rims then west to Highway 211.	8,838 acres would be managed same as VRM Class II. • San Juan River (portions)	111,478 acres would be managed same as VRM Class II. • Castle Creek, Horse Pasture, and Steer Pasture Potential ACECs: • Bridger Jack Mesa • Lavender Mesa • Shay Canyon • San Juan River section 1 • Colorado River Number 2 WSRs • Colorado Number 2 • Fable Valley

Table 2.1. Summary Table of Alternatives

		• Castle Creek, Horse Pasture, and Steer Pasture. • Old Scenic Highway Corridor ACEC (from west to east) to the intersection with Natural Bridges. • Comb Ridge south of Highway 95, except for proposed campgrounds and Butler Wash OHV area. • Highway 276 to Clay Hills Crossing (as shown on Map 57). • Mesa tops for Tables of the Sun.		
416,806 acres would be managed as VRM Class III. • Southern boundary of Indian Creek east to rims is the northern boundary, and the southern boundary is Forest Service northern boundary. On the east the canyon rims then west to Highway 211. • Arch Canyon.	426,350 acres would be managed as VRM Class III. Potential ACECs: • Alkali Ridge. • Cedar Mesa (outside of WSAs). • Hovenweep. • San Juan River sections 2 and 4. WSRs: • Colorado River Number 1 • Indian Creek • Arch Canyon • San Juan River sections 1, 2, and 4	531,920 acres would be managed as VRM Class III. Potential ACECs: • Hovenweep • San Juan River sections 2 and 4 • Cedar Mesa (C-SRMA) portions • Lockhart Basin • Sweet Alice South / Ruin Canyon • Moqui Canyon • Bridger Jack Mesa from mesa top to ATV trails/roads on west, north, and sides, and on the east to the private land boundary. • Shay Mesa (119 acres) and areas for proposed campgrounds, parking lots and associated facilities. • North of Highway 95 in the Comb Ridge Area • South Cottonwood east of Black Mesa Road. • Clay Hill's Crossing (west end to state land), and the southern polygon (as shown on Map 57) southwest of D2621 and D3514. • Highway 276 National Bridges area east, and southwest of UT 95 and 261 junction. • Portions of Cedar Mesa area. • Tables of the Sun-shoulders of the mesa.	692,741 acres would be managed as VRM Class III. • Castle Creek, Horse Pasture, Steer Pasture • Sweet Alice South/Ruin Canyon • Moqui Canyon, south end of Mancos Mesa • North of Highway 95 in the Comb Ridge area • South Cottonwood, east of Black Mesa Road. • Clay Hill's Crossing (west end to state land) and the southern polygon (as shown on Map 58). • Highway 276 National Bridges area east, and southwest of UT 95 and 261 junction. • Shoulders of the mesa of Tables of the Sun • Southern boundary of Indian Creek east to rims is the northern boundary, and the southern boundary is Forest Service northern boundary. On the east the canyon rims then west to Highway 211. • Comb Ridge south of Highway 95 except for proposed campgrounds and Butler Wash OHV area. • Old Scenic Highway Corridor ACEC (from west to east) to the intersection with Natural Bridges. • Arch Canyon.	264,369 acres would be managed as VRM Class III. Potential ACECs: • Alkali Ridge • Cedar Mesa (outside of WSAs) • Hovenweep • San Juan River sections 2 and 4 WSRs: • Colorado River Number 1. • Indian Creek. • Arch Canyon. • San Juan River sections 1, 2, and 4.
637,875 acres would be managed as VRM Class IV.	608,463 acres would be managed as VRM Class IV.	693,995 acres would be managed as VRM Class IV. • Portions of Cedar Mesa areas as inventoried. Potential ACECs: • Alkali Ridge.	691,119 acres would be managed as VRM Class IV.	407,459 acres would be managed as VRM Class IV.

WILDLIFE AND FISHERIES RESOURCES

GOALS

Maintain, protect, and enhance habitats to support natural wildlife diversity, reproductive capability, and a healthy, self-sustaining population of wildlife and fish species.

Recognize crucial and non-fragmented habitats as management priorities.

Maintain or improve vegetation condition and/or avoid long-term disturbance in habitat sites for wildlife and fish species.

Minimize long-term habitat fragmentation as much as possible through avoidance and site-specific reclamation to provide habitat quality and quantity adequate to fulfill the life history requirements and to support a natural diversity of species.

Maintain and enhance aquatic and wildlife resources, and provide for biological diversity of plants and wildlife resources while ensuring healthy ecosystems.

MANAGEMENT COMMON TO ALL ALTERNATIVES

Migratory Birds

Comply with the Migratory Treaty Bird Act and implement the Executive Order 13186 ("Responsibilities of Federal Agencies to Protect Migratory Birds") during all activities to protect habitat for migratory birds. Management would emphasize birds listed on the current USFWS "Birds of Conservation Concern" (2002 or as updated) and Partners-in-Flight priority species (as updated). As specific habitat needs and population distribution to Birds of Conservation Concern and Partners-in-Flight priority species the Partners-In-Flight Avian Conservation Strategy (UDWR, 2000, as updated) priority species are identified, BLM would use adaptive management strategies to further conserve habitat and avoid impacts to these species.

During nesting season for migratory birds (May 1–July 30), avoid surface-disturbing activities and vegetative-altering projects and broad-scale use of pesticides in identified occupied priority migratory bird habitat.

Prioritize the maintenance and/or improvement of lowland riparian, wetlands, and low and high desert scrub communities, which are the four most important and used habitat types by migratory birds in the Monticello PA.

Prevent the spread of invasive and non-native plants, especially cheatgrass, saltcedar, and Russian olive. Strive for a dense understory of native species with a reduction in salt cedar and improvement of cottonwood and willow regeneration.

Table 2.1. Summary Table of Alternatives

As a supplement to comply with Executive Order 13186, the Bird Habitat Conservation Areas identified in the Coordinated Implementation Plan for Bird Conservation in Utah (2005, or as updated), would receive priority for conducting bird habitat conservation projects through cooperative funding initiatives such as the Intermountain West Joint Venture.

Raptors

Raptor management would be guided by the use of Best Management Practices for Raptors and Their Associated Habitats in Utah (Utah BLM, 2006, Appendix M), utilizing seasonal and spatial buffers, as well as mitigation, to maintain and enhance raptor nesting and foraging habitat, while allowing other resource uses.

Cooperate with utility companies, UDWR, and USFWS to prevent electrocution of raptors.

Temporarily close areas (amount of time depends on species) near raptor nests to rock climbers or other activities if activity may result in nest abandonment.

Bighorn Sheep

Five mesa tops (56,740 acres) within the crucial bighorn sheep habitat have been identified as areas of potential conflict between bighorn and activities that cause surface disturbance resulting in permanent loss of bighorn sheep habitat. Bighorn sheep habitat improvement projects would be prioritized in these areas.

On-site mitigation would be required for projects that disturb or remove forage and browse species used by desert bighorn sheep; the purpose of the mitigation would be to replace the forage lost. Livestock grazing and associated range improvement projects would not be allowed on the five mesa tops.

Any future proposal for a change in kind of livestock from cattle to sheep in crucial desert bighorn sheep habitat would be denied in order to prevent competition for forage and the transmission of disease from domestic to wild sheep.

Adhere to the recommendations in the BLM Bighorn Sheep Rangeland Management Plan (BLM 1993c, as revised); and the Utah BLM Statewide Desert Bighorn Sheep Management Plan, 1996 (as revised), where practicable.

Introduction, Transplantation, Augmentation, and Reestablishment

BLM would continue to cooperate with and provide support to UDWR in reintroducing native fish and wildlife species into historic or suitable ranges, as determined appropriate through case-by-case NEPA analysis.

Introduction, transplantation, augmentation, and re-establishment of both native and naturalized species would be considered and would include but may not be limited to pronghorn, desert bighorn sheep, wild turkey, beaver, chukar, Colorado River cutthroat trout, and Endangered Colorado River fish species.

Animal Damage Control

Predator management would continue to be coordinated with APHIS and UDWR, and would be conducted utilizing the guidance provided by the existing MOU with APHIS.

Habitat Improvements and Protection

In areas lacking proper water distribution or natural water sources, allow for installation of precipitation catchments (guzzlers) or the development of springs on rangelands.

Adhere to BLM fence standards to allow wildlife movement when fences are being developed or maintained.

Wildlife habitat objectives would be considered in all reclamation activity. Priority would be given to meeting Standards for Rangeland Health and Guidelines for Grazing Management (BLM 1997).

Adhere to the recommendations in the BLM Habitat Management Guides for the American Pronghorn Antelope (1980 as revised), wherever practicable.

Ground-disturbing and permitted activities carried out in all seasonal wildlife protection areas would be subject to special conditions regulating use during certain seasons. These seasonal conditions would not impact maintenance and operation activities for mineral production or hunting during a recognized hunting season established by the UDWR.

Recognize 17,300 acres as allotted to wildlife (parts of the slopes of Peter's Canyon and East Canyon).

Ground-disturbing actions in crucial habitats would be avoided where practical. Where unavoidable disturbances are required, BLM would follow BLM Washington Office Guidance (IM 2005-069) on application of compensatory measures.

In all seasonal wildlife protection areas, the Field Manager may grant exceptions on a case-by case basis during any year if it can be shown that 1) legal rights would be curtailed; 2) the animals are not present in the specific project location; or 3) the activity can be conducted so as not to adversely impact the animals.

Seasonal Wildlife Protection Areas

In addition to any other special conditions that may be in effect, crucial big game habitats are subject to special conditions regulating use during certain seasons. These seasonal conditions would not impact maintenance and operation activities for mineral production or hunting during a recognized hunting season established by the UDWR. The Area Manager may grant exceptions on a case-by-case basis during any year if it can be shown that 1) legal rights would be curtailed; 2) the animals are not present in a specific project location; or 3) the activity can be conducted so as not to adversely impact the animals.

Alternative A (No Action) (see rows below for species)	Alternative B (see rows below for species)	Alternative C (Preferred) (see rows below for species)	Alternative D (see rows below for species)	Alternative E (see rows below for species)
Unspecified.	Special conditions for the seasonal wildlife protection areas include the following: • All land use authorizations, with the exception of woodland harvest, would be required to conform to seasonal, noise, and disturbance restrictions outlined below. Closed to the following uses during the established season: ▪ No oil and gas exploration, drilling and production activities or geophysical work. ▪ No permitted or commercial OHV use. ▪ No use of pyrotechnics, shooting, etc. during permitted filming because of noise impacts. ▪ No use of low-flying aircraft.	Same as Alternative B, except: • Permitted or commercial OHV use may be limited in number of participants and duration depending on the event.	Same as Alternative B, except: • All land use authorizations, with the exception of woodland harvest, would be required to conform to seasonal and noise and disturbance restrictions outlined below.	Same as Alternative B.

Table 2.1. Summary Table of Alternatives

Bighorn Sheep Lambing and Rutting Areas Part of the 329,750-acre bighorn crucial habitat area falls in ROS classes P and SPNM. The following special conditions are in addition to the ROS special conditions, which take precedence. Crucial bighorn sheep habitat would be closed to certain surface uses during the lambing season (April 1–July 15) and the rutting (mating) season (October 15–December 31). During these periods, no oil and gas leasing activities, geophysical work, or OHV use may take place. Mining activities during these periods would require an approved plan of operations. Any future proposal for a change in kind of livestock from cattle to sheep in crucial desert bighorn sheep habitat would be denied in order to prevent competition for forage and the transmission of disease from domestic to wild sheep.	Adhere to special conditions (above) on 453,388 acres from April 1 to July 15 for lambing, and from October 15 to December 31 for rutting.	Adhere to special conditions (above) on 415,395 acres from April 1 to June 15 for lambing, and on 453,390 acres from October 15 to December 15 for rutting.	Adhere to special conditions (above) on 299,009 acres from April 1 to June 15 for lambing, and October 15 to December 15 for rutting.	Same as Alternative B.
Pronghorn Fawning Area The antelope crucial habitat area would not subject to the ROS special conditions. Use within the 12,960-acre crucial antelope habitat would be closed to certain surface uses during the fawning season (May 15–June 15). During this period, no oil and gas leasing activity, geophysical work, or OHV use may take place. Mining activities during this period would require an approved plan of operations.	Adhere to special conditions (above) on 29,365 acres from May 1 to June 15.	Adhere to special conditions (above) on 29,365 acres from May 1 to June 15.	Adhere to special conditions (above) on 13,961 acres from May 1 to June 15.	Same as Alternative B.
Grazing Management in Pronghorn Ranges No current prescription.	Spring grazing (April 15–June 15) would be eliminated in allotments within antelope habitat and livestock utilization levels would not exceed 50% or current year's growth to encourage forb production and provide adequate cover for newborn fawns. This would include the following grazing allotments: Mail Station, Upper Mail Station, Dry Valley/Deer Neck, Lone Cedar, Tank Draw, and Hart Draw.	Current livestock-grazing prescriptions would continue and, where opportunities exist, would be adjusted to enhance forb production on pronghorn ranges. This would include the following grazing allotments: Mail Station, Upper Mail Station, Dry Valley/Deer Neck, Lone Cedar, Tank Draw, and Hart Draw.	Prescriptive livestock grazing would be used to favor forb production on pronghorn ranges. This would include the following grazing allotments: Mail Station, Upper Mail Station, Dry Valley/Deer Neck, Lone Cedar, Tank Draw, and Hart Draw.	Same as Alternative B.
Deer Winter Range Part of the deer crucial winter range areas fall in ROS class SPNM. The following special conditions are in addition to the ROS special conditions, which take precedence. Use within the 197,550-acre crucial deer winter habitat areas would be closed to certain surface uses during periods of critical winter use (December 15–April 30). During this period, no oil and gas leasing activities, geophysical work, or OHV use may take place. Mining activities during this period would require an approved plan of operations. Certain sagebrush parks within crucial deer winter range areas (9,800 acres) have been identified as providing a concentrated food source for wintering deer. Large-scale sagebrush removal could cause a substantial loss of winter forage. The areas fall within various ROS classes; the following special conditions, which take precedence, are in addition to the ROS special conditions: Land treatments would be considered on a case-by-case basis.	Adhere to special conditions (above) on 785,921 acres from November 1 to May 15.	Adhere to special conditions (above) on 266,406 acres from November 15 to April 15.	Adhere to special conditions (above) on 182,315 acres from December 1 to April 15.	Same as Alternative B.

Table 2.1. Summary Table of Alternatives

Elk Winter Range No identified crucial elk habitat.	Adhere to special conditions (above) on 191,173 acres from November 1 to May 15.	Adhere to special conditions (above) on 97,471 acres from November 15 to April 15.	Adhere to special conditions (above) on 62,484 acres from December 1 to April 15.	Same as Alternative B.
WOODLANDS				
GOALS Manage woodlands for DFC, ensuring ecological diversity, stability, and sustainability (including the desired mix of structural stages and landscape/watershed functions), and provide for native plant and wildlife habitats. Provide woodland products on a sustainable basis to meet local needs where such use does not limit the accomplishment of goals for the management of other resources. Provide opportunities for pine nut gathering on a sustainable basis while protecting other resources. Encourage, where feasible, the harvest of woodland products in areas of proposed or existing vegetative treatments to lessen the need for additional treatment or land disturbance, and in areas that need restoration for ecological benefits (for example, *Pinus edulis*). Use the document, "Recommended Old-Growth Definitions and Description, USDA Forest Service Southwestern Region (Sept. 1992)." Identify, maintain, and restore forest and woodland old-growth stands to a pre-fire suppression condition. The Monticello FO would adopt the USFS old growth definitions and identification standards as per the USFS document "Characteristics of Old-Growth Forests in the Intermountain Region (April 1993)" in instances where the area of application in the previous document doesn't apply (for example, pinyon pine).				
MANAGEMENT COMMON TO ALL ALTERNATIVES Implement the Healthy Forest Initiative and the Healthy Forest Restoration Act of 2003. Follow National BLM Forest Health and Forest Management Standards and Guidelines to assess conditions and guide management decisions for woodland resources. Prioritize treatment in high-value/high-risk areas (WUI, developed recreation facilities including campgrounds, FRCC III). Allow live woodland harvest in areas with pinyon pine and juniper encroachment with focus on sagebrush steppe community. Fuel treatment projects would allow for harvest of woodland products. The Field Manager may approve exceptions to these specific management prescriptions on a case-by-case basis if sufficient justification exists to show the prescription is not needed (e.g., granting an exception to a seasonal use requirement if a protected wildlife species is not using crucial habitat in a specific year). Permits for private and/or commercial use of woodland products would continue to be issued to the public, consistent with the availability of woodland products and the protection of other resource values. Cottonwood and willow harvest would be allowed for Native American ceremonial uses only. Restrictions on harvest would be implemented as necessary to achieve or maintain PFC, and maintain or improve TES/SSS habitat. Harvest would be administered under a permit system.				
MANAGEMENT COMMON TO ALL ACTION ALTERNATIVES Harvest woodland products (per table below) subject to the following exceptions: • Exclude from woodland product use except for limited on-site collection of dead wood for campfires in all WSAs, Arch Canyon, Alkali Ridge NHL, Grand Gulch NHD (mesa top), Beef Basin, Fable Valley, Comb Ridge CSRMA (south of Highway 95), San Juan River SRMA. • Exclude floodplains, riparian/aquatic areas from woodland product use except for limited on-site collection of driftwood for campfires, and uses for Native American ceremonial purposes as determined on site specific basis. Cottonwood and willow harvest would be allowed for Native American ceremonial uses only. Restrictions on harvest would be implemented as necessary to achieve or maintain PFC, and maintain or improve TES/SSS habitat. Harvest would be administered under a permit system. • Exclude from all woodland product use, including on-site collection of dead wood for campfires, all developed recreation sites, livestock/wildlife exclosures, and cultural sites, Indian Creek Corridor, McLoyd Canyon-Moon House Ruin, Grand Gulch Plateau CSRMA (in-canyon), Grand Gulch NHD (in canyon). • Limitations on off-road travel for wood gathering would be modified as necessary to maintain long-term sustainability or facilitate wood gathering where resource impacts are not a concern. • Permits would be limited and/or areas closed, as necessary, to maintain sustainability and protect resources.				
Alternative A (No Action)	**Alternative B**	**Alternative C (Preferred)**	**Alternative D**	**Alternative E**
Zones in Field Office *considered* for private and/or commercial use of woodland products: East Canyon; Harts Draw; Salt Creek Mesa; Dark Canyon Plateau; White Canyon; Cedar Mesa; North Comb Ridge; South Cottonwood; and Montezuma Watershed (Maps 77–80). Areas *not* identified in zones below would be unavailable for private and/or commercial use of woodland products. However, pinyon pine nut gathering would not be restricted. For Alternative E, all non-WSA lands with wilderness characteristics will not be available for woodland product use in Alternative E.				
East Canyon Zone was not addressed in the 1991 San Juan Resource Area RMP, as amended.	**East Canyon (64,559 acres)** Available to private and/or commercial use of woodland products with permitted off-road travel within 150 feet of designated routes to collect wood.	**East Canyon (64,559 acres)**	**East Canyon (64,559 acres)**	**East Canyon (64,559 acres)**
	Peter's Point Seasonal restriction on private and/or commercial use of woodland products in the deer and elk winter range from November 1 to May 15.	**Peter's Point** Available to private and/or commercial use of woodland products with permitted off-road travel to collect wood.	**Peter's Point** Available to private and/or commercial use of woodland products with permitted off-road travel to collect wood.	Same as Alternative B.
	Big Indian, East Canyon, Peters Canyon Available to private and/or commercial use of woodland products with permitted off-road travel to collect wood.	**Big Indian, East Canyon, Peters Canyon** Available to private and/or commercial use of woodland products with permitted off-road travel to collect wood.	**Big Indian, East Canyon, Peters Canyon** Available to private and/or commercial use of woodland products with permitted off-road travel to collect wood.	Same as Alternative B.

Table 2.1. Summary Table of Alternatives

	NE of Monticello, South Canyon Available to private and/or commercial use of woodland products with permitted off-road travel to collect wood.	**NE of Monticello, South Canyon** Available to private and/or commercial use of woodland products with permitted off-road travel to collect wood.	**NE of Monticello, South Canyon** Available to private and/or commercial use of woodland products with permitted off-road travel to collect wood.	Same as Alternative B.
Harts Draw Zone was not addressed in the 1991 San Juan Resource Area RMP, as amended.	**Harts Point, Harts Draw, Shay Mesa, Photograph Gap/ Lone Cedar 64,671 Acres** Seasonal restriction on private and/or commercial use of woodland products in the deer and elk winter range from November 1 to May 15, and antelope fawning habitat from April 15 to June 30.	**Harts Point, Harts Draw, Shay Mesa, Photograph Gap/ Lone Cedar 64,671 Acres** Available to private and/or commercial use of woodland products with permitted off-road travel within 150 feet of designated routes to collect wood.	**Harts Point, Harts Draw, Shay Mesa, Photograph Gap/ Lone Cedar 64,671 Acres** Available to private and/or commercial use of woodland products with permitted off-road travel to collect wood.	**Harts Draw 51,743 Acres** Same as Alternative B.
Salt Creek Mesa Zone was not addressed in the 1991 San Juan Resource Area RMP, as amended.	**Salt Creek Mesa 5,271 Acres** Seasonal restriction on private and/or commercial use of woodland products in the deer and elk winter range from November 1 to May 15.	**Salt Creek Mesa 5,271 Acres** Available to private and/or commercial use of woodland products with permitted off-road travel to collect wood.	**Salt Creek Mesa 5,271 Acres** Available to private and/or commercial use of woodland products with permitted off-road travel to collect wood.	**Salt Creek Mesa 5,136 Acres** Same as Alternative B.
Dark Canyon Plateau Zone was not addressed in the 1991 San Juan Resource Area RMP, as amended.	**Dark Canyon Plateau 23,288 Acres** Seasonal restriction on private and/or commercial use of woodland products in the deer and elk winter range from November 1 to May 15.	**Dark Canyon Plateau 23,288 Acres** Available to private and/or commercial use of woodland products with permitted off-road travel within 150 feet of designated routes and permitted off-road travel in chained areas to collect wood.	**Dark Canyon Plateau 23,288 Acres** Available to private and/or commercial use of woodland products with permitted off-road travel to collect wood.	**Dark Canyon Plateau 2,015 Acres** Same as Alternative B.
White Canyon Zone was not addressed in the 1991 San Juan Resource Area RMP, as amended.	**White Canyon (255,267 acres)** **Wooden Shoe, Deer Flat, Horse Flat, extending out towards Jacob's Chair, Pinyon Point** Seasonal restriction on private and/or commercial use of woodland products in the deer and elk winter range from November 1 to May 15, and Bighorn sheep lambing and rutting areas from October 15 to December 31, and April 1 through July 15. **Moss Back** Available to private and/or commercial use of woodland products with permitted off-road travel within 150 feet of designated routes to collect wood. **Grand Flats** Seasonal restriction on private and/or commercial use of woodland products in the deer and elk winter range November 1 to May 15, and in bighorn sheep habitat from April 1 through July 15.	**White Canyon (255,267 acres)** **Wooden Shoe, Deer Flat, Horse Flat, extending out towards Jacob's Chair, Pinyon Point** Available to private and/or commercial use of woodland products with permitted off-road travel within 150 feet of designated routes and permitted off-road travel in chained areas to collect wood. **Moss Back** Available to private and/or commercial use of woodland products with permitted off-road travel within 150 feet of designated routes to collect wood. **Grand Flats** Available to private and/or commercial use of woodland products with permitted off-road travel within 150 feet of designated routes to collect wood.	**White Canyon (255,267 acres)** **Wooden Shoe, Deer Flat, Horse Flat, extending out towards Jacob's Chair, Pinyon Point** Available to private and/or commercial use of woodland products with permitted off-road travel to collect wood. **Moss Back** Available to private and/or commercial use of woodland products with permitted off-road travel to collect wood. **Grand Flats** Available to private and/or commercial use of woodland products with permitted off-road travel to collect wood.	**White Canyon (177,587 acres)** Same as Alternative B. Same as Alternative B. Same as Alternative B.
Cedar Mesa Zone was not addressed in the 1991 San Juan Resource Area RMP, as amended.	**Cedar Mesa (outside of WSA)(0 Acres)** Closed.	**Cedar Mesa (outside of WSA) (65,807 acres)** Available to private and/or commercial use of woodland products, limited to designated routes, dependent on cultural Class III surveys.	**Cedar Mesa (outside of WSA) (65,807 acres)** Available to private and/or commercial use of woodland products, limited to designated routes, dependent on cultural Class III surveys.	**Cedar Mesa (outside of WSA) (0 acres)** Closed.
North Comb Ridge Zone was not addressed in the 1991 San Juan Resource Area RMP, as amended.	**North of Highway 95 (North Comb) (5,670 acres)** Available to private and/or commercial use of woodland products, limited to designated routes, dependent on cultural Class III surveys.	**North of Highway 95 (North Comb) (5,833 acres)** Available to private and/or commercial use of woodland products, limited to designated routes, dependent on cultural Class III surveys.	**North of Highway 95 (North Comb) (5,833 acres)** Available to private and/or commercial use of woodland products, limited to designated routes, dependent on cultural Class III surveys.	**North Comb Ridge (5,666 acres)** Same as Alternative B.
South Cottonwood Zone was not addressed in the 1991 San Juan Resource Area RMP, as amended.	**South Cottonwood (108,719 acres)** **Texas Flat** Seasonal restriction on private and/or commercial use of woodland products in the deer and elk winter range from November 1 to May 15.	**South Cottonwood (117,399 acres)** **Texas Flat** Available to private and/or commercial use of woodland products with permitted off-road travel within 150 feet of designated routes and permitted off-road travel in chained areas to collect wood.	**South Cottonwood (117,399 acres)** **Texas Flat** Available to private and/or commercial use of woodland products with permitted off-road travel to collect wood.	**South Cottonwood (104,017 acres)** Same as Alternative B.

Table 2.1. Summary Table of Alternatives

	Brushy Basin, Black Mesa, Little Baullies, Upper South Cottonwood Seasonal restriction on private and/or commercial use of woodland products in the deer and elk winter range from November 1 to May 15.	**Brushy Basin, Black Mesa, Little Baullies, Upper South Cottonwood** Available to private and/or commercial use of woodland products with permitted off-road travel within 150 feet of designated routes and permitted off-road travel in chained areas to collect wood.	**Brushy Basin, Black Mesa, Little Baullies, Upper South Cottonwood** Available to private and/or commercial use of woodland products with permitted off-road travel to collect wood.	Same as Alternative B.
Montezuma Watershed Zone (249,673 acres) was not addressed in the 1991 San Juan Resource Area RMP, as amended.	**Montezuma Watershed (202,630 acres)** Seasonal restriction on private and/or commercial use of woodland products in the deer and elk winter range from November 1 to May 15. Limited to designated routes, dependent on cultural Class III surveys.	**Montezuma Watershed (239,841 acres)** Available to private and/or commercial use of woodland products, limited to designated routes, dependent on cultural Class III surveys. Permitted off-road travel would be allowed only in chained areas.	**Montezuma Watershed (239,841 acres)** Available to private and/or commercial use of woodland products, limited to designated routes, dependent on cultural Class III surveys.	**Montezuma Watershed (197,753 acres)** Same as Alternative B.

2.2 SUMMARY OF IMPACTS

Table 2.2 provides a comparative summary of the environmental impacts associated with each alternative. BLM evaluated the environmental impacts that would result from the implementation of the various management decisions proposed under the five alternatives described above. Alternative A (No Action), a continuation of the existing 1991 San Juan RMP, is presented for comparison to the action alternatives.

Impacts are defined as modifications to the existing environment brought about by implementing an alternative. Impacts can be beneficial or adverse, result from the action directly or indirectly, and can be long-term, short-term, or cumulative in nature. Direct impacts are caused by the action and occur at the same time and place. Indirect impacts are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable (CEQ 1508.8). Cumulative impacts are impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (CEQ 1508.7). If impacts are not discussed, the analysis has indicated that none would occur or their magnitude would be negligible. Impacts from actions to be carried out under more than one alternative are discussed under the first applicable alternative. Cumulative impacts are discussed in Chapter 4 for all of the resources instead of under each resource section.

Table 2.2. Summary of Impacts

AIR QUALITY					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Fire Management	Short-term air quality impacts include and increase in $PM_{2.5}$ particulate and CO_2 emissions specific to the burn area and locations downwind. Long-term, direct air-quality impacts include a general increase in airborne particulate materials from the burn site as a result of ash dispersion and transport.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Minerals and Energy Resources	Impacts of mineral extraction management decisions on air quality under Alternative A would maintain existing levels of use without additional constraints and not exceed NAAQS.	Impacts of mineral extraction management decisions under Alternative B would result in a reduction of approximately 9% in opportunities for oil and gas extraction as compared to Alternative A, with impacts on NAAQS similar to or slightly lower than Alternative A.	Impacts of mineral extraction management decisions under Alternative C would result in an increase of approximately 1% in opportunities for oil and gas extraction as compared to Alternative A, with impacts on NAAQS similar to Alternative A.	Impacts of mineral extraction management decisions under Alternative D would result in an increase of approximately 1% in opportunities for oil and gas extraction as compared to Alternative A, with impacts on NAAQS similar to Alternative A.	Impacts of mineral extraction management decisions under Alternative E would result in a reduction of approximately 26% in opportunities for oil and gas extraction as compared to Alternative A, with impacts on NAAQS similar to or lower than Alternative A.
Recreation	Minor, short-term, adverse air quality impacts from OHVs, automobiles, and other combustion exhaust sources. Projected air quality constituents of concern specific to recreational use would include particulate matter (PM_{10} and $PM_{2.5}$),	Impacts to air quality resulting from Alternative B would be less than Alternative A due to additional constraints on motorized recreation.	Under Alternative C, recreation management decisions would result in minor additional constraints to motorized vehicle use as compared to Alternative A. Adverse impacts to air quality similar to Alternative A.	Under Alternative D, recreation management decisions would result in minor additional constraints to motorized vehicle use as compared to Alternative A. Adverse impacts to air quality similar to Alternative A.	Under Alternative E, recreation management decisions would result in additional constraints to motorized vehicle use as compared to Alternative A, specifically for areas that contain non-WSA areas with wilderness characteristics. Adverse impacts to air quality

AIR QUALITY					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	hydrocarbons and combustion by-products. Long-term, beneficial impacts from prescriptions that improve road surfaces, limit vegetation disturbances, and reduce OHV and other vehicle use.				similar to or slightly smaller than Alternative A.

CULTURAL RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Cultural Resources	Long-term, adverse impacts to cultural resources from of the lack of restrictions on surface disturbance, OHV use, and other recreational uses, but with beneficial impacts from protection of high site-density areas on 37,433 acres in Grand Gulch Special Emphasis Area.	Same impacts as Alternative A, except additional beneficial impacts on 98,348 acres of high site-density areas from special protection of cultural resources. Long term, beneficial impacts from limiting OHV use to designated routes.	Same impacts as Alternative B.	Same impacts as Alternative B.	Same as Alternative B, except additional beneficial impacts from protection of 582,357 acres of non-WSA lands with wilderness characteristics,
Fire Management	Potential for negligible to minor adverse impacts on cultural resources from wildland fire on 33,556 acres of high and moderate site-density. Negligible impacts on cultural resources from restrictions on fuels reduction treatments within NRHP-eligible sites.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

CULTURAL RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Health and Safety	Minor, adverse, long term impacts to historic mine structures from AML site remediation.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Livestock Grazing	Improved stability of cultural sites in the Comb Wash side canyons from grazing unavailability. Long-term, adverse impacts to cultural resources outside of these areas (90% of areas with high site-density and 94% with moderate site density) where sites may be impacted by livestock trampling or brushing against structures and/or rock art.	Improved stability of cultural sites from grazing unavailability in selected allotments. Long-term, moderately beneficial impacts from grazing restrictions. Potential long-term adverse impacts outside of these areas where sites may be impacted by livestock trampling.	Same impacts as Alternative B.	Same impacts as Alternative A,	Same as Alternative B.
Mineral and Energy Resources	Potential long-term, adverse impacts within 417 acres of high site density lands and 313 acres of medium site density lands. Adverse impacts from geophysical exploration on 886 acres.	Same impacts as Alternative A, except that fewer acres (338 acres) in high and medium (298 acres) site density areas would potentially be disturbed by minerals development. Same geophysical impacts as Alternative A.	Same impacts as Alternative A, except that slightly fewer acres (381 acres) in high site density areas and 391 acres in medium site-density areas could be impacted by minerals development. Slightly greater geophysical impacts than Alternative A from impacts to 903 acres.	Same as Alternative A, except that slightly fewer acres (391 acres total) in high site density areas are projected for disturbance associated with minerals development. More acres (330 total) in medium site density areas are projected for disturbance under Alternative D.	Same as Alternative B, except that fewer acres (327 acres total) in high and medium (192 acres total) site density areas are projected for disturbance associated with minerals development.
Non-WSA lands with Wilderness Characteristics	Same impacts to cultural resources within these areas as discussed under other resources, as non-WSA lands with wilderness characteristics would not be protected	Same impacts to cultural resources as discussed under Alternative B resources, as non-WSA lands with wilderness characteristics would not be protected under this	Same impacts to cultural resources as discussed under Alternative C resources, as non-WSA lands with wilderness characteristics would not be protected under this	Same impacts to cultural resources as discussed under Alternative D resources, as non-WSA lands with wilderness characteristics would not be protected under this	582,357 acres protected as non-WSA lands with wilderness characteristics which does not allow surface disturbing activities or OHV access.

CULTURAL RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	under this alternative.	alternative.	alternative.	alternative.	
Paleontology	Minor to moderate, long-term, beneficial impacts from protections afforded to paleontologically sensitive geologic formations. Minor, adverse impacts to sites from fossil collection.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Recreation	Impacts are the same as described for cultural resource management decisions because of program overlap.	Impacts are the same as described for cultural resource management decisions because of program overlap.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
Riparian Resources	Negligible to minor, beneficial impacts to cultural resources from restrictions on surface-disturbing activity within riparian and floodplain areas.	Same impacts as Alternative A, except additional beneficial impacts from additional restrictions on OHV use and livestock grazing by reducing opportunities for surface disturbances.	Same impacts as Alternative B.	Same impacts as Alternative A.	Same impacts as Alternative B.
Special Designations-ACECs	**Alkali Ridge ACEC –** Long-term beneficial impacts to cultural resources within the 39,202-acre ACEC from the use of disturbance avoidance buffers around known sites. Long-term, adverse impacts from allowable surface disturbing activities in areas outside of known sites.	**Alkali Ridge ACEC –** Same as Alternative A for the 39,196-acre ACEC, but with greater long-term beneficial impacts and decreased potential for long-term adverse impacts from restrictions on surface disturbances.	**Alkali Ridge ACEC –** Same as Alternative A for this 39,196-acre ACEC, but with slightly greater long-term beneficial impacts and decreased opportunities for long-term adverse impacts from OHV travel restrictions for woodland harvesting.	**Alkali Ridge ACEC –** Same as Alternative A, but with less long-term benefits and greater potential for long-term adverse impacts because of fewer restrictions on surface-disturbing activities.	**Alkali Ridge ACEC –** Same as Alternative B.

CULTURAL RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	Bridger Jack Mesa ACEC – Long-term, beneficial impacts from protection under WSA land status.	**Bridger Jack Mesa ACEC –** Same as Alternative A.	**Bridger Jack Mesa ACEC –** Same as Alternative A.	**Bridger Jack Mesa ACEC –** Same as Alternative A.	**Bridger Jack Mesa ACEC –** Same as Alternative A.
	Butler Wash North ACEC – Same as Bridger Jack Mesa ACEC above.	**Butler Wash North ACEC –** Same impacts as Alternative A.	**Butler Wash North ACEC –** Same impacts as Alternative A.	**Butler Wash North ACEC –** Same impacts as Alternative A.	**Butler Wash North ACEC –** Same as Alternative A.
	Cedar Mesa ACEC – Long-term, beneficial impacts within 295,336-acre area from designated OHV use, specific protection of at-risk cultural resources, and areas managed for scenic quality and non-motorized uses.	**Cedar Mesa ACEC –** Long-term, beneficial impacts from limiting day use and overnight camping to protect cultural resources within 306,742-acre area.	**Cedar Mesa ACEC –** Long-term, beneficial impacts same as B, but to a lesser degree, because the ACEC would be open to dispersed camping impacts on cultural resources.	**Cedar Mesa ACEC –** Impacts same as Alternative C.	**Cedar Mesa ACEC –** Same as Alternative B.
	Dark Canyon ACEC – Long-term, beneficial impacts from protection under WSA land status.	**Dark Canyon ACEC –** Same as Alternative A.	**Dark Canyon ACEC –** Same as Alternative A.	**Dark Canyon ACEC –** Same as Alternative A.	**Dark Canyon ACEC –** Same as Alternative A.
	Hovenweep ACEC – Impacts would be same as Cedar Mesa ACEC.	**Hovenweep ACEC –** Impacts same as Alternative A.	**Hovenweep ACEC –** Impacts same as Alternative A.	**Hovenweep ACEC –** ACEC would not be established, with Increased potential for adverse, long-term impacts from minerals development, vegetation treatment projects, and recreational activities, including OHV use.	**Hovenweep ACEC –** Same as Alternative B.

CULTURAL RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	Indian Creek ACEC – Long-term beneficial impacts to cultural resources from management decisions that would limit surface disturbances and close the area to OHV use.	**Indian Creek ACEC –** Impacts same as A, except that ACEC would be reduced in area by 36%.	**Indian Creek ACEC –** Impacts same as B, except that the ACEC would be reduced in area by 71% of Alternative A.	**Indian Creek ACEC –** The ACEC would not be established, with increased potential for long-term adverse impacts to cultural resources that lie outside of WSAs from lack of specific resource protections. Beneficial impacts on cultural resources from designated OHV use.	**Indian Creek ACEC –** Same as Alternative B.
	Lockhart Basin ACEC – The area would not be managed as an ACEC. Long-term, beneficial impacts on cultural resources from VRM II surface disturbance restrictions, prohibitions on woodcutting, and closure of the area to OHV use.	**Lockhart Basin ACEC –** Impacts to resources and users same as A, but to a greater degree, from designation as a 47,783-acre ACEC and restrictions on surface disturbance under VRM I objectives.	**Lockhart Basin ACEC –** Not designated as an ACEC. Increased potential for adverse impacts from mineral leasing, livestock grazing, OHV use on designated routes in VRM III areas.	**Lockhart Basin ACEC –** Impacts same as Alternative C.	**Lockhart Basin ACEC –** Same as Alternative B.
	Lavender Mesa ACEC – Designated as a 649-acre ACEC, with long-term, beneficial impacts on cultural resources from protection of visual, cultural, and natural resources.	**Lavender Mesa ACEC –** Impacts same as Alternative A.	**Lavender Mesa ACEC –** Impacts same as Alternative A.	**Lavender Mesa ACEC –** The ACEC would not be established, with increased potential for long-term, adverse impacts from unrestricted surface-disturbing activities.	**Lavender Mesa ACEC –** Same as Alternative B.
	Shay Canyon ACEC – Management of the 3,561-acre ACEC for cultural conservation, with long-term, beneficial impacts from protective	**Shay Canyon ACEC –** Managed as a 119-acre ACEC, with long-term beneficial impacts from surface disturbance prohibitions, closed to	**Shay Canyon ACEC –** Impacts identical to Alternative B.	**Shay Canyon ACEC –** Long-term, adverse impacts on cultural resources from management under VRM III objectives, open to	**Shay Canyon ACEC –** Same as Alternative B.

CULTURAL RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	buffers around cultural resources that are eligible for the NRHP, management under VRM I conditions, exclusion of private and commercial woodland harvesting, and conditional fire suppression. Potential for long-term, adverse impacts from minerals activities, and livestock grazing. Adverse impacts from open OHV use.	camping, and grazing restrictions. Long term, beneficial impacts in areas closed or limited to OHV routes.		livestock grazing, and subject to fuels and watershed treatments.	
	San Juan River ACEC – The area would be managed as a 15,100-acre ACEC, with impacts same as the San Juan River SRMA.	**San Juan River ACEC –** Managed as a 7,590-acre ACEC, with long-term, beneficial impacts on cultural resources from actions that limit or restrict surface disturbances and provide for closure of areas to protect specific cultural sites.	**San Juan River ACEC –** Impacts the same as Alternative B.	**San Juan River ACEC –** No designation of ACEC, with impacts same as Alternative B. Greater surface disturbance would be allowable, with greater potential for long-term, adverse impacts to cultural resources.	**San Juan River ACEC –** Same as Alternative B.
	Valley of the Gods ACEC – Managed as 31,387-acre ACEC under VRM I objectives, with long term, beneficial impacts from limitations on surface disturbances. Potential for long-term adverse impacts from livestock grazing, woodland harvesting, and minerals activities, and OHV use.	**Valley of the Gods ACEC –** Managed as a 22,863-acre ACEC, with impacts same as A. Slightly increased beneficial impacts to cultural resources within the smaller ACEC from closure to woodland harvesting.	**Valley of the Gods ACEC –** Impacts same as Alternative B.	**Valley of the Gods ACEC –** No designation of an ACEC and management under VRM III would have potential for long-term, adverse impacts to cultural resources through greater allowance of surface-disturbing activities than under any other alternative.	**Valley of the Gods ACEC –** Same as Alternative B.

CULTURAL RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Special Designations-Wild and Scenic Rivers	**Wild and Scenic River – Colorado Segments** Negligible impact on cultural resources from prohibitions on surface disturbances.	**Wild and Scenic River – Colorado Segments** Long-term, beneficial impact on cultural resources from management of Segments 2 and 3 under VRM I and II, and from closure of Segment 3 to OHV use.	**Wild and Scenic River – Colorado Segments** Impacts same as Alternative B.	**Wild and Scenic River – Colorado Segments** Increased potential for long-term, adverse impacts to cultural resources from a lack of special restrictions on surface-disturbing activities.	**Wild and Scenic River – Colorado Segments** Same as Alternative B.
	Wild and Scenic – San Juan River Segments Long-term, beneficial impacts to cultural resources from management under VRM I restrictions on surface-disturbing activities.	**Wild and Scenic – San Juan River Segments** Long-term beneficial impacts on cultural resources from implementation of NSO stipulations and restrictions on mineral disposal and geophysical work.	**Wild and Scenic – San Juan River Segments** Long-term adverse impacts to cultural resources from not designating the area as suitable and subsequent increases in surface-disturbing activities.	**Wild and Scenic – San Juan River Segments** Same as Alternative C.	**Wild and Scenic – San Juan River Segments** Same as Alternative B.
	Wild and Scenic – All Other Segments Long-term adverse impacts from not evaluating river segments for suitability and not implementing restrictions on surface-disturbing activities.	**Wild and Scenic – All Other Segments** Long-term beneficial and adverse impacts from management under VRM II and III, and application of Standard or NSO oil and gas leasing stipulations.	**Wild and Scenic – All Other Segments** Long-term adverse impacts from not designating rivers segments as suitable and implementing related restrictions on surface-disturbing activities.	**Wild and Scenic – All Other Segments** Same as Alternative C.	**Wild and Scenic – All Other Segments** Same as Alternative B.
Special Designations-Wilderness Study Areas	387,410 acres would be protected to meet the non-impairment criteria of the IMP which limits surface disturbing activities and access.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

CULTURAL RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Special Status Species	Long-term beneficial impacts from spatial buffers with restrictions on surface-disturbing activities and vegetation treatments.	Impacts as Alternative A, except slightly more beneficial impacts from increased spatial buffers.	Greater long term, beneficial impacts than Alternatives A and B from increased spatial buffers.	Impacts same as Alternative A.	Impacts same as Alternative B.
Travel Management	Long-term, beneficial impacts to cultural resources on 142,008 acres of high site-density area that is closed to OHV use. Long-term adverse impacts to cultural resources on 423,619 acres open to OHV use in high site-density areas.	Long-term, beneficial impacts to cultural resources on 238,879 acres of high site density area that is closed to OHV use, and 325,669 acres of high site-density where OHV use is limited to designated routes.	Long-term, beneficial impacts to cultural resources on 234,890 acres of high site density area that is closed to OHV use and 750,153 acres limited to designated routes.	Long-term, beneficial impacts on cultural resources from limiting OHV use to designated routes on 985,043 acres in high site-density areas.	Same as Alternative B except that 474,291 acres of high site-density lands would be beneficially closed to OHV use.
Vegetation	Impacts same as Fire Management because treatments and impacts are the same.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Visual Resources	Long-term, beneficial impacts on cultural resources from protection of 395,797 acres of high site-density and 330,313 acres of medium site-density under VRM Class I and Class II designations. Potentially adverse impacts to cultural resources on lands designated as VRM Class III and IV (1,054,681 acres).	Long-term, beneficial impacts on cultural resources from management of 431,797 acres in high site-density and 315,022 acres of medium site-density under VRM Class I and II, with slightly more benefit than Alternative A. Adverse impact to cultural resources from designation of 1,034,813 acres as VRM Class III and IV.	Long-term, beneficial impacts on cultural resources from management of 324,539 acres of high site-density and 242,876 acres of medium site-density under VRM Class I and II. Slightly less beneficial impacts than Alternative A from designation of 1,225,915 acres as VRM Class III and IV.	Long-term, beneficial impacts from management of 237,057 acres of high site-density and 162,201 acres of medium site-density under VRM Class I and II designations. Slightly higher benefit than Alternative A. Long term, adverse impacts from designation of 1,383,860 acres as VRM Class III and IV.	Long-term, beneficial impacts on cultural resources from management of 565,528 acres of high site-density and 544,314 acres of medium site-density under VRM Class I and II objectives. Slightly higher benefit than Alternatives A and B. Adverse impact to cultural resources from designation of 671,828 acres as VRM Class III and IV.

CULTURAL RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Wildlife and Fisheries Resources	Negligible impacts on cultural resources from seasonal restrictions.	Same as Alternative A, but with moderate long-term, beneficial impacts from on minor restrictions on OHV use and minerals development.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
Woodlands	Long-term, direct and indirect adverse impacts to cultural resources on 464,446 acres of high site-density and 392,559 acres of medium site-density from a lack of restrictions on woodland harvesting and related OHV use.	Slightly less long-term adverse impacts than Alternative A from designating 307,179 acres in high site density areas and 504,391 acres in medium density areas as open to woodland harvesting, with limited restrictions on related OHV travel. Long-term beneficial impacts to cultural resources in areas closed to woodland harvesting, especially in the Cedar Mesa CRSMA.	Impacts same as Alternative B, from designating 367,319 acres of high site-density and 229,492 acres of medium site-density as available for woodland harvesting.	Same as Alternative C.	Similar to Alternative B, except fewer acres (241,712 total) of high site density lands and 129,498 acres of medium site-density would be open to woodland harvesting, with greater long-term beneficial impact to cultural resources from less opportunity for surface disturbances.

FIRE MANAGEMENT					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Air Quality	All prescribed burns would be in accordance with applicable air quality regulations and the Smoke Management MOU, which could impact the size and timing of fire management activities. Limitations would not substantially reduce the effectiveness of fire management or increase	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

FIRE MANAGEMENT					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	fire risk.				
Cultural Resources	Restrictions on pinyon-juniper treatments on 26,902 acres to protect cultural resources would adversely increase fuel loading, slightly increasing the risk of wildland fire.	Adverse impacts on fire management on 49,244 acres from fire management restrictions in pinyon-juniper and prohibitions on treatments in the 37,433-acre Grand Gulch Historic District to protect cultural resources. Adverse restrictions on fuels management would be second greatest under this alternative (after Alternative E).	Same types and acres of potential fire management treatments as Alternative A, but with additional beneficial impacts from additional 26,902 acres available for fire management in pinyon-juniper.	Same impacts as Alternative C.	Same impacts as Alternative B, but with slightly increased fire risk from prohibitions on treatments on 20,302 acres in Beef Basin.
Fire Management	5,000-10,000 acres per year of prescribed fire and non-fire treatments would beneficially reduce fuels and lessen wildfire severity in the long term.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Lands and Realty	Beneficial, but minor, risk reduction of accidental fire starts due to limits on the number of people and vehicles associated with filming, and on the use of pyrotechnics and explosives.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Mineral and Energy Resources	Adverse, but minor, increase in fire risks from creation of additional WUI areas.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

FIRE MANAGEMENT					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Non-WSA Lands with Wilderness Characteristics	Negligible impacts to fire management, as non-WSA lands with wilderness characteristics would not be protected (with no prohibitions on fuel load reductions and treatments.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Adversely increased risks of fire from prohibitions on treatments and fuel load reductions on 582,360 acres of non-WSA lands with wilderness characteristics
Recreation	Adverse, but minor, impacts from risks of fire along trails, in campgrounds, and from dispersed camping campfires, and increased number of WUI areas.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Special Designations	Adverse impacts from additional fuel loading that would increase the risk of wildland fire from restrictions on vegetation treatments over 386,027 acres in WSAs and 488,616 acres in ACECs (totaling 48.6% of the PA).	Adverse impacts from additional fuel loading that would increase the risk of wildland fire from restrictions on vegetation treatments over 386,027 acres in WSAs and 521,141 acres in ACECs (totaling 50.4 1% of the PA).	Reduced risks of fuel loading from fewer restrictions on treatments in ACECs (76,764 acres), with same restrictions in WSAs. (totaling 25.7% of the PA)	Restrictions on fuel treatments in 386,027 acres of WSAs would reduce fire risks in 21.4% of the PA.	Same impacts as Alternative B.

HEALTH AND SAFETY					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Health and Safety	Hazardous material heath and safety risks from mineral exploration and development on 69% of the PA open to standard and special mineral leasing stipulations.	Same as Alternative A, as 70% of PA would be at risk from minerals exploration and development.	Same as Alternative A, except 76% of PA open to standard and special leasing would create minimal additional risks to health and safety.	Same as Alternative C, as approximately 78% of PA would be open to standard and special minerals leasing stipulations, with activities that could cause risks to health and safety.	Permitted standard and special minerals leasing on 43% of PA would moderately reduce the potential risks to health and safety from minerals exploration and development activities.

LANDS AND REALTY					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Lands and Realty	Application of the minimum impact criteria for filming permits would facilitate use of public lands for this purpose while protecting other resources and meeting the resource goals and objectives of the RMP. 385,316 acres of ROW exclusion and 161,224 acres of avoidance areas would restrict ROW placement, limit future access, increase energy supply costs, or delay the availability of communication services.	Same as Alternative A. Impacts same as Alternative A, from 416,612 acres of proposed ROW exclusion areas and 125,105 acres of ROW avoidance areas.	Same as Alternative A. Same as Alternative A from 395,329 acres of ROW exclusion areas and 39,323 acres of ROW avoidance areas.	Same as Alternative A. Same as Alternative A from 386,853 acres of ROW exclusion areas and 14,175 acres of ROW avoidance areas.	Same as Alternative A. Same as Alternative A, except that an additional 582,360 acres within non-WSA lands with wilderness characteristics would also be exclusion areas for ROWs (974,463 acres of ROW exclusion, and 53,915 acres of ROW avoidance).

LIVESTOCK GRAZING					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Cultural Resources	Long term, beneficial impacts from Comb Ridge, Tank Bench, Beef Basin, and Grand Gulch National Historic District beneficially open to grazing (except Grand Gulch Canyon and associated tributaries). Minor impacts from acres unavailable to grazing within Grand Gulch Special Emphasis Area.	Same impacts as Alternative A.	Same as Alternative A	Same as Alternative A.	Same as Alternative A.

LIVESTOCK GRAZING					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Fire Management	Short-term, adverse impacts on livestock grazing in treated areas. Long-term, beneficial impacts from reduced risk of fire and improved forage productivity.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Health and Safety	Negligible impacts on livestock grazing in the short-term. Reclamation of mine sites could beneficially expand grazing opportunities in the long-term.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Lands and Realty	Land exchanges and sales could adversely decrease forage in AUMs available to livestock, but acquisitions could beneficially increase acres and AUMs available for livestock. Short-term loss of AUMs from construction activities. Long term loss of AUMs and forage acres from facility construction.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Livestock Grazing	Adverse impacts to grazing from existing and proposed areas unavailable for livestock grazing.	Same impacts as Alternative A, except additional areas would be designated as unavailable for livestock grazing.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
Minerals and Energy Resources	Surface disturbing activities on 699 total acres under this alternative could lead to	Same impacts as Alternative A, except surface disturbances would total 636 acres.	Minor, adverse impacts from surface disturbances totaling 710 acres.	Long term, adverse impacts from surface disturbances totaling 721 acres.	Same as Alternative A, except surface disturbances would total 518 acres.

LIVESTOCK GRAZING					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	long term, adverse losses of AUMs and acres available to livestock grazing.				
Non-WSA Lands with Wilderness Characteristics	Negligible impacts to livestock grazing.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Long term, beneficial impacts to livestock grazing on 582,357 acres of lands with non-WSA wilderness characteristics from no surface disturbances to vegetation, and no OHV disturbances.
Recreation	Negligible impacts from grazing prohibitions within Pearson Canyon and developed recreation sites. Beneficial impacts from allowed grazing in San Juan River SRMA and the Cedar Mesa CSRMA.	Same as Alternative A, except adverse impacts from timing restrictions in San Juan River SRMA riparian areas.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
Riparian Resources	Short term, adverse decrease in the acres and AUMs available to livestock from exclusion, seasonal closure, and forage limitations to improve riparian areas. Long-term beneficial impacts from increase in acres and/or AUMs available to livestock after riparian rehabilitation.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Soil and Water Resources	Short term and long term decreases in acres or AUMs available to livestock from mitigation to improve damaged	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

LIVESTOCK GRAZING					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	soils.				
Special Designations-ACECs	Long term, adverse impacts to grazing from unavailable acreages in ACECs.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Special Designations-Wild and Scenic Rivers	Minor impacts to livestock grazing from prohibitions or limits on livestock structure construction and fencing.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Special Designations-Wilderness	Minor impacts to livestock grazing from prohibitions or limits on livestock structure construction and fencing.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Travel Management	Long term, adverse impacts from 611,310 acres open to cross-country OHV use from noise disturbances, and reduction of vegetation/forage productivity.	Long term, beneficial impacts from reduction of noise impacts and surface disturbances to forage.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
Vegetation	Short-term, adverse impacts on livestock grazing in areas that are closed following vegetation treatments (232,130 acres). Long-term, beneficial impacts from improved forage conditions and productivity.	Same as Alternative A, but to a lesser degree from treatments on approximately 152,000 acres during life of the RMP.	Same as Alternative A, but to a lesser degree from treatments on approximately 186,000 acres during life of the RMP.	Same as Alternative A, from treatments impacts to 226,000 acres during life of the RMP.	Same as Alternative B.

MINERALS AND ENERGY RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Minerals and Energy Resources- Open to leasing	Approximately 1,238,230 acres (69.4% of BLM lands) would be beneficially open under standard and special stipulations.	Approximately 1,241,910 acres would be open under standard and special stipulations. This decision would result in a more beneficial impact to minerals resources compared to A, as 0.3% more acres would be open to leasing.	Approximately 1,348,973 acres would be open under standard and special stipulations. This decision would result in a more beneficial impact compared to A, as 8.9% more acres would be open to leasing.	Approximately 1,383,283 acres would be open under standard and special stipulations. This decision would result in a more beneficial impact compared to A, as 11.7% more acres would be open to leasing.	Approximately 758,929 acres would be open under standard and special stipulations. This decision would result in an adverse impact to minerals resources, compared to A, as 26.9% fewer acres would be open to leasing.
Minerals and Energy Resources- Oil and gas wells	An average of 73 RFD-predicted oil and gas wells would be drilled over the life of the RMP.	An average of 66 RFD-predicted oil and gas wells would be drilled over the life of the RMP, with adverse impact s compared to A, as 9.6% fewer wells would be drilled.	An average of 74 RFD-predicted oil and gas wells would be drilled over the life of the RMP, with beneficial impacts compared to A, as 1.4% more wells would be drilled.	An average of 75 RFD-predicted oil and gas wells would be drilled over the life of the RMP, with beneficial impact compared to A, as 2.7% more wells would be drilled.	An average of 54 RFD-predicted oil and gas wells would be drilled over the life of the RMP, with adverse impacts compared to A, as 26.0% fewer wells would be drilled.
Minerals and Energy Resources- Geophysical	Approximately 559 linear miles of source line would be conducted over the life of the RMP.	Approximately 507 linear miles of source line would be conducted over the life of the RMP, with long term, adverse impact s compared to A, as 10.4% fewer linear miles of source line would be conducted.	Approximately 573 linear miles of source line would be conducted over the life of the RMP, with long term, beneficial impacts compared to A, as 1.9% more linear miles of source line would be conducted.	Approximately 585 linear miles of source line would be conducted over the life of the RMP, with long term, beneficial impacts compared to A, as 4.3% more linear miles of source line would be conducted.	Approximately 380 linear miles of source line would be conducted over the life of the RMP, with long term, adverse impacts compared to A, as 32.0% fewer linear miles of source line would be conducted.
Minerals and Energy Resources- Locatable	Approximately 1,675,057 acres (93.8% of BLM lands) would be open to mineral entry.	Approximately 1,527,656 acres would be open to mineral entry. This decision would result in an adverse impact compared to A, as 8.8% fewer acres would be open.	Approximately 1,682,865 acres would be open to mineral entry. This decision would result in a beneficial impact compared to A, as 0.5% more acres would be open.	Approximately 1,739,389 acres would be open to mineral entry. This decision would result in a beneficial impact compared to A, as 3.8% more acres would be open.	Approximately 1,015,384 acres would be open to mineral entry. This decision would result in an adverse impact compared to A, as 39.4% fewer acres would be open.
Minerals and Energy Resources- Saleable	Approximately 1,389,256 acres (77.8% of BLM lands) would be open to	Approximately 1,241,906 acres would be open to mineral material disposal.	Approximately 1,358,968 acres would be open to mineral material disposal.	Approximately 1,383,277 acres would be open to mineral material disposal.	Approximately 758,931 acres would be open to mineral material disposal.

MINERALS AND ENERGY RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	mineral material disposal.	This decision would result in an adverse impact compared to A, as 10.6% fewer acres would be open.	This decision would result in an adverse impact compared to A, as 2.2% fewer acres would be open.	This decision would result in an adverse impact compared to A, as 0.4% fewer acres would be open.	This decision would result in an adverse impact compared to A, as 45.4% fewer acres would be open.
Cultural Resources-Grand Gulch Historic District	Long term, adverse impacts from closing the 37,433-acre Grand Gulch Historic District (2.1% of planning area) to mineral material disposal.	Same impacts as Alternative A, except closing the 37,388-acre Grand Gulch Historic District to geophysical exploration would have additional adverse impacts.	Same as Alternative B.	Same impacts as Alternative B, except opening the Historic District to “casual use” geophysical exploration would be less adverse than Alternative B.	Same as Alternative B.
Cultural Resources-Grand Gulch Special Emphasis Area	Long-term, adverse impacts from closing the 4,240-acre Grand Gulch SEA (0.2% of planning area) to leasing and geophysical work.	N/A	N/A	N/A	N/A
Cultural Resources-Comb Ridge	N/A	Long term, adverse impacts from closing the 38,012-acre Comb Ridge (2.1% of planning area) to mineral entry, mineral material disposal, and geophysical work, and leasing as NSO.	Same as Alternative B.	Same as Alternative A.	Impacts same to Alternative B, except the area would be closed to leasing rather than NSO. Alternative E would result in slightly more adverse impacts than Alternative B.
Cultural Resources-Tank Bench	N/A	Long term, adverse impacts from closing the 2,646-acre Tank Bench (0.1% of planning area) to mineral entry, mineral material disposal, and geophysical work, and leasing as NSO.	Long term, beneficial impacts from allowing leasing in the 2,646-acre Tank Bench (0.1% of the planning area) as open to mineral entry, mineral material disposal, and geophysical work.	Same as Alternative C.	Same as Alternative B.
Lands and Realty-Recommendations for withdrawal from mineral	Long-term, adverse impacts on approximately 132,380 acres (7.4% of	Impacts same as Alternative A, except approximately 263,467	Impacts same as Alternative A, except approximately 147,435	Impacts same as Alternative A, except approximately 47,124	Impacts same as Alternative A, except approximately 582,357

MINERALS AND ENERGY RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
entry	planning area) recommended for withdrawal from mineral entry.	acres (14.8% of PA) would be recommended for withdrawal from mineral entry.	acres (8.3% of PA) would be recommended for withdrawal from mineral entry.	acres (2.6% of PA) would be recommended for withdrawal from mineral entry.	acres (32.6% of PA) of non-WSA lands with wilderness characteristics would be managed as exclusion areas for ROWs, which would have adverse impacts on mineral production and access for exploration.
Non-WSA Lands with Wilderness Characteristics	No impacts to mineral and energy resources as non-WSA lands with wilderness characteristics are not protected under this alternative.	Same as Alternative A	Same as Alternative A	Same as Alternative A	Adverse impacts from closing approximately 582,357 acres of non-WSA lands with wilderness characteristics (or 32.6% of BLM lands) to mineral resource development.
Recreation- San Juan River SRMA	Non-riparian areas in the 10,203-acre SRMA are open subject to Standard and Special Stipulations.	The entire 10,203-acre SRMA—not just riparian areas—would be subject to NSO. This decision results in an adverse impact compared to A.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
Recreation- Cedar Mesa CSRMA	The areas of the 375,734-acre CSRMA that are outside WSAs would be subject to Standard, Special, and NSO stipulations.	The areas of the 375,734-acre CSRMA outside WSAs would be subject to Standard and Special stipulations, with beneficial, long term impacts, compared to A.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
Soil and Water Resources- Sensitive Soils	Long term, adverse impacts from a minimum of 1,063,019 acres of sensitive soils with medium and high limitations available for development, requiring BMPs and mitigation.	Same impacts as A, except a minimum of 1,049,158 acres of sensitive soils with medium and high limitations would be available for development.	Same as Alternative A.	Same impacts as A, except a minimum of 1,069,495 acres of sensitive soils with medium and high limitations would be available for development.	Same impacts as A, except a minimum of 659,170 acres of sensitive soils with medium and high limitations would be available for development.

MINERALS AND ENERGY RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Soil and Water Resources- Slopes over 20%	N/A	Long-term, adverse impacts from 21–40% steep slope and > 40% slopes requiring plans and/or no surface disturbances.	Impacts same as Alternative B, except >40% slopes would not allow surface disturbances unless project re-siting is problematic.	Long-term, adverse impacts from >40% slopes that would require a plan.	Same as Alternative B.
Special Designations- ACECs	Long-term, adverse impacts from approximately 119,397 acres (6.7% of planning area) closed or NSO due to ACEC designation.	Long-term, adverse impacts from approximately 87,567 acres (26.7% fewer acres of planning area than Alternative A) closed or NSO due to ACEC designation.	Long-term, adverse impacts from approximately 37,274 acres (68.8% fewer acres of planning area than Alternative A) closed or NSO due to ACEC designation.	Long-term, beneficial impacts to minerals as no acres would be closed or subject to NSO due to ACEC designation.	Long-term, adverse impacts from approximately 38,668 acres (67.6% fewer acres of planning area than Alternative A) closed or NSO due to ACEC designation.
Special Designations- Wild and Scenic Rivers	N/A	Long-term, adverse impacts from Closed or NSO leasing on approximately 11,040 acres (2.6% of planning area) due to WSR recommendations.	Long-term, adverse impacts from Closed or NSO leasing on approximately 3,968 acres (0.2% of planning area) due to WSR recommendations.	Long-term, beneficial impacts to minerals from no acres lands Closed or NSO due to WSR recommendations.	Same as Alternative B.
Special Status Species- Gunnison Sage-grouse	N/A	Long-term, adverse impacts from 4,524 acres reserved as critical habitat, limiting minerals activities on 0.2% of planning area.	Same as Alternative B.	Same as Alternative B, except 2,877 acres would be affected.	Same as Alternative B.
Special Status Species- Wildlife habitat	Seasonal and other restrictions would be enforced on up to 527,300 acres (or 29.5% of BLM lands), assuming no overlap. This would be an adverse impact to mineral resource development.	Seasonal and other restrictions would be enforced on up to 876,736 acres. This would be an adverse impact compared to A, as 66.3% more acres would be restricted due to wildlife management decisions.	Seasonal and other restrictions would be enforced on up to 729,567 acres. This would be an adverse impact compared to A, as 38.4% more acres would be restricted due to wildlife management decisions.	Seasonal and other restrictions would be enforced on up to 420,998 acres. This would be a beneficial impact compared to A, as 20.2% fewer acres would be restricted due to wildlife management decisions.	Same as Alternative B.

MINERALS AND ENERGY RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Special Status Species-Days that limitations are in effect	Adverse impacts from limitations on speed and schedule for minerals activities for approximately 273 days of the year to protect species.	Same as Alternative A.	Impacts same as Alternative A, except limitations would be in effect for approximately 243 days of the year.	Same as Alternative C.	Same as Alternative B.
Vegetation-Protection of relict and near-relict vegetation	Minor, adverse impacts from protection of 662 acres of relict and near-relict vegetation.	Same as Alternative A.	Same as Alternative A.	Long-term, beneficial impacts to minerals from no protection of relict and near-relict vegetation.	Same as Alternative A.
Visual Resources-VRM I designation	Long-term, adverse impacts from designation of approximately 371,575 acres (20.9% of planning area) as VRM I, with surface disturbance limits on minerals activities.	Same as Alternative A, except approximately 497,668 acres (33.9%) would be designated as VRM I.	Same as Alternative A, except approximately 425,179 acres (14.4%) would be designated VRM I.	Same as Alternative A, except approximately 390,424 acres (5.1%) would be designated as VRM I.	Same as Alternative A, except approximately 998,370 acres (56.0%) would be designated as VRM I.

NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Non-WSA Lands with Wilderness Characteristics	Adverse impacts to non-WSA lands with wilderness characteristics from minerals-related surface disturbances in 98.0% of these areas (571,057 acres), 55.0 % (319,218 acres) of areas managed under VRM III and IV with degradation of scenic quality, and all of the areas open to woodland harvesting impacts. Approximately 24.0% or 139,351 acres would be subject to	Impacts same as Alternative A from loss of non-WSA lands with wilderness characteristics values from mineral development in 83.0% (482,979 acres) of these areas, management of 53.0% (362,985 acres) of these areas under VRM III and IV permitting scenic quality degradation, and 31.0% (181,595 acres) of these areas managed as open for woodland harvesting.	Adverse loss of natural character on approximately 94.0% (546,182 acres) of non-WSA lands with wilderness characteristics from minerals development, management for lower levels of scenic quality (VRM III and IV) on 78.0% (454,205 acres) of these areas, and 37.0% (218,643 acres) of non-WSA lands with wilderness characteristics	Adverse loss of natural character from minerals development in 99.0% (576,860 acres) of non-WSA lands with wilderness characteristics, management of 99.0 % (575,686 acres) of these areas under VRM III and IV that would permit scenic quality degradation, and 37.0% (218,643 acres) open to surface disturbances from woodland harvesting.	Beneficial impacts to non-WSA lands with wilderness characteristics (on approximately 582,357 acres) from protection of naturalness and opportunities for solitude, primitive recreation through prohibitions on surface disturbances from woodland harvesting, oil and gas leasing and mineral materials activities, from ROW exclusion, and from

NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	impacts from cross-country OHV use.	Beneficial impacts from limiting cross-country OHV travel on 546,739 acres and closing the area to OHV travel on 34,033 acres.	as open to woodland harvesting surface disturbances. Beneficial impacts from limiting cross-country OHV travel on 551,565 acres and closing the area to OHV travel on 29,186 acres.	Beneficial impacts from limiting cross-country OHV travel on 580,772 acres.	management under VRM I objectives for high scenic quality. Beneficial impacts from limiting cross-country OHV travel on 580,772 acres.

PALEONTOLOGY					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Lands and Realty	Adverse impacts from increased public access and surface disturbing activities, and beneficial impacts from land acquisition and stewardship. No specified restrictions on wind and solar exploration and development.	Impacts same as Alternative A, with more acres excluded from wind and solar development than under Alternatives, A, C and D.	Impacts same as Alternative A, with more acres excluded from wind and solar development than under Alternatives A and D, but less acres than Alternatives B and E.	Impacts same as Alternative A, with more acres excluded from wind and solar development than under Alternative A, but less acres than under Alternatives B, C and E.	Impacts same as Alternative A, with would exclude the most acres from wind and solar development than any of the Alternatives.
Livestock Grazing	Adverse impacts from livestock trampling causing damage or destruction of surface fossils. Highest potential for impacts due to least acres unavailable for livestock grazing.	Adverse impacts same as Alternative A, but to a lesser degree due to more acres unavailable to and greater restrictions on livestock grazing than Alternatives A and D.	Adverse impacts and restrictions same as Alternative B, but with 7,220 more acres of Class 3 units unavailable for livestock grazing than Alternative B, and greater overall restrictions than Alternatives A and D.	Adverse impacts same as Alternative A, but to a slightly greater degree due to fewer acres unavailable to livestock grazing than Alternative A.	Adverse impacts same as Alternative A, but to a lesser degree due to greater restrictions on livestock grazing than any of the alternatives.
Minerals and Energy Resources	Adverse impacts from damage or destruction of Paleontological resources from surface disturbance, particularly in Class 3, 4/5, and 5 lands. Lands open to minerals	Adverse impacts same as Alternative A, but to a somewhat greater degree due to 20,111 (2%) more acres of Class 3, 4/5, and 5 lands open to minerals development than under	Adverse impacts same as Alternative A, but to a greater degree due to 87,911 (10%) more acres of Class 3, 4/5, and 5 lands open to minerals development than under	Adverse impacts same as Alternative A, but to a greater degree due to 120,747 (14%) more acres of Class 3, 4/5, and 5 lands open to minerals development than under	Adverse impacts same as Alternative A, but to a lesser degree due to 98,299 (11%) less acres of Class 3, 4/5, and 5 lands open to minerals development than under

PALEONTOLOGY					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	development would include 865,559 acres of Class 3, 4/5, and 5 paleontologically sensitive geologic units.	Alternative A.	Alternative A.	Alternative A.	Alternative A.
Non-WSA Lands with Wilderness Characteristics	No impacts to paleontological resources, as non-WSA lands with wilderness characteristics would not be protected under this alternative.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Surface disturbance restrictions on 582,357 acres to protect non-WSA lands with wilderness characteristics would have greater beneficial impacts on sensitive resources than under Alternative A.
Recreation	Adverse impacts include damage or destruction of important surface fossils from motorized vehicles, illegal collection, and vandalism. Beneficial impacts from regulated recreational use and awareness programs. This alternative would provide the fewest restrictions on recreational activities.	Impacts same as Alternative A with lower potential for adverse impacts and more potential beneficial impacts due to increased restrictions on recreational activities compared to Alternatives A, C and D.	Impacts same as Alternative A, with lower potential for adverse impacts and more potential beneficial impacts due to increased restrictions on recreational activities compared to Alternatives A and D, but higher potential for adverse impacts than Alternatives B and E.	Impacts same as Alternative A, with lower potential for adverse impacts and more potential beneficial impacts due to a high number of restrictions on recreational activities compared to Alternatives B, C, and E, but higher potential for adverse impacts than Alternative A.	Impacts same as Alternative A, with the lowest potential for adverse impacts due to increased restrictions on recreational activities and surface disturbance compared to the other alternatives.
Special Designations	Potential adverse impacts include increased public access, unlawful collection or vandalism of sensitive resources, increased vehicle access, and surface disturbing actions. Potential beneficial impacts from restrictions on public access and surface disturbing activities.	Potential impacts same as Alternative A, but with greater beneficial impacts from increased restrictions on access to sensitive paleontological resources compared to Alternative A.	Potential impacts same as Alternative A, but with greater restrictions on surface disturbing actions, and commercial and recreational access than Alternatives A and D, and fewer restrictions than Alternatives B and E.	Potential impacts same as Alternative A, but with somewhat greater restrictions on surface disturbing actions, and commercial and recreational access than Alternative A, but fewer restrictions than Alternatives B, C and E.	Potential impacts same as Alternative A, but with the greatest beneficial restrictions on access and surface disturbing actions of any of the alternatives.

PALEONTOLOGY					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	Alternative A would have limited restrictions on both commercial and recreational access.				
Travel Management	Potentially adverse, direct and indirect impacts from surface disturbing actions, and increased public access resulting in unlawful collection, vandalism, or destruction of sensitive resources. Alternative A would open the most acreage to travel and public access.	Potential impacts same as Alternative A, but to lesser degree due to greater restrictions on travel and public access compared to Alternative A.	Potential impacts same as Alternative A, but to lesser degree due to greater restrictions on travel and public access than Alternatives A and D, but greater potential impacts than Alternatives B and E.	Potential impacts same as Alternative A, but to somewhat lesser degree due to fewer restrictions on travel and public access than Alternatives B, C and E, but greater restrictions than Alternative A.	Potential impacts same as Alternative A, but to a lesser degree due to the greatest level of restrictions on travel and public access of any of the alternatives.
Woodlands	Adverse impacts include surface disturbance during harvest and road construction, and increased OHV access and access to sensitive resources. There would be limited restrictions on woodlands harvesting under Alternative A with the potential impacts on 662,223 acres of Class 3, 4/5, and 5 units.	Adverse impacts same as Alternative A, but to a lesser degree due to greater seasonal restrictions, limits and closures for woodland harvesting. Potential impacts on 254,765 fewer acres of Class 3, 4/5, and 5 units than Alternative A.	Adverse impacts same as Alternative A, but to a lesser degree due to increased seasonal restrictions, limits and closures for woodland harvesting. Potential impacts on 167,389 fewer acres of Class 3, 4/5, and 5 units than Alternative A.	Adverse impacts same as Alternative A, but to somewhat lesser degree from seasonal restrictions, limits, and closures to woodland harvesting. Potential impacts on fewer acres than Alternative A, but greater impacts than Alternatives B, C and E.	Adverse impacts same as Alternative A, but to lesser degree than any of the alternatives due to limited acreage available for harvesting, and restrictions on surface disturbance to protect wilderness characteristics.

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Air Quality	Long-term, beneficial impacts on recreation-related scenic quality from management decisions that would limit smoke, haze, and other	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	pollutants.				
Cultural Resources	Long-term, substantially adverse impacts to recreation resources in Comb Ridge, Tank Bench, and Beef Basin s from lack of restrictions. Long-term, adverse impacts to recreation from access restrictions to the McLoyd Canyon-Moon House . Managing the Grand Gulch Historic District for primitive recreation would have beneficial impacts on non-mechanized or specialized users, and adverse impacts on other user groups.	Restrictions or limitations on access to Cedar Mesa would have long-term, preservation-related impacts on recreation resources. Long-term, beneficial impact to Comb Ridge from reduced resource degradation, with beneficial impacts to mechanized and scenic driving groups, and adverse impacts to non-mechanized users (from lack of recreational opportunities). Beneficial impacts on scenic drivers and non-mechanized users in Tank Bench , with adverse impacts on motorized OHV, mountain biking, and motorized specialized users. Beef Basin same as those for Comb Ridge above. Long-term, beneficial impacts on mountain biking, non-mechanized, specialized, scenic driving, and motorized OHV users in McLoyd Canyon-Moon House . Potentially adverse impacts on recreational opportunities and satisfying experiences from restrictions to	Management action impacts for Comb Ridge, Tank Bench, Beef Basin, and McLoyd Canyon-Moon House s same as Alternative B. Impacts to Grand Gulch Historic District same as Alternative B, except pack animal camping permitted.	Comb Ridge, Tank Bench, and Beef Basin not managed as s. Recreation resource protection same as Alternative B, but slightly less. Impacts to users more beneficial in the short-term, but more adverse in the long-term from user conflicts and resource degradation. Impacts to McLoyd Canyon-Moon House same as Alternative B. Impacts to Grand Gulch Historic District same as Alternative C.	Same as Alternative B, except more beneficial impacts from surface disturbance restrictions on 18,514 (39%) of Comb Ridge from protection of non-WSA wilderness characteristics areas.

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
		protect the cultural site. Adverse impacts on mechanized and specialized recreation within Grand Gulch Historic District because of limited opportunities, with beneficial impacts on non-mechanized users.			
Fire Management	Short-term, adverse impacts on all recreational user groups from loss of recreation opportunities in affected areas. Long-term, beneficial impacts from reduced risk of fire, improved wildlife habitat and vegetation (with greater opportunities for wildlife viewing).	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Health and Safety	Short-term health and safety risks to recreational users in those areas where hiking, OHV use, and target shooting are in close proximity to hazardous materials and AML sites. Reclamation of AML mine sites would beneficially expand recreational opportunities in the long-term.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Lands and Realty	Short-term, beneficial impacts on non-mechanized, specialized, river floating, and mountain biking users	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	from prohibitions on pyrotechnics and explosives use during filming. Long-term, beneficial impacts from protection of natural resources for recreation during filming.				
Livestock Grazing	Long-term, beneficial impacts on recreation resources and non-mechanized users from areas unavailable for livestock grazing on 20,361 acres within Mule, Comb Wash side canyons, Arch, Fish, Owl, and Road canyons. Negligible impacts on other recreation resource users.	Same impacts as Alternative A, except that 29,790 acres would be unavailable for livestock grazing (a 46% increase in exclusions).	Same impacts as Alternative A.	Same impacts as Alternative A, except that 20,569 acres would be unavailable for livestock grazing.	Same as Alternative B.
Minerals and Energy Resources	Impacts on recreation resources would be minor, but adverse because of potential visual degradation, from 76 predicted wells drilled over life of the RMP, with surface disturbances of 730 acres, and 886 acres from geophysical (0.11% of the planning area).	Same impacts as Alternative A, except that 66 wells predicted with total surface disturbances over life of RMP of 636 acres, and 794 acres from geophysical (0.11% of planning area).	Same impacts as Alternative A, except that 74 wells predicted with total surface disturbances over life of RMP of 710 acres, and 903 acres from geophysical (0.12% of planning area).	Same impacts as Alternative A, except that 75 wells predicted with total surface disturbances over life of RMP of 721 acres, and 924 acres from geophysical (0.12% of planning area).	Same impacts as Alternative A, but to a lesser degree, from additional 582,357 acres protected from minerals-related surface disturbances within areas with non-WSA wilderness characteristics.
Non-WSA Lands with Wilderness Characteristics	Negligible impacts to recreation resources and uses as non-WSA lands with wilderness characteristics are not protected under this alternative.	Same as Alternative A	Same as Alternative A	Same as Alternative A	Long-term, beneficial impacts on recreation resources and opportunities for non-mechanized, motorized, scenic driving, and mountain biking groups

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
					from preservation of 165,831 acres for non-WSA wilderness characteristics within the SRMAs and CSRMAs, and 416,357 acres within the ERMA. Long-term, adverse impacts on competitive, motorized and mountain biking events in this area.
Paleontology	Paleontological management decisions would have negligible impacts on recreation.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Recreation	**San Juan River SRMA –** Short-term, beneficial impacts from timing stipulations and reserved campsites along river. Long-term, adverse impacts from lack of resource protection and continued intense river use, motorized boating.	**San Juan River SRMA –** Long-term, beneficial impacts on river experience from reduced crowding by reducing commercial use (beneficial impacts on private users, adverse impacts on commercial users), from limited vehicle camping, from additional campsites on Navajo Reservation (subject to MOU). Limited camping would have adverse impacts on non-river-floating users. An adverse reduction in size of the SRMA by 30% compared to the No Action.	**San Juan River SRMA –** Commercial floating, vehicle camping impacts as under Alternative B. Vehicle camping, impacts as under B. Motorized boating impacts as under A. Adverse impacts from 33% reduction in SRMA, compared to the No Action.	**San Juan River SRMA –** Impacts same as Alternative A for river users. Designated camping impacts as under Alternative B. Adverse impacts from 58% reduction in SRMA size.	**San Juan River SRMA** – Same as Alternative B.

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	Cedar Mesa – Long-term, beneficial impacts on resources and non-mechanized users from designated campsites, pet controls, no campfires, limited group size.	**Cedar Mesa –** Same as Alternative A, except pets excluded from specified areas, no woodland harvesting or collecting. Long-term, beneficial impacts from permitted camping and day use.	**Cedar Mesa –** Same impacts to Alternative B, except pet control would be same as A. Short-term adverse impacts to stock users, but long-term benefits from resource preservation.	**Cedar Mesa –** Management decisions and impacts same as C, except that pets and stock would be prohibited or limited if causing adverse impacts to recreation resources.	**Cedar Mesa –** Same as Alternative B, except 109,700 acres (29%) within the proposed SRMA would be protected for preservation of non-WSA wilderness characteristics.
	Grand Gulch SRMA – Mesa-top, in-canyon day-use would have long-term, adverse impacts on recreation from conflicts, overcrowding. In-canyon camping actions would have long-term, beneficial impacts on resources and on users from use restrictions that would preserve resources and provide more recreational opportunities.	**Grand Gulch SRMA –** Long-term, beneficial impacts on mesa-top day-use and camping from resource preservation, limits on group size, and waste removal. Impacts on in-canyon day-use would be beneficial in the long-term from limits on group size and numbers, which would reduce user conflicts. Beneficial, long-term impacts on in-canyon camping from limits on group size and numbers, waste removal.	**Grand Gulch SRMA –** Day-use impacts same as Alternative B. Mesa-top camping impacts same as B, except group size would be increased, with adverse impacts on back-country opportunities. Impacts from larger group sizes and numbers would vary: adverse impacts to resources, but designated campsites would be beneficial for resources. In-canyon day-use impacts same as Alternative B. In-canyon camping impacts same as Alternative B.	**Grand Gulch SRMA –** Mesa-top day-use impacts same as Alternative C. Mesa-top camping adversely impacted in the long-term, same as A, from resource use conflicts, potential over-crowding, concentrations of large camping and hiking groups. Beneficial impacts on some users from campsite facilities, with adverse impacts on other users expecting primitive, undeveloped, natural settings. In-canyon day-use impacts same as Alternative B. In-canyon camping impacts same as Alternative C.	**Grand Gulch SRMA –** Same as Alternative B.
	Dark Canyon SRMA – Long-term, adverse impacts to resources from unlimited group sizes, dogs and vehicles, dispersed camping, campfires, and minimal	**Dark Canyon SRMA –** Short- and long-term, beneficial impacts on resources from limits on users per day, designated campsites, limits on campfires (mesa tops),	**Dark Canyon SRMA –** Impacts same as Alternative B, but decreased long-term, beneficial impacts by increased group size and numbers.	**Dark Canyon SRMA –** Impacts same as Alternative A from unrestricted dispersed camping, permitted large and numerous commercial groups,	**Dark Canyon SRMA –** Same as Alternative B, except for additional beneficial impacts from protection of 2,522 acres (8%) to preserve non-WSA wilderness

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	ranger presence. Long-term, adverse impacts to users from over-crowding, user conflicts, loss of recreational opportunities.	waste management, pet restrictions, and prohibitions on firewood collecting. Short-term, adverse impacts on users from group size and number limits, but long-term, beneficial impacts from improved backcountry opportunities.		unrestricted use of campfires, no designated campsites, and unrestricted firewood collection.	characteristics.
	Indian Creek SRMA – Long-term, adverse impacts on resources and resource users from unlimited, unrestricted user group sizes, minimal monitoring of surface disturbances, unrestricted camping and use of campfires, potential degradation of cultural-recreational resources, and unrestricted presence of pets.	**Indian Creek SRMA –** Short- and long-term, beneficial impacts on resources from designated camping, prohibitions on dispersed camping, prohibitions on wood gathering, and adaptive management to preserve resources. Short-term, beneficial impacts on resource users from additional recreational facilities. Long-term, beneficial impacts on users from management decisions that address the increasing popularity and recreational use of the area.	**Indian Creek SRMA –** Same as Alternative B.	**Indian Creek SRMA –** Same as Alternative B.	**Indian Creek SRMA –** Same as Alternative B.
	White Canyon SRMA – Area not managed as an SRMA. Long-term, adverse impacts from unrestricted private and commercial use, open camping and campfires.	**White Canyon SRMA –** Managed as 2,828-acre SRMA. Short-term and long-term, beneficial impacts from fire pan use, permit system, primitive campground	**White Canyon SRMA –** Same as Alternative B.	**White Canyon SRMA –** Managed as a SRMA. Long-term, adverse impacts from lack of permit system to limit resource use and visitation. Long-term,	**White Canyon SRMA –** Same as Alternative B.

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
		development, prohibitions on campfires in-canyon.		beneficial impacts from developed campsites, fire pan use.	
	Monticello FO ERMA – No specified management decisions. Long-term, beneficial impacts to resources and users from adaptive management to protect resources.	**Monticello FO ERMA –** Long-term, beneficial impacts from adaptive management, limits on dispersed vehicle camping, camping limited to designated sites along Bears Ears Road and Deer Flat Road, and coordination with Glen Canyon Rec Area on campground construction.	**Monticello FO ERMA –** Same as Alternative B, except allowing dispersed vehicle camping within 150 of roadways would have long-term, adverse impacts on resources from surface disturbances.	**Monticello FO ERMA –** Same as Alternative C, except that dispersed vehicle camping allowed within 300 feet of roadways.	**Monticello FO ERMA –** Same as Alternative B.
	Special Recreation Permits (SRPs) – Long-term, beneficial impacts from stipulations in the permit that would ensure that resources were not adversely impacts.	**Special Recreation Permits (SRPs) –** Same as Alternative A.	**Special Recreation Permits (SRPs) –** Same as Alternative A.	**Special Recreation Permits (SRPs) –** Same as Alternative A.	**Special Recreation Permits (SRPs) –** Same as Alternative B, but reduced beneficial impacts from fewer opportunities for commercial, specialized recreation.
Riparian Resources	No specific management decisions would affect recreation, but current adverse impacts would have long-term recreation opportunity-degrading impacts on hiking, trail use, wildlife viewing, sightseeing, and camping.	Riparian management decisions would have long-term, beneficial impacts on recreation by excluding livestock in specified riparian areas, closing areas to OHV use, and closing functioning at risk areas to motorized camping. Short-term, adverse impacts on recreational opportunities until riparian area were restored.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Soil and Water Resources	Soils and watershed management decisions are unspecified.	No specific management action impacts on recreation, but erosion control planning and mitigation on steep slopes would have long-term, beneficial impacts on recreation-related scenic quality.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
Special Designations	**Alkali Ridge ACEC –** Beneficial, long-term impacts on the 39,202-acre ACEC from resource preservation and/or mitigation of disturbances.	**Alkali Ridge ACEC –** 39,196-acre ACEC would receive long-term, beneficial impacts from cultural resource management plan, and prohibitions on surface-disturbing activities that might threaten the area's cultural resources.	**Alkali Ridge ACEC –** Same as Alternative A, except that a management plan would be prepared and limits placed on surface disturbances, which would have beneficial impacts.	**Alkali Ridge ACEC –** Not designated as an ACEC. The impacts would be adverse in the long-term because surface disturbances would not be limited, visual quality would be adversely affected.	**Alkali Ridge ACEC –** Same as Alternative B.
	Bridger Jack Mesa ACEC – Long-term, beneficial, impacts on recreation resources and non-mechanized users. Long-term, adverse impacts on motorized OHV, mountain biking, specialized, and scenic driving user groups within the ACEC because it lies within a WSA.	**Bridger Jack Mesa ACEC –** Same as Alternative A.	**Bridger Jack Mesa ACEC –** Same as Alternative A.	**Bridger Jack Mesa ACEC –** Same as Alternative A.	**Bridger Jack Mesa ACEC –** Same as Alternative A.
	Butler Wash North ACEC – Long-term, beneficial impacts on non-mechanized users from maintenance of	**Butler Wash North ACEC –** Same as Alternative A.	**Butler Wash North ACEC –** Same as Alternative A.	**Butler Wash North ACEC –** Same as Alternative A.	**Butler Wash North ACEC –** Same as Alternative A.

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	wilderness values, but long term adverse impacts on mechanized and specialized users from prohibitions on surface disturbances. because the ACEC lies within a WSA.				
	Cedar Mesa ACEC – Managed as a 295,336-acre ACEC for cultural, scenic/ recreational, primitive/natural area values. Short-term, adverse impacts from rangeland and wildlife improvement projects, and fire suppression. Long-term, adverse impacts from potential minerals resource exploration and development. Long-term, beneficial impacts from designated OHV use, protection of cultural resources, and areas managed for scenic quality and non-motorized uses.	**Cedar Mesa ACEC –** Managed as a 306,742-acre ACEC for cultural resources. Long-term, beneficial impacts from waste management, prohibitions on dispersed camping, and limiting day use and overnight camping to protect cultural resources. Long-term, adverse impacts on recreation users from reduced recreational opportunities.	**Cedar Mesa ACEC –** Long-term beneficial impacts same as Alternative B. Long-term adverse impacts same as Alternative B, but to a lesser degree, because the ACEC would be open to dispersed camping.	**Cedar Mesa ACEC –** Same as Alternative C.	**Cedar Mesa ACEC –** Same impacts as Alternative B, but more beneficial to non-mechanized recreation, from protection of 60,049 acres of area with non-WSA wilderness characteristics within the proposed ACEC.
	Dark Canyon ACEC – Dark Canyon lies entirely within a WSA, so there would be long-term, beneficial impacts on non-mechanized users from maintenance of wilderness values, but long term adverse	**Dark Canyon ACEC –** Same as Alternative A.	**Dark Canyon ACEC –** Same as Alternative A.	**Dark Canyon ACEC –** Same as Alternative A.	**Dark Canyon ACEC –** Same as Alternative A.

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	impacts on mechanized and specialized users from prohibitions on surface disturbances.				
	Hovenweep ACEC – Impacts would be same as Cedar Mesa ACEC because management decisions are similar.	**Hovenweep ACEC –** Same as Alternative A.	**Hovenweep ACEC –** Same as Alternative A.	**Hovenweep ACEC –** ACEC would not be established. Adverse impact to recreation in the short- and long-term from minerals development, watershed and vegetation treatment projects, impacts to cultural resources. Long-term, beneficial impacts for OHV users and non-motorized trail users. Adverse impacts on users seeking remoteness, solitude, and naturalness.	**Hovenweep ACEC –** Same as Alternative A.
	Indian Creek ACEC – Managed to protect visual quality, management decisions would permit minimal surface disturbances and closed to OHV use, with long-term, beneficial impacts on recreation resources. Variable impacts on recreation users: beneficial impacts on non-mechanized and scenic drivers; adverse impacts on mechanized users from limited recreational opportunities.	**Indian Creek ACEC –** Same impacts as Alternative A, except that ACEC would be reduced in area by 36% in comparison to Alternative A.	**Indian Creek ACEC –** Same impacts as Alternative B on recreation resources, but reduced degree of beneficial impacts on resources and users because the ACEC would be reduced in area by 71% in comparison to Alternative A.	**Indian Creek ACEC –** The ACEC would not be established, with no emphasis on managing the area for scenic quality except those areas that lie within WSAs. Adverse, long-term impacts on recreation resources that lie outside of WSAs from lack of resource protection. Variable impacts on resource users: non-mechanized and scenic drivers would be adversely impacted; mechanized, specialized users would benefit in the short-term. Long-term,	**Indian Creek ACEC –** Same as Alternative B, but to a greater degree, because, 30% of the ACEC (3,887 acres) would be protected to preserve lands with non-WSA wilderness characteristics.

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
				adverse impacts on all users from user conflicts, resource degradation, and crowding.	
	Lockhart Basin ACEC – The area would not be managed as an ACEC. Long-term, beneficial impacts on recreation resources from VRM II designation, prohibitions on woodcutting, and closed to OHV use. Long-term, adverse impacts on OHV users, but beneficial impacts on scenic drivers, non-motorized, and non-mechanized users.	**Lockhart Basin ACEC –** The area would be designated as a 47,783-acre ACEC, managed for scenic quality under VRM I. Impacts to resources and users same as Alternative A, but to a greater degree, in order to protect scenic resources.	**Lockhart Basin ACEC –** Not designated as an ACEC, and managed as VRM Class II and VRM Class III. Adverse impacts to recreation resources because the area would be open to mineral leasing, livestock grazing in VRM III areas. Long-term, adverse impacts to non-mechanized, scenic drivers, and mountain biking recreation users from degradation of scenic quality in VRM Class III areas. Short-term, beneficial impacts to OHV users, but long-term, adverse impacts from resource degradation in VRM III areas.	**Lockhart Basin ACEC –** Same as Alternative C.	**Lockhart Basin ACEC –** Same as Alternative B, except to a greater beneficial degree for non-mechanized users and greater adverse impacts to motorized OHV users, from management of 45% of the ACEC (21,298 acres) for preservation of lands with non-WSA wilderness characteristics.
	Lavender Mesa ACEC – The 649-acre ACEC would be managed to preserve relict vegetation on the mesa top, with long-term, beneficial impacts on recreation resources from protection of visual, cultural, and natural resources. Negligible impacts on	**Lavender Mesa ACEC –** Same as Alternative A.	**Lavender Mesa ACEC –** Same as Alternative A.	**Lavender Mesa ACEC –** The ACEC would not be established. Long-term, adverse impacts to recreation resources from unrestricted surface-disturbing activities. Long-term, adverse impacts on non-mechanized and specialized users from	**Lavender Mesa ACEC –** Same as Alternative A.

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	mechanized recreation users because the area is inaccessible. Beneficial impacts on non-mechanized and specialized (climbers) from preservation of an undeveloped recreation area.			lack of protection-related management decisions that would allow resource degradation.	
	Shay Canyon ACEC – Continued management of the 3,561-acre ACEC for cultural resource conservation. Minor impacts on resources from actions that limit OHV use, protect scenic quality, and protection of cultural resources. Minor impacts on resource users because opportunities would be available for mechanized and non-mechanized users.	**Shay Canyon ACEC –** The ACEC would be managed as a 119-acre area to conserve cultural resources. Impacts on recreation resource would be beneficial in the long-term because surface disturbances would be prohibited. Impacts on all recreation use would be adverse in the long-term from limitations imposed to protect cultural resources, and from reduction of ACEC area, when compared to Alternative A that would limit recreational opportunities.	**Shay Canyon ACEC –** Same as Alternative B.	**Shay Canyon ACEC –** The ACEC would not be established, with VRM III objectives, limited OHV use, livestock grazing, fuels and watershed treatments that would have long-term, adverse impacts on resources. Short-term, beneficial impacts on mechanized and non-mechanized users from expanded opportunities, but long-term, adverse impacts on users from resource degradation through lack of protection prescriptions.	**Shay Canyon ACEC –** Same as Alternative B.
	San Juan River ACEC – The area would be managed as a 15,100-acre ACEC. Impacts would same as the San Juan River SRMA impacts.	**San Juan River ACEC –** Managed as a 7,590-acre ACEC for protection of scenic, cultural, wildlife, and natural systems values. Long-term, beneficial impacts on resources from decisions that limit or restrict surface disturbances.	**San Juan River ACEC –** Same as Alternative B.	**San Juan River ACEC –** The ACEC would not be designated, but impacts would be same as Alternative B because of similar management decisions to protect recreational resources and allow similar range of recreational opportunities.	**San Juan River ACEC –** Same as Alternative B.

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
		Long-term, adverse impacts on motorized, mountain biking, non-mechanized users from reduced recreational opportunities. Negligible impacts on river users.			
	Valley of the Gods ACEC – The area would be managed as 31,387-acre ACEC for scenic quality under VRM I objectives. Impacts on resources would be beneficial in the long-term through limitations on surface disturbances. Long-term, beneficial impacts on non-mechanized, mechanized, and scenic drivers because opportunities would be available.	**Valley of the Gods ACEC –** Managed as a 22,863-acre ACEC for scenic quality preservation. Impacts would be same as A because of VRM I objectives for the area.	**Valley of the Gods ACEC –** Same as Alternative B.	**Valley of the Gods ACEC –** No designation of an ACEC. VRM III management objectives would permit long-term, adverse impacts to resources, with long-term, adverse impacts to scenic drivers, non-motorized, and non-mechanized users from diminished recreational opportunities.	**Valley of the Gods ACEC –** Impacts the same as Alternative B.
	Wild and Scenic River – Colorado Segments Impacts on segment #1 would be beneficial in the long-term from restrictions to preserve ORVs, with beneficial, long-term impacts on all users because opportunities would continue to be available. Impacts on Segment #2 and #3 would be the same as for #1 above.	**Wild and Scenic River – Colorado Segments** Impacts on segment #1 would be beneficial in the long-term from preservation of ORVs. Impacts on specialized, mountain biking, non-mechanized, river users, and motorized users would be beneficial because opportunities would be available for recreation. Impacts on Segment #2	**Wild and Scenic River – Colorado Segments** Recommended as not suitable, the impacts on Segment resources and users would be adverse in the long-term. Impacts to Segment #2 would be same as Alternative B, except that motorized use would create user conflicts and diminish the river user experience. Impacts to Segment #3	**Wild and Scenic River – Colorado Segments** Segments would be recommended as Not Suitable, with long-term, adverse impacts on recreation.	**Wild and Scenic River – Colorado Segments** Same as Alternative B.

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
		would be same as to #1 above. Impact to Segment #3 would have long-term, beneficial impacts on resources, but long-term, adverse impacts on mountain biking and motorized users from reduced opportunities.	would be same as Alternative B, except that motorized use would create user conflicts and diminish the river user experience.		
	Wild and Scenic River-Indian Creek Segment Not evaluated for eligibility, but impacts on recreation would continue to be beneficial through management decisions under the current RMP, with a range of beneficial recreational opportunities for mechanized and non-mechanized users.	**Wild and Scenic River-Indian Creek Segment** Long-term, beneficial impacts on resources and resource users because ORVs would be protected, while allowing recreation opportunities for motorized, non-motorized, and mountain bike users.	**Wild and Scenic River-Indian Creek Segment** Long-term, adverse impacts on resources from likely degradation of ORVs. Impacts on users would be long-term and adverse from degradation of resources and reduction in recreational opportunities.	**Wild and Scenic River-Indian Creek Segment** Same as Alternative C.	**Wild and Scenic River-Indian Creek Segment** Same as Alternative B, except that additional resource protection along 0.6 miles of river corridor to protect areas with non-WSA wilderness characteristics.
	Wild and Scenic – Fable Valley Segment Not evaluated for eligibility, but it's location within a WSA ensures that impacts on recreation resources and non-mechanized recreation would be beneficial in the long term. Long-term, adverse impacts on all other user groups from WSA restrictions on mechanized use and surface disturbances.	**Wild and Scenic – Fable Valley Segment** Same as Alternative A.	**Wild and Scenic – Fable Valley Segment** Same as Alternative A.	**Wild and Scenic – Fable Valley Segment** Same as Alternative A.	**Wild and Scenic – Fable Valley Segment** Same as Alternative A.

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	Wild and Scenic – Dark Canyon Segment Not evaluated for eligibility, but it's location within a WSA ensures that impacts on recreation resources and non-mechanized recreation would be beneficial in the long term. Long-term, adverse impacts on all other user groups from WSA restrictions on mechanized use and surface disturbances.	**Wild and Scenic – Dark Canyon Segment** Same as Alternative A.	**Wild and Scenic – Dark Canyon Segment** Same as Alternative A.	**Wild and Scenic – Dark Canyon Segment** Same as Alternative A.	**Wild and Scenic – Dark Canyon Segment** Same as Alternative A.
	Wild and Scenic – San Juan River Segments Segment #1 not evaluated for eligibility, with impacts same as Colorado River Segment #1. Segment #2 determined to be eligible. Limited OHV use, VRM I objectives, and withdrawn mineral entry would have long-term, beneficial impacts on resources and users because opportunities would continue to be available for mechanized, river floating, and non-mechanized users. Segments #3, #4, and #5 would have same impacts as #2.	**Wild and Scenic – San Juan River Segments** Segment #1 recommended as Suitable for Recreation, managed as VRM III, NSO for minerals. Impacts to recreation would be negligible to minor because no recreation ORVs were found during eligibility study. Segment #2 recommended as Suitable for Recreation with ORV protection that would have long-term, beneficial impacts on recreation resources and users. Segment #3 recommended as Suitable for Wild, with	**Wild and Scenic – San Juan River Segments** Segment #1 impacts same as Alternative B. Segment #2 Recommended as Not Suitable. Impacts on recreation would be adverse in the long-term because eligibility study determined that the segment has ORVs. Impacts on users would be adverse in the long-term because of likely resource degradation and diminished recreation opportunities. Segment #3 Impacts same as Segment #2. Segment #4 Impacts same as Segment #2. Segment #5 Impacts same as Segment #2.	**Wild and Scenic – San Juan River Segments** Segment #1 Impacts same as Alternative C. Segment #2 Impacts same as Alternative C. Segment #3 Impacts same as Alternative C. Segment #4 Impacts same as Alternative C. Segment #5 Impacts same as Alternative C.	**Wild and Scenic – San Juan River Segments** Same as Alternative B.

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
		VRM I management, closed to OHV use, and mineral withdrawal that would have long-term, beneficial impacts on resources. Impacts on users would be variable: OHV users would be adversely affected, but river floaters and non-mechanized users would benefit. Segment #4 would have impacts same as Segment #2. Segment #5 would have impacts same as Segment #3.			
	Wild and Scenic – Arch Canyon Segment Not evaluated for eligibility. Impacts same as Indian Creek segment.	**Wild and Scenic – Arch Canyon Segment** Same as Indian Creek segment.	**Wild and Scenic – Arch Canyon Segment** Same as Indian Creek segment.	**Wild and Scenic – Arch Canyon Segment** Same as Indian Creek segment.	**Wild and Scenic – Arch Canyon Segment** Same as Alternative B.
	Wild and Scenic – White Canyon Determined to be eligible. Beneficial, long-term impacts on recreation and users from resource protection and continued recreational opportunities.	**Wild and Scenic – White Canyon** Determined to be Not Suitable. Negligible impacts on recreation because of proposed SRMA under this alternative to protect recreation resources and opportunities.	**Wild and Scenic – White Canyon** Same as Alternative B.	**Wild and Scenic – White Canyon** Same as Alternative B.	**Wild and Scenic – White Canyon** Same as Alternative B.

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	Wilderness Study Areas (WSAs) Impacts on recreation and users would be negligible because past and future status would not change until congressional release.	**Wilderness Study Areas (WSAs)** Same as Alternative A.	**Wilderness Study Areas (WSAs)** Same as Alternative A.	**Wilderness Study Areas (WSAs)** Same as Alternative A.	**Wilderness Study Areas (WSAs)** Same as Alternative A.
Special Status Species	Negligible impacts on recreation.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Travel Management	**OHV –** Open to cross-country travel and Limited to designated routes OHV use would be adverse in the long-term from resources degradation and intensifying resource use conflicts. **Special Stipulation Areas –** Long-term, adverse impacts from OHV exclusion and access within McLoyd Canyon-Moon House site. Long-term, beneficial impacts from restricting travel in Arch Canyon by preserving wildlife viewing opportunities.	**OHV –** Short- and long-term, beneficial impacts to resources from eliminated OHV cross-country travel and restrictions to designated routes, and reduction in user conflicts. Beneficial impacts on non-mechanized, mountain biking, and river floaters from closed or designated routes. Long-term, adverse impacts on motorized OHV groups from elimination of Open OHV areas. **Special Stipulation Areas –** Impacts to McLoyd Canyon-Moon House same as Alternative A, but long-term, beneficial impacts to resource preservation. Long-term, adverse impacts to recreation from closing Arch Canyon to OHV use	**OHV –** Same as Alternative B, except that long-term, adverse impacts would occur within 2,311 acres designated as Open to OHV use. **Special Stipulation Areas –** Impacts to McLoyd Canyon-Moon House same as Alternative B. Impacts to Arch Canyon same as Alternative A.	**OHV –** Resource impacts same as Alternative C. Long-term, adverse impacts to mountain biking and non-mechanized users from resource conflicts with motorized OHV users throughout planning area. Long-term, adverse impacts on motorized OHV cross-country use from substantial reduction in area, but increased opportunities for designated route OHV recreation. **Special Stipulation Areas –** Impacts to McLoyd Canyon-Moon House same as Alternative A. Impacts to Arch Canyon resources same as Alternative A. impacts to users same as Alternative C.	**OHV –** All OHV travel within non-WSA lands with wilderness characteristics would be prohibited, with long-term, substantially adverse impacts on motorized OHV, mountain biking, and competitive (specialized) motorized and non-motorized users from reduced opportunities. Long-term, beneficial impacts on non-mechanized users from increased areas closed to motorized users. **Special Stipulation Areas –** Same as Alternative B.

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
		by reducing recreational opportunities.			
Vegetation Management	Impacts same as Fire Management because treatments and impacts are the same.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Visual Resources	Long-term, beneficial protection-related impacts on recreation resources and related scenic quality preservation, and long-term, beneficial impacts on all resource user groups from designation of 371,575 acres as VRM Class I and 355,112 acres as VRM II (41% of the PA).	497,668 acres designated under VRM Class I (33% more than Alternative A) and 250,641 acres as VRM II, with impacts same as Alternative A, but to a greater degree. Approximately 42% of the planning area would be managed for high scenic quality.	425,179 acres designated under VRM Class I (14% more than Alternative A) and 132,001 as VRM II, with long-term, adverse impacts to recreation from 10% less protection of scenic quality than Alternative A. Approximately 31% of the planning area would be managed for high scenic quality.	390,424 acres designated under VRM Class I (5% more than Alternative A) and 8,838 acres as VRM II, with long-term, adverse impacts to recreation from a 19% reduction in scenic quality protection than Alternative A. High scenic quality would be protected on 22% of the PA.	998,371 acres designated as VRM I (269% more acreage than Alternative A), including areas designated as VRM Class I to protect non-WSA wilderness characteristics, with long-term, beneficial impacts on scenic resources. This alternative would protect scenic quality under VRM Class I and II management objectives on 62% of the PA.
Wildlife and Fisheries Resources	Seasonal closing of wildlife habitat would have short-term, adverse impacts on motorized OHV recreation to protect crucial habitat.	Short-term, adverse restrictions on all commercial or permitted OHV use within crucial wildlife habitat. Approximately 512 miles of OHV routes would be affected.	Same as Alternative B, except that 135 miles of commercial and permitted OHV routes would be affected.	Same as Alternative A.	Same as Alternative B.
Woodlands	Long-term, adverse noise and visual impacts on non-mechanized, some motorized OHV, specialized, scenic driving, and mountain biking groups from intrusive OHV and chainsaw noise impacts, trash, OHV surface	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

RECREATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	disturbances, and remnants of woodland harvesting.				

RIPARIAN RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Fire Management	Fuels management treatments on approximately 5,000 to 10,000 acres annually would be adverse in the short-term from increased sedimentation and runoff from prescribed burn surface disturbances. Long-term beneficial impacts from reduction in wildland fire risk and establishment of a more natural fire return interval.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Lands and Realty	Beneficial impacts from ROW exclusions on 120,800 acres that would limit surface and vegetation disturbances and changes in hydrology.	Beneficial impacts from ROW exclusions in bird habitat, in designated VRM Class I and II areas through limits on suface and vegetation disturbances and changes in hydrology.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B, but with additional beneficial impacts from ROW exclusions in non-WSA lands with wilderness characteristics.
Livestock Grazing	The total riparian area open to grazing would be 17,600 acres; unavailable acreage would be 2,400 acres. Beneficial impacts from resource protection and enhancement through proper herd management. Proper	17,200 riparian acres would be open to grazing; 2,800 would be unavailable. Seasonal restrictions, closures, and/or forage utilization limits on grazing in riparian areas, especially those Functioning at Risk.	Same as Alternative B.	Alternative D would have 18,020 acres open and 2,380 acres unavailable to livestock grazing. There would be no seasonal restrictions, closures, and/or forage utilization limits on grazing riparian areas	Same as Alternative B.

RIPARIAN RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	livestock grazing would benefit riparian systems by ensuring recruitment of riparian plant species. Riparian exclosures would protect and enhance riparian vegetation. Overall, Alternative A has the fewest riparian areas unavailable for livestock grazing compared to all other alternatives.	The closure of riparian areas to grazing would protect riparian vegetation, as described under A. Alternative B provides the largest number of riparian acres excluded from grazing, which would have more long-term, beneficial impacts on riparian resources in those excluded areas than Alternative A.		Functioning At Risk, therefore fewer reductions in adverse impacts would occur, as compared to Alternatives B and C. This alternative would have impacts the same as Alternative A.	
Non-WSA Lands with Wilderness Characteristics	No impacts to riparian resources in these lands from special management to protect non-WSA lands with wilderness characteristics because no lands would be managed to protect their wilderness characteristics.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Beneficial impacts to riparian resources from protection of wilderness characteristics on 582,360 acres from closure to minerals, OHV travel, ROW permitting, and through management under VRM Class I objectives.
Recreation	Short term and Long-term, adverse impacts to riparian resources from dispersed recreation-related and OHV-caused stream bank vegetation trampling; soil compaction, sedimentation, erosion, and indirect spread of invasive species. Impacts mitigated by BLM through recreation guidelines and stipulations to protect riparian resources.	Similar to Alternative A, but with less adverse impacts from increased restrictions on recreation in riparian areas, riparian areas closed to OHV use, limits on river use, and other recreation restrictions that would protect riparian resources.	Recreation actions would provide more protection to riparian resources than Alternatives A and D, but less than Alternatives B and E.	Similar to Alternative A.	Same as Alternative B, except that restrictions on OHV use would be greater, with fewer potential impacts to riparian areas from OHV use.

RIPARIAN RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Riparian Resources	Long-term, beneficial impacts on riparian resources from NSO stipulations, grazing and rangeland health standards, and floodplain protection.	Same as Alternative A.	Similar to Alternative B, with less protective ACEC prescriptions.	Same as Alternative A.	Same as Alternative B.
Soil and Water Resources	Indirect, long term, adverse impacts from sedimentation and soil erosion on riparian because of a lack of steep-slope surface disturbances restrictions.	Long-term, beneficial indirect impacts from surface disturbance restrictions on slopes >40% slopes (approximately 87,456 acres).	Same as Alternative B, except surface-disturbing activities would not be permitted on slopes greater than 40% unless determined that it would cause undue or unnecessary degradation to pursue other placement alternatives.	Same as Alternative B, except the impacts of soils and watershed management decisions would require a plan including an erosion control strategy, survey, and design for development of land with a slope greater than 40%.	Same as Alternative B.
Special Designations	Long-term, adverse impacts from minerals activities within ACECs through vegetation trampling and removal, habitat fragmentation, and invasive species infestation. Long-term, beneficial impacts from OHV motorized-use protection, and protection within WSAs.	Long-term, beneficial protection within WSAs and W&SR segments, from OHV limitations, and limits on vegetation treatments.	Same as Alternative B.	Impacts the same as Alternative A.	Same as Alternative B, except that riparian areas in 109,206 acres of ACECs in non-WSA lands with wilderness characteristics would be managed with additional protective restrictions from woodland harvest, mineral entry, surface disturbance, and ROWs.
Special Status Species	Long-term, beneficial impacts to riparian areas, from protection of special status species habitat.	Same as Alternative A, except additional beneficial impacts from protection of Arch Canyon through OHV closure and permitted limits on visitor impacts to the canyon to protect riparian resources.	Impacts same as A, except OHV use in Arch Canyon limited to the designated route.	Same as Alternative A, except additional riparian protection from travel limits within Arch Canyon.	Same as Alternative B.

RIPARIAN RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Vegetation	No impacts on riparian resources because no vegetation treatments are proposed in riparian areas.	Adverse, direct and indirect short term impacts from vegetation treatments causing increased runoff and sedimentation due to loss of vegetative cover. Long-term, beneficial impacts from riparian condition improvement after treatments. This would be 500 (100%) more acres of riparian treatment than under Alternative A.	Impacts same as B, except treatment of 400 (80%) fewer acres of riparian habitat than under Alternative B.	Same as Alternative C.	Same as Alternative B.
Visual Resources	Under Alternative A, 12,200 acres of riparian habitat would be beneficially protected under VRM Class I and II objectives.	Same as Alternative A, except 1,000 fewer acres (11,200 total acres) of riparian habitat would be protected.	Same as Alternative A, except 8,600 acres of riparian habitat would be beneficially protected under VRM Class I and II objectives.	Under Alternative D, 5,300 acres of riparian habitat would be beneficially protected under VRM Class I and II objectives. This alternative would provide the least benefit to riparian resources.	Same as Alternative B, except more riparian area would be beneficially protected under VRM Class I and II objectives than any of the other alternatives (13,704 acres of riparian habitat).
Wildlife and Fisheries Resources	Long-term, direct benefits to riparian resources from maintenance and/or improvement of lowland riparian and wetlands habitats. Some loss of riparian vegetation from elk grazing.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Woodlands	Potential adverse impacts from vegetation disturbance, reduction or loss of woody shrub and canopy vegetation in riparian habitat from permitted harvesting of cottonwood and willow for	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

RIPARIAN RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	ceremonial purposes.				

SOCIOECONOMICS					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Cultural Resources	Long-term, adverse impacts to cultural resource-related tourism revenue from minimal restrictions and protection of cultural resources (37,433 acres).	A 162% increase (98,348 acres) in protected cultural resources could beneficially increase cultural resource-related tourism. Increased quality and quantity of cultural sites would likely have long-term beneficial impacts on the local economy as compared to Alternative A.	Impacts same as Alternative B, except reduced protection for the Tank Bench areas could have adverse impacts on tourism and connections to the cultural heritage of the area.	Impacts same as Alternative A, except acreage subject to special management considerations increased by 5% (38,995 acres).	Same as Alternative B, except that areas designated as NSO would be closed in the Comb Ridge.
Livestock Grazing	No changes in existing socioeconomic conditions (employment, sales tax revenue, culture).	Same as Alternative A, except a 0.5% reduction in acres available for grazing and a 0.03% reduction in AUMs. This is not likely to impact social conditions, jobs or income.	Same as Alternative D.	Same as Alternative A, but with a 0.01% reduction in acres and 0.02% reduction in AUMs	Same as Alternative B.
Minerals and Energy Resources	Long-term, beneficial economic impacts to local communities from employment, taxes, royalties, bonus payments and annual rent payments from minerals development: Estimated annual revenue from oil and gas development: 5 oil wells-$251,225 and 5 natural gas wells-$312,350.	Same as Alternative A, except total well potential would differ by only 7 wells (73 wells under Alternative A and 66 wells under B)	Same as Alternative A, except the total well potential would differ by only one well (73 wells under Alternative A and 74 under Alternative C).	Same as Alternative A, except total well potential would differ by only 2 wells (73 wells under Alternative A and 75 wells under Alternative D).	Same as Alternative A, with the well potential differing by 19 wells (73 wells under Alternative A and 54 wells under Alternative E). Estimated annual revenue from oil and gas development: 3 oil wells - $150,735 and 3 natural gas wells - $187,410.

SOCIOECONOMICS					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Non-WSA Lands with Wilderness Characteristics	No impacts, as no non-WSA lands with wilderness characteristics would be managed for wilderness characteristics.	No impacts, as no non-WSA lands would be managed for wilderness characteristics.	No impacts, as no non-WSA lands would be managed for wilderness characteristics.	No impacts, as no non-WSA lands would be managed for wilderness characteristics.	Management prescriptions for 582,357 acres of non-WSA lands with wilderness characteristics likely to have positive impacts on local economy with the potential for some socioeconomic losses due to restricted activities in these areas.
Recreation	No changes in current socioeconomic trends ($35.5 million in spending and 1,083 jobs in 2003).	Minor, adverse impacts on socioeconomics from decreased group/trip sizes within SRMAs, resulting in fewer visitors. OHV impacts would be the same as Alternative A. Long-term, beneficial impacts on non-motorized activities would be the greatest under this alternative.	Similar impacts to Alternative A, with greater potential for increased visitation and economic contributions to local economy than Alternative B. Potential for long-term, adverse social impacts due to user conflicts, crowding, and degradation to the environment.	Similar to Alternative A, except for a slightly greater potential benefit to short-term economic conditions as group, trip, and use limits would be least restrictive under this alternative. Potential for long-term, adverse social impacts due to user conflicts, crowding, and degradation to the environment.	Similar to Alternative B, with unknown gains and losses due to management prescriptions for 582,360 acres of non-WSA lands with wilderness characteristics.
Special Designations	Negligible economic impacts from anticipated level of minerals development.	Impacts same as Alternative A, except adverse impacts to mineral development and subsequent economic revenue would be slightly greater with 310,651 acres (60 % of total ACECs) closed to oil and gas development. Adverse impacts from seasonal prohibitions of SRPs in ACECs.	Impacts same as Alternative A, with 291,605 acres of ACECs closed to development (56 % of total ACECs). Long-term beneficial and adverse impacts same as B for WSRs, but more beneficial for minerals development and less beneficial for recreation users. Opportunities for tourism-based revenue	Impacts same as Alternative A, with 287,492 acres of ACECs closed to development (55 % of total ACECs. Beneficial minerals-related impacts, as Alternative D would not recommend WSR designations.	ACECs – Impacts same as Alternative B, with 399,345 acres of ACECs closed to development (77% of total ACECs.

SOCIOECONOMICS					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
		Long-term, adverse impacts from designating 92.4 miles as recommended for W&SR status, limiting minerals development. Long-term, beneficial impacts from revenue generated from river user groups.	as a result of the designations would be less than Alternative B.		
Visual Resources	Adverse impacts to socioeconomics would be negligible to minor given the amount of VRM III and IV lands (over 1 million acres) open for mineral development and the small amount of wells projected to be drilled over the life of the plan (76 wells).	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A, though fewer acres of VRM III and VRM IV.

SOIL AND WATER RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Air Quality	No impacts to soils and water resources.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Cultural Resources	Adverse impacts to soils and water resources from watershed treatments and limited controls on disposal of human waste, pets and livestock, and other soil disturbing activities. Long-term, adverse impacts of cultural decisions on soils and water resources would be	Same as Alternative A, except 78,012 acres would be protected as designated CSMAs, with fewer adverse impacts to soils and water resources than Alternative A due to greater restrictions on human waste, pets and livestock.	Adverse impacts to soils and water resources same as Alternative A with same restrictions as Alternative B, except a smaller area would be designated as CSMAs. This alternative would have fewer short- and long-term adverse impacts on soils and water resources than	Adverse impacts on soils and water resources same as Alternative A, but to a greater degree. This alternative would have fewer short- and long-term adverse impacts than Alternative A, but greater impacts than Alternatives B and C.	Adverse impacts on soils and water resources same as Alternative A with same restrictions as Alternative B, except the Comb Ridge and Beef Basin CSMAs would also be closed to oil and gas leasing, new improvements for range/wildlife/watersheds and OHV use. This

SOIL AND WATER RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	partially mitigated due to the closure of the Grand Gulch Special Emphasis area to surface disturbing activities (37,433 acres).		Alternative A, but greater impacts than Alternative B.		alternative would provide greater protection for soils and water resources than any other alternative.
Fire Management	Short-term, adverse impacts on soils and water resources due to increased sedimentation and run-off in areas where vegetation has been treated, with long-term beneficial impacts due to reduced fuel loading and reduced fire risk.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Health and Safety	Short term, beneficial impacts on soils and water resources where Abandoned Mine Lands (AMLs) are rehabilitated; long term, beneficial impacts on soils and water resources by reducing the detrimental impacts of AML water drainage.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Lands and Realty	No impacts to soils and water resources.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Livestock Grazing	Long-term, beneficial impacts from livestock grazing reductions on 23,200 acres of soils with limitations.	Long-term, beneficial impacts from seasonal restrictions, closures, and/or forage utilization limits on grazing in riparian areas, especially those Functioning at Risk. Alternative B would exclude grazing on	Same as Alternative B.	Same as Alternative A.	Same as Alternative B.

SOIL AND WATER RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
		26,200 acres, which would have greater long-term, beneficial impacts than Alternative A.			
Minerals and Energy Resources	Short-term and long-term, adverse impacts from minerals disturbances from loss of vegetative cover, sedimentation of surface waters and loss of soil productivity. Under Alternative A, the following approximate acreages of sensitive soils would be open for mineral leasing and potential adverse impacts: 77,600 acres of highly wind erodible soils; 15,000 acres of highly water erodible soils; 217,300 acres of reclamation sensitive soils, and a total 1,585 acres estimated surface disturbance from mineral development and exploration.	Same impacts as Alternative A, except: 74,000 acres of highly wind erodible soils; 15,100 acres of highly water erodible soils; 276,930 acres of reclamation sensitive soils would be open for mineral leasing. A total of 3,300 more wind erodible; 200 less water erodible; and 37,500 less reclamation sensitive soils would be closed compared to Alternative A. Total estimated surface disturbance from mineral development and exploration would be 155 fewer acres than under Alternative A.	Same impacts as Alternative A, except: 65,200 acres of highly wind erodible soils; 34,800 acres of highly water erodible soils; and 311,700 acres of reclamation sensitive soils would be open for mineral leasing. A total of 5,800 less wind erodible, 4,800 more water erodible, and 19,100 less acres of reclamation sensitive soils would be closed compared to Alternative A. Total estimated surface disturbance from mineral development and exploration would be 28 more acres than under Alternative A.	Same impacts as Alternative A, except: 84,700 acres of highly wind erodible soils; 17,000 acres of highly water erodible soils; and 314,800 acres of reclamation sensitive soils would be open for mineral leasing. A total of 21,600 less wind erodible acres, 2,100 less water erodible, and 22,300 less acres of reclamation-limited soils would be closed compared to Alternative A. Total estimated surface disturbance from mineral development and exploration would be 60 more acres than under Alternative A.	Same impacts as Alternative A, except: 29,732 acres of highly wind erodible soils; 7,878 acres of highly water erodible soils; 196,031 acres of reclamation sensitive soils would be open for mineral leasing. A total of 47,769 more wind erodible, 7,028 more water erodible, and 96,491 more acres of reclamation sensitive acres would be closed compared to Alternative A. Total estimated surface disturbance from mineral development and exploration would be 476 fewer acres than under Alternative A.
Non-WSA Lands with Wilderness Characteristics	No effect on soil and water resources as no actions are prescribed to protect the wilderness characteristics of non-WSA lands with wilderness characteristics.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	A total of 582,360 acres of non-WSA lands would be managed to maintain their wilderness characteristics, with long-term beneficial impacts to soils and water resources.
Paleontology	Negligible impacts to soils and water resources.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

SOIL AND WATER RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Recreation	Potential short- and long-term impacts to soils and water resources associated with recreation activities include damage to streambanks and associated vegetation, soil compaction, increased erosion, and sedimentation of surface waters.	Impacts same as Alternative A, except to a lesser degree, from restrictions on recreation-related soil and water resource impacts within SRMAs.	Same as Alternative B.	Same as Alternative B, except more adverse, long term impacts from fewer restrictions and limits on recreational use.	Same as Alternative B.
Riparian Resources	Long-term, beneficial protection of soils and water resources from NSO in riparian areas, management to achieve riparian PFC, and no new surface disturbing activities allowed within active floodplains or within 100 meters of riparian areas.	Same as Alternative A, except selected areas would be closed to motorized use and livestock trailing, which would result in minor beneficial reductions in impacts to soils and water resources.	Same as Alternative B.	Same as Alternative A.	Same as Alternative B.
Soil and Water Resources	There would be no additional impacts under Alternative A.	Long-term, beneficial impacts from prohibitions on steep-slope surface-disturbing activities (slopes >40%), and erosion control designs and plans for slopes between 21 and 40%. These measures would reduce erosion and sedimentation relative to Alternative A.	Long-term, beneficial impacts from restrictions on surface disturbance on slopes >40% unless it were determined that it would cause undue or unnecessary degradation to pursue other placement alternatives. These measures would reduce erosion and sedimentation relative to Alternative A.	Adverse impacts same as A, but to a lesser degree, from required plans and erosion control strategies for slopes >40%. Under Alternative D, the impacts of soils and watershed management decisions on soils resources would require a plan including an erosion control plan. These measures would reduce erosion and sedimentation relative to Alternative A.	Same as Alternative B, except there would be additional restrictions on surface disturbing activities in non-WSA lands with wilderness characteristics. Overall impacts to soils and water resources would be less adverse under Alternative E than under any of the alternatives.

SOIL AND WATER RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Special Designations	Long-term, adverse impacts from mineral leasing, geophysical work, mineral material disposal, mineral entry, woodland harvesting, vegetation treatments, grazing, and OHV use within ACECs. A total of 113,000 acres of sensitive soils would be within designated ACECs, wherein impacts to soil and water resources would be reduced.	Impacts same as Alternative A, except with fewer adverse impacts within ACECs from greater surface disturbance restrictions. ACEC designation would result in the protection of 7,385 more acres of sensitive soils than under Alternative A.	Impacts same as Alternative B, but to a greater degree from an increase in allowable surface-disturbing activities. ACEC designation would result in the protection of 98,000 fewer acres of sensitive soils than under Alternative A.	Long-term, adverse impacts from allowed surface disturbance impacts to soils and water. There no special designations and zero acres of sensitive soils protected, which is 113,000 fewer acres than Alternative A. This alternative would have the least protections for sensitive soils of the alternatives.	Same as Alternative B.
Special Status Species	Long-term, beneficial impacts to soils and water from special status species habitat protection.	Beneficial impacts same as Alternative A, except to a greater degree, due to more acres of protected habitat for special status species that would protect soils and water resources.	Beneficial impacts same as Alternative B, except to a lesser degree due to fewer acres of protected habitat for special status species.	There would be negligible beneficial impacts compared to Alternative A, as this alternative would have the fewest acres with surface disturbance restrictions in special status species habitat, with the greatest potential for long-term, adverse impacts on soils and water resources of the alternatives.	Same as Alternative B.
Travel Management	Potential short- and long-term impacts to soils and water resources associated with travel management decisions include damage to streambanks and associated vegetation, soil compaction, increased erosion, and sedimentation of surface	Impacts same as Alternative A, except a total of 63,900 acres would be open to OHV use on designated routes, which is 221,800 fewer acres of sensitive soils open than under Alternative A.	Same as Alternative B, except 64,400 acres of sensitive soils would be open to OHV use on designated routes, which is 221,300 fewer acres of sensitive soils open than under Alternative A.	Same as Alternative B, except 64,500 acres of sensitive soils would be open to OHV use, mostly limited to designated routes, which is 221,200 fewer acres of sensitive soils open than under Alternative A.	Same as Alternative B, except no OHV travel would be permitted in non-WSA lands with wilderness characteristics (582,360 acres), which is 296,660 more acres of closed or limited OHV use than Alternative A.

SOIL AND WATER RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	waters. A total of 285,700 acres of sensitive soils would be closed to OHV use or limited to designated routes.				
Vegetation	Short-term adverse impacts from vegetation treatment-related increased erosion and water runoff. Long-term, beneficial impacts from reduced soil compaction, erosion, and sedimentation through increase in native vegetation cover, and a reduction of invasive weed species. Existing vegetation treatments would occur on 232,100 acres.	Fewer short-term adverse impacts and fewer long-term beneficial impacts than Alternative A on soils and water resources than Alternative A from treatments on 6,600 acres/year, with 133,100 fewer acres of vegetation treatment over the LOP than Alternative A. Alternative B would have fewer short-term adverse impacts and long-term beneficial impacts to soils and water resources than Alternative A	Same as Alternative B, except 7,800 acres would be open to vegetation treatments each year to restore ecosystem health, with 115,100 fewer acres of vegetation treatment over the LOP than Alternative A. Alternative C would have fewer short-term adverse impacts and long-term beneficial impacts to soils and water resources than Alternative A, more than Alternatives B and E.	More long-term beneficial impacts from vegetation treatments on soils and water resources under Alternative D than under Alternatives B or C due to 9,300 acres/year targeted for vegetation treatment, with 92,600 fewer acres of vegetation treatment over the LOP than Alternative A.	Same as Alternative B.
Visual Resources	Under Alternative A, 187,400 acres of sensitive soils would be managed as VRM Class I & II, with the second greatest level of beneficial, long-term protection for soils and water resources due to an increase in surface disturbing restrictions under VRM Class I & II objectives.	Under Alternative B, 186,000 acres of sensitive soils, 1,400 fewer acres than Alternative A, would be managed as VRM Class I & II, with the second greatest long-term, beneficial impacts from surface disturbance restrictions.	Same impacts as Alternative B, except 146,600 acres of sensitive soils, 40,800 fewer acres than Alternative A, would be managed as VRM Class I & II with beneficial impacts from surface disturbance restrictions.	Greatest potential for adverse impacts due to 87,500 acres of sensitive soils, 99,900 fewer acres than Alternative A, managed as VRM Class I & II to restrict surface disturbances.	Under Alternative E, 293,059 acres of sensitive soils, 105,659 more acres than Alternative A, would be managed as VRM Class I & II, with the greatest potential long-term, beneficial impacts from surface disturbance restrictions.

SOIL AND WATER RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Wildlife and Fisheries Resources	Maintenance and/or improvement of wildlife and fisheries habitats would have indirect, beneficial impacts by ensuring the ecological functions of these systems, including soils and water within lowland riparian and wetland areas, and low and high desert scrub communities.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Woodlands	Under Alternative A, 1,309,894 acres would be open to woodland harvest, with the highest risk of adverse, long-term impacts to soils and water resources from vegetation loss and surface disturbances by motorized OHV and foot traffic during harvesting.	Adverse impacts same as Alternative A, except to a lesser degree due to 579,820 (44%) fewer acres open to woodland harvest than under Alternative A. This alternative would have fewer adverse impacts on soils and water resources than Alternative A, but greater impacts than Alternative E.	Adverse impacts same as Alternative A, except to a lesser degree due to 467,956 (36%) fewer acres open to woodland harvest than under Alternative A.	Same as Alternative C.	Adverse impacts same as Alternative A, except to a lesser degree due to 761,417 (58%) fewer acres open to woodland harvest than under Alternative A. This alternative would have the least adverse impacts on soils and water resources of the alternatives.

SPECIAL DESIGNATIONS					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Special Designations	Management of 488,616 acres as ACECs, but under prescriptions that would generally not be as beneficially protective of ACEC values as Alternatives B, C, and E. River segments	521,141 acres managed as ACECs, with long term, beneficial impacts from protection of ACEC values. 92.4 miles of river segments would beneficially protected	Smallest area (76,764 acres) of the Monticello Planning Area as ACECs, except for Alternative D. Alternative C would be more beneficial to ACECs' values than Alternatives D or A, and	Long-term, adverse impacts from no ACEC designation to protect relevant and important resource values. Long-term, adverse impacts along river corridors from no recommended	Impacts the same as Alternative B, except additional long-term, beneficial impacts to ACEC relevant and important values from management of 109,206 acres of non-WSA lands

SPECIAL DESIGNATIONS					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	determined eligible in the 1991 San Juan RMP would be beneficially protected, and WSAs would be managed to beneficially protect their wilderness values.	under suitability recommendations, with WSA impact same as Alternative A.	less beneficial than Alternatives B and E. 18.4 miles of river beneficially protected in the long term under suitability recommendations, with WSA impacts same as Alternative A.	suitability. WSA impacts same as Alternative A.	with wilderness characteristics to protect wilderness values. River suitability recommendation impacts same as Alternative B, with WSA impacts same as Alternative A.
All other resources	Impacts to specially designated areas from other resource management decisions are discussed under the applicable resources' analysis of impacts.				

SPECIAL STATUS SPECIES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Air Quality	No impacts to special status species.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Cultural Resources	Long-term, adverse impacts from cultural resource decisions include disturbance of wildlife, trampling of sensitive plants, and introduction of invasive species. These impacts would be partially mitigated by the closure of Grand Gulch Special Emphasis Area (37,433 acres) to surface disturbing activities such as woodland products gathering, mineral leasing, OHV use, and vegetation treatments.	Adverse impacts same as Alternative A, except surface disturbance restrictions on 62,567 acres would reduce impacts to special status wildlife and plants from surface disturbance. This alternative would restrict surface disturbing activities on 25,134 more acres than Alternative A.	Same total acreage and impacts as Alternative B, except more surface disturbing activities and visitors would be permitted in these areas than Alternative B, with overall impacts less than under Alternative A.	No acres would be designated as special management areas, which would have greater short-term and long-term, adverse impacts than Alternatives B and C, but fewer impacts than Alternative A.	Impacts same as Alternative B, except for additional reductions in adverse impacts to special status species due to restrictions on surface disturbing activities in non-WSA lands with wilderness characteristics, which includes 8,514 acres within Comb Ridge.

SPECIAL STATUS SPECIES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Fire Management	Short-term adverse impacts from surface disturbance associated with fuels treatments, including trampling and crushing, habitat alteration, and introduction of invasive species. Long-term beneficial impacts would also occur due to reduced fuel loading, reduced fire risk, and diversified habitat on 5,000-10,000 acres/year.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Health and Safety	Potential adverse loss of special status bat habitat. Benefits to fish species due to reduced threat of groundwater contamination.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Lands and Realty	Long-term, adverse impacts from potential land disposal on 5,911 acres, and permitted facility construction of roads, pipelines, wind power generators, solar power generators, and communication towers.	Long-term, adverse impacts from potential land disposal of 2,280 additional acres (28% more than under Alternative A). Impacts of lands and realty decisions on special status species would be less than under. Alternative A. Authorization of ROWs would not be permitted in WSAs, WSR corridors, VRM class I, II and III areas, ACECs, raptor and migratory bird habitat, and special status species habitat.	Impacts same as Alternative A due to an increase in acres of surface disturbance associated with the allowance of ROWs in ACECs, VRM class II and III areas, and non-federally listed special status species habitat.	Alternative D would have the greatest adverse, long-term impacts because surface disturbance would be allowed in more of the planning area than under the other alternatives.	Same as Alternative B, except for long-term, beneficial impacts to special status species habitat from ROWs exclusions in non-WSA lands with wilderness characteristics (33% of the planning area).

SPECIAL STATUS SPECIES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Livestock Grazing	Adverse impacts include trampling, reduced forage and cover, reduced habitat quality and biodiversity, and introduction of invasive species. Under Alternative A, 78,394 acres of special status species habitat would be unavailable for grazing.	Adverse and beneficial impacts same as Alternative A, except 83,724 acres of special status species habitat would be unavailable for grazing, which is 5,330 (7%) more acres than under Alternative A.	Adverse and beneficial impacts same as Alternative B, except Mule Canyon south of I-95 (1,324 acres) would be unavailable for grazing, with the same total acres of special status species habitat excluded as Alternative B.	Alternative D would have the least beneficial impacts of the action alternatives due to only 13 more acres unavailable to grazing than Alternative A.	Same as Alternative B.
Minerals and Energy Resources	Adverse impacts from mineral development and exploration include direct mortality, surface disturbance, habitat degradation, and habitat fragmentation. Oil and gas leasing would include 212,532 acres of special status species habitat open to standard stipulations and 123,893 acres closed to leasing and mineral entry.	Adverse impacts same as Alternative A, except fewer acres of special status species habitat would be affected: 43,594 acres open to standard lease terms; 407,592 acres CSU and/or timing limitations; 71,142 acres NSO; and 136,182 acres closed.	Adverse impacts same as Alternative A, except more acres of special status species habitat would be affected than Alternatives A, B or E: 121,565 acres open to standard lease terms; 375,940 acres CSU and/or timing limitations; 19,803 acres NSO; and 136,226 acres closed.	Adverse impacts same as Alternative A, except the most acres of special status species habitat would be affected: 219,060 acres open to standard lease terms; 287,574 acres CSU and/or timing limitations; 20,404 acres NSO; and 126,559 acres closed.	Adverse impacts same as Alternative A, except the fewest acres of special status species habitat would be affected: 26,447 acres open to standard lease terms; 237,625 acres CSU and/or timing limitations; 41,135 acres NSO; and 348,386 acres closed.
Non-WSA Lands with Wilderness Characteristics	No impacts to special status species as non-WSA lands with wilderness characteristics are not protected under this alternative.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Long-term, beneficial impacts to species from restricted surface disturbances to habitat within 582,357 acres of non-WSA lands with wilderness characteristics.
Paleontology	No impacts to special status species.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Recreation	Long-term, adverse impacts from human presence, noise, and	Long-term, adverse impacts same as Alternative A, except with	Long-term, adverse impacts same as Alternative A, with same	Long-term, adverse impacts same as Alternative A, except this	Same as Alternative B.

SPECIAL STATUS SPECIES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	surface disturbance associated with mechanized and dispersed recreation on 361,972 acres of federally listed species habitat within SRMAs.	increased protection for special status species and 180,032 fewer acres of federally listed species habitat within SRMAs than under Alternative A.	acres of federally listed species habitat within SRMAs as Alternative B, but greater potential impacts due to more recreational users within SRMAs.	alternative would have the most acres of potential special status species habitat subject to adverse impacts from recreation. Adverse impacts would be greater than Alternative A, even with 184,576 fewer acres of federally listed species habitat within SRMAs,	
Riparian Resources	Short-term adverse impacts to special status plant and fish species could occur from vegetation treatments. Long-term beneficial impacts include reduced weeds and restoration of native vegetation.	Impacts same as Alternative A, except with long-term, beneficial impacts from closing OHV routes in riparian areas, closing areas to livestock grazing, seasonal restrictions, and setting forage use limits.	Impacts same as Alternative B with fewer adverse impacts to special status species and habitats than Alternatives A and D.	Impacts same as Alternative A, with greater impacts to special status species and habitats than Alternatives B and C.	Same as Alternative B.
Socioeconomics	No impacts to special status species.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Soil and Water Resources	Adverse impacts include habitat loss or degradation from erosion in upland habitats, and sedimentation and contamination of special status fish habitats. Alternative A would have the greatest potential for adverse impacts on special status species habitat due to limited surface disturbance restrictions on steep slopes.	Impacts same as Alternative A, except surface disturbing activities would be prohibited on slopes >40%, with erosion control measure required on 21 to 40% slopes. Impacts would be less than Alternatives A, C and D.	Impacts same as Alternative A, with greater potential for adverse impacts on slopes >40% than Alternatives B and E. Impacts would be less than Alternatives A and D.	Impacts same as Alternative A, with greater potential for adverse impacts on slopes >40% than Alternatives B, C and E due to fewer steep-slope erosion control restrictions, but with fewer adverse impacts than Alternative A.	Same as Alternative B.

SPECIAL STATUS SPECIES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Special Designations	Beneficial impacts within 488,616 acres designated as ACECs, with long-term adverse impacts on 106,569 acres available to mineral leasing within ACECs, and impacts associated with permitted woodland harvesting, open OHV use, livestock grazing, and vegetation treatments.	Impacts same as Alternative A, except 521,141 acres of designated ACECs with 147,706 acres available for oil and gas leasing. Overall fewer impacts than Alternative A due to more acres subject to surface disturbance restrictions.	Impacts same as Alternative A, except 417,343 acres of designated ACECs with 34,885 acres available for oil and gas leasing. Overall greater impacts than Alternative A due to fewer acres subject to surface disturbance restrictions.	No acres designated as ACECs and limited restrictions on surface disturbances to special status species habitat. Overall greater impacts than Alternatives A, B, C and E.	Same as Alternative B.
Special Status Species	Long-term, beneficial impacts on species from restrictions, protective measures, and spatial and seasonal buffers to preserve species habitat.	Impacts same as Alternative A, except Alternative B would provide more acres of protected habitat for special status species.	Impacts same as Alternative A, except Alternative C would provide fewer acres of protected habitat for special status species than Alternatives A, B and E.	Impacts same as Alternative A, except Alternative D would protect the fewest acres of special status species habitat from surface disturbance with greater potential impacts than any of the alternatives.	Same as Alternative B.
Travel Management	Adverse impacts include surface and noise disturbance, crushing of individual plants and animals, habitat, and introduction of invasive species. Adverse impacts would be reduced by the closure of 276,430 acres to OHV use. Beneficial impacts from fewer miles of available OHV trails due to reduced potential for habitat fragmentation.	Impacts same as Alternative A, except 147,268 acres (35%) more acres closed to OHV use than Alternative A and fewer associated adverse impacts to special status species and their habitat.	Impacts same as Alternative A, except 142,237 acres (34%) more acres closed to OHV use than Alternative A, with slightly greater impacts than under Alternative B.	Impacts same as Alternative A, except no acres closed to OHV use and the greatest potential long-term adverse impacts to special status species from travel of any of the Alternatives.	Same as Alternative B.
Vegetation	Short-term adverse impacts include trampling and removal of habitat, and collection of sensitive	Adverse impacts same as Alternative A, except 7,875 (51%) fewer acres of vegetation treatments	Adverse impacts same as Alternative A, except to a lesser degree due to 6,175 (40%) fewer acres	Adverse impacts same as Alternative A, expect to a lesser degree due to 4,175 (27%) fewer acres	Same as Alternative B, except 582,357 acres would have restrictions on vegetation treatments,

SPECIAL STATUS SPECIES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	plant species on 232,130 acres open to vegetation treatments per year. Beneficial impacts from habitat improvements and control of invasive and weedy species.	per year, and greater beneficial impacts on species and habitat due to treatment of specific vegetation communities compared to unfocused treatment under Alternative A.	of vegetation treatments per year. Long-term beneficial impacts would be less than Alternative A due to unfocused treatments occurring on fewer acres.	of vegetation treatments per year. Long-term beneficial impacts would be greater than under Alternatives B or C due to more targeted vegetation treatments.	with fewer short-term adverse impacts than Alternative A, and more long-term beneficial impacts due to habitat protection for special status species.
Visual Resources	Under Alternative A 726,687 acres would be subject to VRM Class I or II restrictions, with long-term beneficial impacts to special status species due to restrictions on surface disturbing activities.	Impacts same as Alternative A, except 21,622 (3%) more acres subject to VRM Class I or II restrictions, and greater protection from surface disturbing activities than Alternative A.	Impacts same as Alternative A, except 169,507 (23%) less acres subject to VRM Class I or II restrictions and less protection from surface disturbing activities than Alternative A.	Impacts same as Alternative A, except 327,426 (45%) less acres subject to VRM Class I or II restrictions, and the least protection from surface disturbing activities of the alternatives	Impacts same as Alternative A, except 383,161 (53%) more acres subject to VRM Class I or II restrictions than Alternative A and the greatest protection for special status species habitats.
Wildlife and Fisheries Resources	Long-term, beneficial impacts from seasonal restrictions in migratory bird habitat, and maintenance and improvements to riparian, wetland, and desert scrub habitats. Long-term, beneficial impacts on 279,787 acres of special status species habitat due to seasonal restrictions for big game.	Long-term, beneficial impacts same as Alternative A, but to a greater degree due to 278,254 (99%) more acres of special status species habitat with seasonal restrictions for big game, and more acres subject to special wildlife conditions than under Alternative A.	Long-term, beneficial impacts same as Alternative A, but to a greater degree due to 47,112 (17%) more acres of special status species habitat with seasonal restrictions for big game, and more acres subject to special wildlife conditions than under Alternative A.	Long-term, beneficial impacts same as Alternative A, but to a less degree due to 14,563 (5%) fewer acres of special status species habitat with seasonal restrictions for big game, but 17% more acres subject to special wildlife conditions than under Alternative A.	Same as Alternative B.
Woodlands	Adverse impacts include removal or alteration of habitat, noise, trampling and crushing during harvesting, and surface disturbance. Beneficial impacts from reduced potential for wildfire and enhancement of	Impacts same as Alternative A, except to a lesser degree due to 579,820 (44%) fewer acres open to woodland harvest and wood gathering, and fewer potential long-term benefits from wildfire	Impacts same as Alternative A, except to a lesser degree due to 467,956 (36%) fewer acres open to woodland harvest and wood gathering, and fewer potential long-term benefits from wildfire	Same as Alternative C.	Same as Alternative B with additional protections on 582,357 acres of non-WSA lands with wilderness characteristics, which would be closed to woodland harvesting and wood gathering, and

SPECIAL STATUS SPECIES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	understory habitats. 1,309,894 acres would be open to woodland harvest and wood gathering and pose the greatest potential disturbance to special status species in woodland habitats.	reduction than Alternative A.	reduction than Alternative A.		provide reduced surface disturbances in special status species habitat.

TRAVEL MANAGEMENT					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Air Quality	Minor, short-term adverse impacts from reroutes or travel delays for dust abatement.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Cultural Resources	Long-term, adverse impacts from closure of McLoyd Canyon-Moon House road.	Long-term, adverse impacts from OHV exclusion from Tank Bench and McLoyd Canyon-Moon House road closure.	Impacts in Tank Bench same as Alternative B. Impacts on travel in McLoyd Canyon-Moon House same as Alternative A.	Long-term, beneficial impacts to travel from access to Tank Bench and McLoyd Canyon-Moon House.	Same as Alternative B.
Fire Management	Short-term, minor, adverse impacts from route closures from prescribed burns or wildland fire.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Lands and Realty	Minor, beneficial, long-term impacts from granting ROWs for minerals leasing (to extend travel routes along spur roads).	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Minerals and Energy Resources	Impacts same as Lands and Realty.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

TRAVEL MANAGEMENT					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Non-WSA Lands with Wilderness Characteristics	No impacts to travel management as non-WSA lands with wilderness characteristics are not protected under this alternative.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Long-term, adverse impacts to travel and access as 582,360 acres and 179 miles of D-Class routes are closed to OHV travel.
Recreation	Long-term, adverse impacts from travel access restrictions within the San Juan River SRMA between Comb Wash and Lime Creek.	Long-term, adverse impacts from travel access restrictions within the San Juan River SRMA between Comb Wash and Lime Creek. Short- term, adverse impacts from seasonal prohibitions on commercial travel within crucial wildlife habitat.	Impacts along San Juan River SRMA same as Alternative B. Short-term, adverse impacts on travel from seasonal limits in big game habitat.	Impacts along San Juan River SRMA same as Alternative B.	Same as Alternative B.
Riparian Resources	Negligible impacts from actions that would not specifically restrict travel through riparian areas.	Short-term, adverse impacts from temporary travel closures until restoration of riparian PFC. Long-term, adverse impacts from closure if travel activities were determined to be causing riparian degradation.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
Special Designations	Impacts same as discussed under Recreation, Travel, and Riparian above for OHV and road travel.	Impacts same as discussed under Recreation, Travel, and Riparian above for OHV and road travel.	Impacts same as discussed under Recreation, Travel, and Riparian above for OHV and road travel.	Impacts same as discussed under Recreation, Travel, and Riparian above for OHV and road travel.	Impacts same as discussed under Recreation, Travel, and Riparian above for OHV and road travel.
Special Status Species	Impacts same as discussed under Recreation and Travel above.	Impacts same as discussed under Recreation and Travel above.	Impacts same as discussed under Recreation and Travel above.	Impacts same as discussed under Recreation and Travel above.	Impacts same as discussed under Recreation and Travel above.
Travel Management – OHV	Long-term, beneficial impacts from Open OHV and Limited route travel	Long-term, adverse impacts from no designated Open OHV	Similar to Alternative B, except 2,311 acres open to OHV use, and	Minor impacts on travel from no OHV Closed areas, seasonal	Same as Alternative B.

TRAVEL MANAGEMENT					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	areas. Limited OHV with seasonal restrictions routes would have short-term, adverse impacts on travel.	areas, and Arch Canyon closure to OHV travel.	conditional motorized travel in 4 WSAs.	restrictions on commercial OHV travel, and OHV access to Arch Canyon	
Travel Management – Non-mechanized	Long-term, beneficial impacts from no restrictions on non-mechanized travel, and travel opportunities that exclude motorized and mountain biking travel to reduce user conflicts.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Travel Management – Roads	Negligible impacts to travel from no road closures, and unrestricted travel along B- and D-Class roads.	Long-term, adverse impacts from B- and D-Class road closures to resolve resource use conflicts.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
Travel Management – Scenic Byways and Backways	Long-term, beneficial impacts from management for high-quality travel opportunities along these routes.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Vegetation	Same impacts as discussed under Fire because treatments are the same.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Wildlife and Fisheries Resources	Negligible to minor impacts from lack of restrictions on travel except for restrictions on cross-country OHV travel within bighorn sheep habitat.	Short-term, adverse impacts from seasonal restrictions in wildlife crucial habitat for commercial and permitted travel. No impacts on private travel.	Same as Alternative B.	Same as Alternative A.	Same as Alternative B.

TRAVEL MANAGEMENT					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Woodlands	Negligible impacts on travel from unspecified actions.	Short-term, adverse impacts from route closures to protect wildlife species.	Same as Alternative A.	Same as Alternative A.	Long-term, adverse impacts from prohibitions on off-road travel within areas with non-WSA wilderness characteristics.

VEGETATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Air Quality	No impacts to vegetation resources.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Cultural Resources	Long-term, adverse impacts of cultural resource decisions on vegetation would be partially mitigated by closure of the Grand Gulch Special Emphasis area to surface disturbing activities such as woodland harvesting, mineral leasing, OHV use, and mechanized or mechanical surface disturbance (including vegetation treatments). These restrictions would limit vegetation-harming surface disturbance associated with these activities on 37,387 acres.	Fewer short- and long-term adverse impacts than under Alternatives A, C or D, due to restrictions on surface disturbing activities on 62,567 acres of designated CSMAs. This alternative would have fewer adverse impacts on vegetation than Alternatives A, C and D.	Same beneficial surface disturbance restrictions and impacts as under Alternative B, except some CSMAs would have fewer restrictions on surface disturbing activities than Alternatives B and E, but greater restrictions than Alternatives A and D. This alternative would have fewer short- and long-term adverse impacts than Alternative A and D, but more than Alternatives B and E.	Same impacts as Alternative C, except fewer areas would be managed as CSMAs. Overall, this alternative would have fewer short- and long-term adverse impacts than Alternative A, but more than Alternatives B, C and E.	Same as B, except more short- and long-term beneficial impacts from vegetation resource preservation within Comb Ridge to preserve non-WSA lands with wilderness characteristics.
Fire Management	Surface-disturbing fuels treatments on 5,000 to 10,000 acres/year would have long-term beneficial and short-term adverse	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

VEGETATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	impacts on vegetation communities in treated areas. Thinning vegetation and treating areas for weeds would benefit vegetation by removing competition from weedy natives and invasive species. Short-term, adverse impacts include trampling and crushing of individual plants during treatment.				
Health and Safety	No impacts to vegetation resources.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Lands and Realty	Under Alternative A, construction of roads, pipelines, wind power generators, solar power generators, and communication towers would result in adverse impacts to vegetation from removal of individual plants and other surface disturbances, which can lead to the introduction of weedy plant species.	There would be fewer adverse impacts on vegetation resources under this alternative than Alternative A due to restrictions on ROWs for wind and solar energy development in WSAs, WSR corridors, VRM Class I and II areas, ACECs, raptor and migratory bird habitat, and special status species habitat. Overall, Alternative B would have fewer adverse impacts on vegetation resources than Alternatives A, C or D.	Adverse impacts would be same as under Alternative A due to increased surface disturbance associated with ROWs in ACECs, VRM Class II and III areas, and non-federally listed sensitive species habitat. Overall, Alternative C would have fewer impacts on vegetation resources than Alternatives A and D, but more than B and E.	Alternative D would have greater adverse impacts on vegetation resources than Alternative A due to more acres of surface disturbance associated with ROWs than would occur under any of the other alternatives.	Same impacts as Alternative B, except ROWs would be prohibited in non-WSA lands with wilderness characteristics, which would reduce long-term, adverse impacts to vegetation more than any of the other alternatives.
Livestock Grazing	Beneficial impacts from 17,300 acres allotted to wildlife on the slopes of Peter's Canyon and East Canyon, which would help maintain native	Same impacts as Alternative A, except allotment closures would exclude more acreage from grazing than any of the other alternatives,	Same as Alternative B, except the Mule Canyon Allotment south of U-95 would be unavailable. This alternative would have similar impacts as	Alternative D would have the smallest area excluded from grazing and, therefore greater adverse impacts to vegetation.	Same as Alternative B.

VEGETATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	vegetation in those areas due to the lower grazing impact of lower numbers of wildlife than livestock.	which would have long-term, beneficial impacts on native vegetation in excluded areas.	Alternative B, and lower impacts than Alternative A.		
Minerals and Energy Resources	Approximately 73 wells drilled (701 acres of surface disturbance), 886 acres of short-term impacts from geophysical exploration, and infrastructure construction with direct adverse impacts on vegetation. Overall, the second fewest number of acres of native vegetation would be impacted by minerals development under this alternative.	Impacts would be the same as Alternative A, except there would be approximately 66 wells and 634 acres of disturbance (10% fewer acres than under Alternative A), and 794 acres of adverse impacts from geophysical exploration (10% fewer acres than under Alternative A). Alternative B would have fewer adverse impacts than Alternative A and greater impacts than Alternative E.	Impacts would be the same as Alternative A, except there would be approximately 74 wells and 710 acres of disturbance (1% more than under Alternative A), and 904 acres of adverse impacts from geophysical exploration (2% more than under Alternative A). Overall, this alternative would have greater adverse impacts to vegetation than Alternatives A, B and E, and slightly fewer impacts than Alternative D.	Impacts would be the same as Alternative A, except there would be approximately 75 wells and 720 acres (2% more than under Alternative A), and 924 acres of surface disturbance from geophysical exploration (4% more than under Alternative A). This alternative would have greater adverse impacts to vegetation than any of the alternatives.	Same as Alternative B, except for long term, beneficial impacts from mineral leasing prohibitions on 582,357 acres of non-WSA lands with wilderness characteristics. Alternative E would have the most acres closed or NSO to oil and gas leasing, and the least negative impacts on vegetation resources of the alternatives.
Non-WSA Lands with Wilderness Characteristics	No impacts to vegetation, as non-WSA lands with wilderness characteristics are not protected under this alternative.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Long-term, beneficial impacts from resource preservation on 582,357 acres. Long-term and short-term, adverse impacts from prohibitions on mechanical treatment of vegetation and harvesting to reduce fire risks and invasive species spread.
Paleontology	Short-term adverse impacts on vegetation due to trampling.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Recreation	Alternative A would have the second most acres of native vegetation subject	Alternative B would have the fewest user/days per year and number of	Impacts same as Alternative B, but to a less beneficial degree,	Same impacts as C, but to a less beneficial degree due to fewer	Same impacts as Alternative B, except protection of non-WSA

VEGETATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	to adverse impacts associated with recreation activities of the alternatives.	visitors per day of the alternatives, which would reduce trampling of native vegetation and introduction of weedy plant species associated with human presence. This alternative would have greater long-term, beneficial impacts and fewer adverse impacts on vegetation than any of the other alternatives.	due to fewer restrictions on surface disturbances to vegetation.	restrictions on surface disturbances to vegetation.	lands with wilderness characteristics would beneficially limit or prohibit surface disturbances to vegetation within SRMAs. This alternative would have the least impacts on vegetation of the alternatives.
Riparian Resources	Vegetation treatments would have both beneficial and adverse impacts on vegetation in riparian habitat. Beneficial impacts would include reduction of weed populations and the restoration of diverse native vegetation. Adverse impacts would include crushing and removal of native vegetation during the treatment process.	If determined to be the cause, OHV routes in selected riparian areas would be closed if riparian areas are found to be Functioning at Risk. In addition, some riparian areas would be unavailable for grazing, while others would be subject to seasonal restrictions and forage utilization limits if found to be Functioning At Risk. These restrictions would reduce adverse impacts to riparian vegetation. This alternative would have fewer impacts on vegetation than Alternatives A and D.	Same as Alternative B.	Same as Alternative A.	Same as Alternative B, except surface disturbing activities would be limited or prohibited in non-WSA lands with wilderness characteristics. This alternative would have the greatest beneficial impacts and least adverse impacts on riparian vegetation of the alternatives.
Socioeconomics	No impacts to vegetation resources.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Soil and Water Resources	Long-term, adverse impacts on vegetation due to limited restrictions	Long-term, beneficial impacts on vegetation from prohibitions on	Long-term, beneficial impacts on vegetation due to restrictions on	Impacts same as A, but to a less adverse degree due to required plans and	Same as Alternative B, except surface disturbing activities would be limited

VEGETATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	on surface disturbances on steep slopes.	surface disturbing activities on slopes >40%, and erosion control designs and plans for surface disturbing activities on slopes between 21 and 40%. This alternative would have fewer adverse impacts on vegetation than Alternatives A, C, and D.	surface disturbance on slopes >40%, unless it were determined that it would cause undue or unnecessary degradation to pursue other placement alternatives. This alternative would have fewer adverse impacts on vegetation than Alternatives A and D, but greater impacts than Alternatives B and E.	erosion control strategies for slopes >40%, which would help mitigate adverse impacts on vegetation located on and down slope from disturbance areas on steep slopes. This alternative would have greater adverse impacts on vegetation than Alternatives B, C, and E, but fewer impacts than Alternative A.	or prohibited in non-WSA lands with wilderness characteristics. This alternative would have the least adverse impacts on vegetation of the alternatives.
Special Designations	Long-term, adverse impacts to vegetation within ACECs from surface disturbances related to mineral leasing, geophysical work, mineral material disposal and mineral entry. Other adverse impacts would include woodland harvesting, vegetation treatments, livestock grazing and open OHV use.	The increased number of acres designated as ACECs and decrease in allowable surface-disturbing activities under this alternative would result in fewer long-term, adverse impacts on vegetation resources than would occur under Alternatives A, C, and D.	Alternative C would have limited ACEC designation and more acres subject to surface disturbing activities than Alternatives A, B, and E, but fewer adverse impacts than Alternative D.	No ACECs would be designated under Alternative D. This alternative would have the greatest long-term, adverse impacts to vegetation from the increase in permitted surface disturbances of any of the alternatives.	Same impacts as Alternative B, except there would be beneficial, long-term impacts on vegetation due to restrictions on surface disturbing activities in non-WSA lands with wilderness characteristics within designated ACECs.
Special Status Species	Alternative A would specify acres of protected habitat for special status species, which would also protect vegetation resources. This alternative would provide the least beneficial protection of the alternatives.	Alternative B would provide the most acres of protected habitat for special status species, which would indirectly provide protection for vegetation in special status species habitat. This alternative would provide greater beneficial protections and have the lower adverse impacts on	Alternative C would provide fewer protected acres of habitat for special status species habitat, and vegetation therein, than Alternatives B and E, but would have greater protections in place than Alternatives A and D.	Alternative D would provide fewer protected acres of special status species habitat, and the vegetation therein, than Alternatives B, C, and E, but would have greater protections in place than Alternative A.	Same as Alternative B, except there would be beneficial, long-term impacts on vegetation due to restrictions on surface disturbing activities in non-WSA lands with wilderness characteristics. This alternative would have the fewest adverse impacts on vegetation of

VEGETATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
		vegetation than Alternatives A, C, and D.			the alternatives.
Travel Management	This alternative would have 276,430 acres closed to OHV use. These closures would eliminate OHV related surface disturbance to native vegetation in closed areas.	Alternative B would close 423,582 acres to OHV use, which is 135,502 acres (47%) more than Alternative A. This alternative would have the fewer adverse impacts on vegetation associated with travel than Alternatives A, C, and D.	Alternative C would close 418,549 acres to OHV use, which is 130,469 acres (45%) more than Alternative A. This alternative would have fewer adverse impacts on vegetation associated with travel than Alternatives A and D, but greater impacts than B and E.	This alternative would have no closures to OHV use, which is 288,080 acres less than under Alternative A. This alternative would have the greatest adverse impacts on vegetation from travel of any of the alternatives.	Same as Alternative B, except there would be 582,356 additional acres closed to OHV use in non-WSA lands with wilderness characteristics. This alternative would have the least adverse impacts on vegetation due to 694,006 (251%) more acres closed to OHV use than Alternative A.
Vegetation	15,475 acres vegetation treatments per year. This alternative would have short-term, adverse impacts on vegetation due to the large acreage open to disturbances associated with widespread, unspecified vegetation treatments. Long-term, beneficial impacts would include reduced competition with exotic species.	Under Alternative B, 7,600 acres of vegetation treatments/year represent a 51% reduction in annual treatments compared to A. This alternative would provide the least long-term benefits and fewer adverse impacts to vegetation, due to targeted treatments over a smaller area, than Alternatives A, C and D.	Impacts same as Alternative B, except 9,300 acres would be treated/year. This alternative would provide greater long-term benefits to vegetation than Alternatives A, B, and E, due to a greater number of acres receiving targeted vegetation treatment.	Under Alternative D, 11,300 acres would be open to vegetation treatments/year with potentially greater long-term beneficial impacts on vegetation resources than would occur under Alternatives A, B, C and E due to a greater number of acres receiving targeted vegetation treatment.	Same as Alternative B, except no surface disturbing land treatments would be permitted in non-WSA lands with wilderness characteristics. This alternative would have the least short-term adverse impacts, but limited long-term benefits to vegetation of the alternatives.
Visual Resources	Minor, short-term, adverse impacts to vegetation in VRM I and II areas from restrictions on surface disturbance, and long-term, beneficial impacts to vegetation under VRM III and IV objectives. Alternative A would have the smallest	Impacts same as A, except this alternative would have a larger area subject to VRM class I surface disturbance restrictions (with long-term, beneficial impacts on vegetation resources under these VRM classes) than Alternative	Impacts same as A, except this alternative would have a larger area subject to VRM class I and III surface disturbance restrictions, and a smaller area subject to VRM class II restrictions than Alternative A. Alternative	Impacts same as A, except this alternative would have a larger area subject to VRM class I, III and IV restrictions, and a smaller area subject to VRM class II restrictions than Alternative A. Alternative D would have the largest area subject to	Same as Alternative B, except additional protection of acreage within non-WSA lands with wilderness characteristics under VRM I would have long-term, beneficial impacts on vegetation resources. This alternative would

VEGETATION					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	area subject to VRM class I restrictions on surface disturbances and the largest area subject to VRM class II restrictions of the alternatives.	A. Alternative B would have more area subject to VRM III and less area under VRM II and IV restrictions than Alternative A.	C would have the largest area subject to class IV restrictions of the alternatives.	VRM class III restrictions and the second largest areas subject to class IV restrictions of the alternatives.	have the most acres managed as VRM I of the alternatives.
Wildlife and Fisheries Resources	Beneficial impacts on vegetation from habitat protection and mitigation of surface disturbances to vegetation: 247,938 acres subject to bighorn sheep special conditions; 13,954 acres of pronghorn habitat; and 180,089 acres of protected deer winter range.	Beneficial impacts same as A, but to a greater degree due to increased mitigation potential for the adverse impacts of surface disturbing activities on vegetation resources, including: 83% more acres subject to bighorn sheep special wildlife conditions; 110% more acres of protected pronghorn habitat; 330% more protected deer habitat; and 184,248 more acres of protected elk habitat than Alternative A.	Beneficial impacts same as A, but to a greater degree due to increased mitigation potential for the adverse impacts of surface disturbing activities on vegetation resources, including: 21% more acres subject to bighorn sheep special wildlife conditions; 110% more acres of protected pronghorn habitat; 45% more protected deer habitat; and 93,104 more acres of protected elk habitat than Alternative A.	Beneficial impacts same as A, but to a greater degree due to increased mitigation potential for the adverse impacts of surface disturbing activities on vegetation resources, including: 26% fewer acres subject to bighorn sheep special wildlife conditions; same number of acres of protected pronghorn habitat; 17% fewer protected deer habitat; and 60,103 more acres of protected elk habitat than Alternative A.	Same as Alternative B.
Woodlands	Short-term, adverse impacts on 1,147,407 acres of the pinyon-juniper vegetation open to woodland harvesting, include trampling and removal of native trees. Long-term, indirect impacts include the potential introduction of weedy, non-native species during wood harvesting operations.	Impacts same as Alternative A, except impacts would be on 504,666 acres of pinyon-juniper vegetation (56% fewer acres open to harvest than Alternative A). This alternative would have the fewest acres open to the adverse impacts of woodland harvest.	Impacts same as Alternative A, except impacts would be on 597,086 acres of pinyon-juniper vegetation open to woodland product harvest (48% fewer acres open to harvest than under Alternative A).	Same as Alternative C.	Same as Alternative B, except that no woodland product harvest would be allowed in non-WSA lands with wilderness characteristics. This would result in the fewest acres open to surface-disturbing activities that would have long term, adverse impacts on vegetation resources.

VISUAL RESOURCE MANAGEMENT					
VRM Class	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
VRM I (Very low impacts to scenic quality allowed)	371,575 acres	497,668 acres	425,179 acres	390,424 acres	998,370 acres
VRM II (Low impacts to scenic quality allowed)	355,112 acres	250,641 acres	132,001 acres	8,838 acres	111,478 acres
VRM III and IV (Moderate to major impacts to scenic quality allowed, short-term and long-term impacts from surface disturbing activities in VRM III and VRM IV areas).	1,054,681 acres	1,034,813 acres	1,225,915 acres	1,383,860 acres	671,828 acres
Scenic Quality/Viewshed, Lockhart Basin	VRM Class III designation for Lockhart Basin not managed as a Visual ACEC, more potential adverse short-term and long-term impacts on 47,783 acres than for the action alternatives	No scenic quality degradation because of management under VRM I for 47,783 acres for Lockhart Basin ACEC	VRM Class II designation for Lockhart Basin, but not managed as a Visual ACEC, more potential adverse impacts on 47,783 acres than for Alternatives B & E, but less than Alternative A.	VRM Class III designation for Lockhart Basin, Not managed as a Visual ACEC, with more potential adverse impacts on 47,783 acres than for Alternatives B & E.	No scenic quality degradation because of management under VRM I for 47,783 acres for Lockhart Basin ACEC.
Scenic Quality/Viewshed, Valley of the Gods	No scenic quality degradation because of VRM I designation for 31,387 acres for Valley of the Gods ACEC	No scenic quality degradation because of VRM I designation for 22,863 acres for Valley of the Gods ACEC	Valley of the Gods designated as VRM I as a Visual ACEC, with no scenic quality degradation for 22,863 acres.	Designation as VRM III, Valley of the Gods is not managed as a Visual ACEC, with more potential adverse impacts on 22,863 acres than for Alternatives A, B, C, and E.	No scenic quality degradation because of VRM I designation for 22,863 acres for Valley of the Gods ACEC.
Scenic Quality/Viewshed, Indian Creek	No scenic quality degradation because of VRM I designation for 13,100 acres in the Indian Creek ACEC	No scenic quality degradation because of VRM I designation on 8,510 acres for Indian Creek ACEC	Indian Creek is managed as a Visual ACEC, with no scenic quality degradation on 3,908 acres in the ACEC (outside the WSA).	Indian Creek is not managed as a Visual ACEC, designated as VRM III, with more potential adverse impacts on 8,510 acres than for Alternatives A, B, C & E.	No scenic quality degradation because of VRM I designation for 8,510 acres for Indian Creek ACEC

WILDLIFE AND FISHERIES RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Wildlife and Fisheries Resources	Long-term beneficial impacts to wildlife from seasonal wildlife protection areas: 329,750 acres of bighorn sheep habitat, 12,960 acres pronghorn habitat, and 197,550 acres mule deer habitat (540,260 acres total).	Beneficial impacts same as Alternative A, but to a greater degree, from proposed 453,388 acres of protection areas for bighorn sheep habitat, 29,365 acres pronghorn habitat, 785,921 acres mule deer habitat, and 191,173 acres elk habitat (total of 1,459,847).	Impacts same as Alternative A, but to a greater degree from proposed habitat protection areas: 415,395 (lambing) and 453,390 (rutting) acres for bighorn sheep, 29,365 acres for pronghorn, 266,406 acres for mule deer, and 97,471 acres for elk habitat (total of 808,637 acres).	Beneficial impacts same as Alternative A from proposed seasonal wildlife protection areas: 299,009 acres desert bighorn sheep, 13,961 acres for pronghorn, 182,315 acres for mule deer, and 62,484 acres for elk (total of 557,769 acres subject to special wildlife conditions).	Impacts same as Alternative B.
Cultural Resources	Long-term adverse impacts of cultural resource decisions on wildlife resources from restrictions on habitat improvements, watershed improvements, and vegetation treatments. Beneficial impacts on wildlife from restrictions on surface-disturbing activities including woodland gathering and harvesting, minerals leasing, and OHV use and restrictions on visitor numbers and activities.	Beneficial impacts same as Alternative A, but to a greater degree, due to greater restrictions on surface disturbing activities.	Beneficial impacts same as Alternative A, except woodland gathering and harvesting, and vegetation treatments would be allowed. Alternative C would have fewer adverse impacts on wildlife than Alternative A due to greater restrictions on surface disturbing activities.	Adverse impacts same as Alternative A, but to a greater degree, and beneficial impacts to a lesser degree than Alternative A.	Impacts same as Alternative B, but to a greater degree due to increased restrictions on surface-disturbing activities.
Fire Management	Fuels treatments would have short-term adverse impacts to wildlife species from habitat disturbance and removal, and long-term beneficial impacts due to reduced fuel loading, reduced fire risk, and diversified habitat.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.

WILDLIFE AND FISHERIES RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Lands and Realty	Lands and realty decisions would result in adverse surface disturbance, causing loss of wildlife habitat, habitat fragmentation, direct disturbance to wildlife during construction and maintenance, potentially introduce invasive species, and/or wildlife to avoid areas that were previously considered viable habitat. Beneficial impacts would include areas excluded from surface disturbing activities and mitigation measures that accompany surface disturbing activities.	Impacts same as Alternative A, except that Alternative B would exclude more areas from wind or solar energy exploration and development, thereby having fewer adverse impacts than Alternative A.	Impacts same as Alternative B, except that fewer areas would be excluded from wind or solar energy exploration and development.	Impacts same as Alternative B, except fewer exclusions from wind or solar energy exploration and development. Alternative D would result in more adverse impacts to wildlife in the short- and long-term than any other alternative.	Impacts same as Alternative B, except that non-WSA lands with wilderness characteristics would also be excluded from ROWs for wind or solar energy exploration and development. Alternative E would be more beneficial to wildlife than all other alternatives since it prescribes more exclusions than any other alternative.
Livestock Grazing	The exclusion of livestock from sensitive habitats (such as riparian areas and zones with limited soils) would beneficially impact wildlife species by maintaining more native plant forage and cover. Where livestock grazing is allowed there would be adverse long-term impacts on wildlife due to competition with wildlife for forage, possible trampling of individual animals or nests, and susceptibility to invasion by noxious weeds. Under all alternatives grazing	Alternative B prescribes the largest area unavailable for livestock grazing and therefore would have the greatest beneficial impacts on native vegetation and wildlife habitat.	Alternative C is the same as Alternative B, except that Mule Canyon would be open to grazing north of U-95. Alternative C would have fewer adverse impacts to wildlife than Alternative A, but greater impacts than Alternatives B and E.	Alternative D is the same as Alternative B, except fewer acres would be unavailable to grazing, but with greater restrictions on grazing than Alternative A.	Same as Alternative B.

WILDLIFE AND FISHERIES RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	would continue to be excluded from 118,424 acres, and 17,300 acres in Peter's Canyon and East Canyon would be allotted to wildlife.				
Minerals and Energy Resources	Surface disturbance due to mineral development would degrade and fragment wildlife habitat, and displace wildlife. Leasable mineral development would impact 699 acres of primarily pinyon-juniper and desert shrub habitats, 886 acres of wildlife habitats adversely impacted by geophysical exploration in the short term, and 1,652,743 acres open to locatable minerals activities under standard stipulations.	Impacts same as Alternative A, but to a lesser degree. Leasable mineral development would adversely impact 636 acres of primarily pinyon-juniper and desert shrub habitats, 794 acres of wildlife habitats adversely impacted in the short term by geophysical exploration, and 1,521,656 acres open to locatable minerals activities under standard stipulations.	Impacts same as Alternative A, but to a greater degree, from leasable mineral development that would impact 710 acres of primarily pinyon-juniper and desert shrub habitats, 903 acres of wildlife habitats temporarily impacted by geophysical exploration, and by 1,637,688 acres open to locatable minerals activities under standard stipulations.	Impacts same as Alternative A, but to a greater degree, from leasable mineral development that would impact 721 acres of primarily pinyon-juniper and desert shrub habitats, 924 acres of wildlife habitats temporarily impacted by geophysical exploration, and 1,737,999 acres open to locatable minerals activities under standard stipulations.	Impacts same as Alternative A, but to a lesser degree, from leasable mineral development that would impact 518 acres of primarily pinyon-juniper and desert shrub habitats, 591 acres of wildlife habitats temporarily impacted by geophysical exploration, and 1,521,656 acres open to locatable minerals activities under standard stipulations.
Recreation	Adverse impacts to wildlife species and their habitats from recreation, include noise disturbance, vehicle traffic, trampling of native vegetation, and other human-related disturbances. Where designated, SRMAs would reduce adverse impacts to wildlife by restricting recreation or reducing dispersed recreational	Adverse impacts same as Alternative A, but to a lesser degree due to greater restrictions on surface disturbing activities in SRMAs.	Adverse impacts same as Alternative A, but to a lesser degree, due to greater restrictions on surface disturbing activities in SRMAs.	Adverse impacts same as Alternative A, but to a greater degree, due to fewer restrictions on surface disturbing activities. Overall, this alternative would have the most acres of native vegetation and potential wildlife habitat subject to adverse impacts associated with recreation activities.	Adverse impacts same as Alternative A, but to a lesser degree, due to greater restrictions on surface disturbing activities. Overall, Alternative E would be most beneficial to wildlife because it prescribes the greatest restrictions, of all alternatives, on surface disturbing activities.

WILDLIFE AND FISHERIES RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	activities.				
Riparian Resources	Under all alternatives riparian areas would be managed as NSO for oil and gas leasing but open to mineral entry and disposal of mineral materials (though not in active floodplains or within 100 meters of riparian areas). Livestock grazing would be allowed in riparian areas under all alternatives. The long-term adverse impacts of these activities would be mitigated by management in accordance with laws, executive orders, and regulations on floodplains and wetlands.	Impacts same as Alternative A, but to a lesser degree, due to prescriptions limiting OHV use, livestock grazing, and motorized camping.	Same as Alternative B.	Same as Alternative A.	Same as Alternative B.
Soil and Water Resources	Under all alternatives, soils and watershed decisions would comply with Utah's Standards for Rangeland Health and Guidelines for Grazing and Recreation. All floodplains and riparian/wetlands would be managed in accordance with Executive Order 11988. There would be no slope restrictions on allowable disturbance under Alternative A.	Adverse impacts same as Alternative A, but to a lesser degree since unavoidable surface-disturbance on slopes between 21 and 40% would require a plan (with an erosion control strategy and approved survey and design). Also, surface-disturbing activities would not be permitted on slopes greater than 40% (excluding 87,599 acres of land in the Monticello PA).	Adverse impacts same as Alternative B and E, but to a greater degree since surface-disturbing activities would not be permitted on slopes greater than 40% unless it determined that it would cause undue or unnecessary degradation to pursue other placement alternatives. Unavoidable surface-disturbing activities on slopes between 21 and 40% would require a plan (with an erosion control strategy and approved	Adverse impacts same as Alternative A, but to a greater degree since surface disturbing activities would not be ruled out for slopes of any grade and a plan would only be required for slopes greater than 40%. This alternative would have more adverse impacts on vegetation resources and therefore wildlife resources than any other alternative.	Same as Alternative B.

WILDLIFE AND FISHERIES RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
			survey and design).		
Special Designations	The designation of ACECs and WSR segments would have long-term beneficial impacts on wildlife species and their habitats because ACECs and WSR segments limit or prohibit surface-disturbing activities, decreasing the potential for damage to native vegetation or avoidance behavior in individual animals. The designation of ACECs and WSR segments would also have long-term adverse impacts on wildlife where protective management prohibits habitat or watershed improvements or vegetation treatments. Under Alternative A, 10 of the 12 proposed ACECs would continue to be managed as ACECs and 6 of 12 river segments reviewed for WSR status would be recommended as suitable.	Beneficial impacts same as Alternative A but to a greater degree since all 12 of the proposed ACECs would be designated and managed as ACECs and all 12 river segments reviewed for WSR status would be recommended as suitable.	Beneficial impacts same as Alternative A but to a lesser extent since 6 of the 12 proposed ACECs would be designated and managed as ACECs and 3 of the 12 river segments reviewed for WSR status would be recommended as suitable.	Under Alternative D none of the ACECs would be designated and managed as ACECs and none of the river segments reviewed for WSR status would be recommended as suitable. Alternative D would result in more adverse impacts to wildlife than any other alternative since there are fewer restrictions on surface disturbing activities under this alternative.	Same as Alternative B.
Special Status Species	Under all alternatives no management actions would be permitted on public lands that would jeopardize the continued existence of plant or animal species that are	Beneficial impacts same as Alternative A, but to a greater degree since Alternative B would provide more acres of protected habitat for special status species	Beneficial impacts same as Alternative A, but to a greater degree since Alternative C would provide more acres of protected habitat for special status species	Beneficial impacts same as Alternative A, but to a lesser degree since Alternative D would provide the fewest number of acres of surface disturbance	Same as Alternative B.

WILDLIFE AND FISHERIES RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	listed, officially proposed, or candidates for listing as Threatened or Endangered and the BLM would commit to current and future conservation agreements, management plans, and recovery plans. These actions would have long-term beneficial impacts on wildlife that share habitat with targeted special status species.	than any other alternative.	than Alternative A (but fewer acres than Alternatives B and E).	restrictions in special status species habitat, resulting in a greater potential for adverse impacts on wildlife in special status species habitat.	
Travel Management	OHV use has short- and long-term adverse impacts on wildlife by causing damage to vegetation used as wildlife forage and cover, as well as causing noise. Habitat fragmentation and degradation and the spread of noxious weeds also result from OHV use. Under Alternative A: 611,310 acres would be open to OHV use.	Adverse impacts same as Alternative A, but to a much lesser degree. Under Alternative B: zero acres would be open to OHV use.	Adverse impacts same as Alternative A, but to a lesser degree. Under Alternative C: 2,311 acres would be open to OHV use however, designated 'ways' would be established in corridors leading to trailheads.	Adverse impacts same as Alternative A, but to a lesser degree. Under Alternative D: 2,311 acres would be open to OHV use.	Same as Alternative B.
Vegetation	Under Alternative A, 15,475 acres would be open to vegetation treatments each year. This is substantially greater than under any of the other alternatives. There are more short-term adverse impacts associated with Alternative A because of the large number of acres	Under Alternative B, 7,600 acres would be open to vegetation treatments each year, which is 51% fewer acres of treatment than under Alternative A. Overall, this alternative is likely to have more beneficial short-term impacts on wildlife and habitat than Alternative A due to	Impacts same as Alternative B, but to a greater degree. Under Alternative C, 9,300 acres would be open to vegetation treatments each year, which is 40% fewer acres of treatment than under Alternative A.	Impacts same as Alternative B, but to a greater degree. Under Alternative D, 11,300 acres would be open to vegetation treatments each year, which is 27% fewer acres of treatment than under Alternative A.	Same as Alternative B.

WILDLIFE AND FISHERIES RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	open to trampling and disturbance associated with widespread, less targeted, vegetation treatments, and seed gathering and plant collection activities.	fewer, short-term, adverse impacts associated with habitat disturbance, and the increased likelihood of successful vegetation treatments due to the concentration of efforts in specified vegetation communities outlined under this alternative.			
Visual Resource Management	VRM Classes I and II are generally more beneficial to wildlife since they result in less surface disturbance than VRM Classes III and IV. However, in some cases VRM Class I or II can have adverse impacts on wildlife by limiting or prohibiting habitat and watershed improvements and vegetation treatments. Under Alternative A: VRM Class I: 371,575 acres (21%) VRM Class II: 355,112 acres (20%) VRM Class III: 416,806 acres (23%) VRM Class IV: 637,875 acres (36%)	Impacts same as Alternative A, but to a greater degree, due to increased acreage managed as VRM Classes I and II. Under Alternative B: VRM Class I: 497,668 acres (28%) VRM Class II: 250,641 acres (14%) VRM Class III: 426,350 acres (24%) VRM Class IV: 608,463 acres (34%)	Impacts same as Alternative A, but to a lesser degree due to decreased acreage managed as VRM Class II. Under Alternative C: VRM Class I: 425,179 acres (24%) VRM Class II: 132,001 acres (7%) VRM Class III: 531,920 acres (30%) VRM Class IV: 693,995 acres (39%)	Impacts same as Alternative A, but to a lesser degree due to decreased acreage managed as VRM Class II. Under Alternative D: VRM Class I: 390,424 acres (22%) VRM Class II: 8,838 acres (<1%) VRM Class III: 692,741 acres (39%) VRM Class IV: 691,119 acres (39%)	Impacts same as Alternative A, but to a greater degree due to increased acreage managed as VRM Classes I and II. Under Alternative E: VRM Class I: 998,370 acres (56%) VRM Class II: 111,478 acres (6%) VRM Class III: 264,369 acres (15%) VRM Class IV: 407,459 acres (23%)
Woodlands	Short- and long-term adverse on 1,309,894 acres impacts from harvesting from wildlife habitat loss, habitat	Adverse impacts same as Alternative A, but to a lesser degree since fewer acres would be open to woodland harvest.	Adverse impacts same as Alternative A, but to a lesser degree since fewer acres would be open to woodland harvest.	Adverse impacts same as Alternative A, but to a lesser degree since fewer acres would be open to woodland harvest.	Adverse impacts same as Alternative A, but to a lesser degree since fewer acres would be open to woodland harvest.

WILDLIFE AND FISHERIES RESOURCES					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	degradation, and habitat fragmentation, and noise disturbance. Long-term beneficial impacts from reduced fire risk from fuel load reductions and thinning, and opening up the forest floor for understory growth. Long-term beneficial impacts from harvesting on sagebrush steppe communities and wildlife.	Under Alternative B, 730,074 acres would be open to woodland harvest. Also, limitations on off-road travel and wood product use in the deer and elk winter range (Nov. 1 – May 15) would help mitigate the short-term adverse impacts of woodland product collection and harvest on wildlife and habitat.	Under Alternative C, 841,938 acres would be open to woodland harvest. Also, wood collection in certain areas would be restricted to within 150 feet of designated routes and permitted off road travel.	Under Alternative D, 841,938 acres would be open to woodland harvest but wood collection would not be limited to any buffer zone along designated routes or permitted off road travel.	Under Alternative E, 548,477 acres would be open to woodland harvest with limitations on collection and use the same as Alternative B.
Management Decisions pertaining to Air Resources, Hazardous Materials, and Paleontology were excluded from analysis because they would have a negligible effect on wildlife and fisheries resources.					

WOODLANDS					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Cultural Resources	Excluding 33,433-acre Grand Gulch Historic District from harvesting opportunities would have long-term, adverse impacts on woodland resources.	Long-term, beneficial impacts on woodlands from fuels reductions around sites. Long-term, adverse impacts from harvesting restrictions on 99,955 acres.	Beneficial impacts same as Alternative B. Long-term, adverse impacts from harvesting exclusions on 61,943 acres.	Beneficial impacts same as Alternative B. Long-term, adverse impacts from harvesting exclusions on 59,297 acres (1.5 times more acreage than Alternative A).	Same as Alternative B.
Fire Management	Short-term, adverse impacts from fire treatments through resource loss, surface disturbances, soil compaction and erosion, opportunities for exotic species establishment, and restrictions on harvesting in treated	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Long-term, adverse impacts from prohibitions on fire treatments treatment-related harvesting within 582,357 acres of non-WSA lands with wilderness characteristics, and increased wildland fire risks.

WOODLANDS					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	areas. Long-term, beneficial impacts from reduced risks of wildland fire and improved fire condition classes, and sustainable yields of woodland products.				
Minerals and Energy Resources	Short-term and long-term, adverse, but minor, impacts on woodland productivity from RFD minerals exploration and development affecting 0.1% of the area available for minerals development.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Non-WSA Lands with Wilderness Characteristics	No impacts to woodlands as non-WSA lands with wilderness characteristics are not protected under this alternative.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Impacts on woodlands would be adverse in the long term from prohibitions on fire and vegetation treatments, and control of invasive species on 582,357 acres in woodland zones managed for protection of non-WSA lands with wilderness characteristics.
Recreation	Long-term, beneficial impacts from unrestricted opportunities for harvesting opportunities in SRMAs and ERMA, except for restrictions on a total of 196,040 acres in ROS P-class areas, 250 acres of developed recreation sites, and along the 1,280-acre	Long-term, beneficial impacts from sustainable riparian woodlands resource use along San Juan River. Long-term, adverse impacts from harvesting prohibitions or restrictions on 416,757 acres in SRMAs.	Impacts same as Alternative B, with long-term, except adverse harvesting prohibitions on 406,554 acres in SRMAs.	Impacts same as Alternative B, with long-term, except adverse harvesting prohibitions on 406,554 acres in SRMAs.	Same as Alternative B, but to a more adverse degree, from harvesting prohibitions in SRMAs and in riparian areas (for riparian woodland species) that lie within non-WSA lands with wilderness characteristics. Long-term, adverse impacts

WOODLANDS					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
	Pearson hiking trail. Long-term, adverse impacts from potential reductions in woodland productivity and unsustainable harvesting from relatively few harvesting restrictions in the PA.				within non-WSA lands with wilderness characteristics on 416,526 acres in the ERMA.
Riparian Resources	Long-term, adverse, but minor, impacts from harvesting restrictions in riparian areas. Long-term, beneficial impacts from maintained productivity and sustainable harvesting of riparian woodlands.	Same as Alternative A, except long-term, beneficial impacts on riparian woodlands from closing riparian areas to OHV use.	Same as Alternative B.	Same as Alternative A.	Same as Alternative B, but with a greater degree of adverse impacts, from prohibitions on riparian woodland harvesting within non-WSA lands with wilderness characteristics.
Soil and Water Resources	Negligible impacts on woodland resources or harvesting opportunities because soil and water decisions would not affect woodland resources.	Impacts same as for Fire Management from vegetation treatments to control tamarisk.	Same as Alternative B.	Same as Alternative B.	Long-term, adverse impacts from prohibitions on vegetation treatments to control tamarisk replacement of and encroachment on riparian woodland stands.
Special Designations – WSAs	Long-term, adverse, but minor, impacts on harvesting opportunities from closure of 399,600 acres of WSAs (22% of the PA).	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Special Designations – ACECs	Long-term, adverse, but minor, impacts on harvesting from closure of 139,796 acres within ACECs to woodland harvesting opportunities (8% of the PA).	Same as Alternative A, but to a greater degree, from harvesting restrictions on 522,035 acres in ACECs (29% of the PA).	Same as Alternative A, but to a lesser degree, from harvesting restrictions within 39,093 acres of ACECs (2% of the PA)	Same impacts as Alternative C, with 22,863 acres excluded from harvesting in ACECs (1% of the PA).	Same as Alternative B, except adverse impacts to woodland harvesting from exclusions within 109,205 acres within proposed ACECs for preservation of non-WSA lands with wilderness

WOODLANDS					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
					characteristics.
Special Designations – Wild and Scenic Rivers	Long-term, adverse, but minor, impacts on harvesting from harvesting exclusions within 7,168 acres along the San Juan River and 1,920 acres along the Colorado River.	Same as Alternative A, but to a greater degree, from harvesting exclusions on 18,768 acres along eligible and recommended river segments (2.5 times more acreage than Alternative A).	Beneficial, long-term impacts from few harvesting exclusions except on 3,968 acres along eligible and recommended river segments.	Beneficial, long-term impacts from no harvesting exclusions along all PA river segments (no eligible river segments).	Same as Alternative B.
Travel Management	Long-term, adverse impacts to harvesting opportunities on 276,430 acres designated as closed to OHV use or access.	Long-term, adverse impacts to harvesting on 423,698 acres closed to OHV use or access (53% more than Alternative A).	Same as Alternative A, but to a greater degree, from 418,667 acres closed to OHV use or access (51% more acreage than Alternative A).	Negligible impacts on woodland harvesting from no OHV closed areas.	Long-term, adverse impacts to woodlands harvesting access from designated closed OHV areas (970,436 acres), and 179 miles of OHV routes in non-WSA lands with wilderness characteristics.
Vegetation	Short-term, minor, but long-term, indirect, beneficial impacts from vegetation treatments to reduce fuel loads and invasive species on 232,130 acres managed for vegetation treatments.	Short-term and long-term impacts same as discussed under Fire Management from potential treatment of 37,500 acres of pinyon-juniper and riparian woodlands.	Same as Alternative B.	Same as Alternative B.	Long-term, adverse impacts on woodland productivity and woodland ecosystem health within areas with non-WSA wilderness characteristics from prohibitions on vegetation treatments to restore pinyon-juniper communities.
Visual Resources	Long-term, adverse, but minor, impacts on harvesting from scenic protection on 726,687 acres within VRM Class I and Class II areas (41% of the PA).	Same as Alternative A, with 748,309 acres protected for scenic quality under VRM Class I and Class II areas (42% of the PA).	Same as Alternative A, from designation of 557,180 acres under VRM Class I and Class II (31% of the PA).	Same as Alternative A, but to a lesser degree, from designation of 399,262 acres under VRM Class I and Class II (22% of PA).	Same as Alternative B, except greater long-term, adverse impacts on woodland harvesting from designation of 998,370 acres as VRM Class I and 111,478 acres as VRM Class II (62% of the PA).

WOODLANDS					
Resource	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**	**Alternative E**
Wildlife and Fisheries Resources	Beneficial impacts on woodland resources from riparian habitat protection and control of invasive species.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Woodlands	Beneficial impacts on woodland resources harvesting opportunities on 73% of the planning area (1,309,894 acres).	Same impacts as Alternative A, except 41% of PA available for harvesting (730,074 acres) in woodland zones, with beneficial impacts from controlled OHV use.	Same as Alternative A, except 47% of PA (841,938 acres) would be open to harvesting opportunities.	Same as Alternative C.	Impacts the same as non-WSA Wilderness Characteristics impacts above from additional prohibitions on woodland harvesting and treatments within 582,357 acres managed for non-WSA lands with wilderness characteristics. 548,477 acres (31% of the PA) would be beneficially available for woodland harvesting.

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2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM ANALYSIS

Table 2.3 provides a summary of those alternatives the BLM initially considered but later eliminated, and the justifications for their dismissal from further evaluations.

Table 2.3. Alternative Elements Eliminated from Detailed Analysis

Rationale for Elimination	Alternative A	Alternative B	Alternative C	Alternative D
Livestock Grazing				
Action: The PA would be unavailable for livestock grazing. Rationale for Elimination: An alternative that proposes to close the entire PA to grazing would not meet the purposes and needs of this RMP/Draft EIS. NEPA requires that agencies study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources. No issues or conflicts have been identified during this land use planning effort, which requires the complete elimination of grazing within the PA for their resolution. Where appropriate, closures and adjustments to livestock use have been incorporated into the alternatives on an allotment or area basis to address issues identified in the LUP. Since the BLM has considerable discretion, through its grazing regulations, to determine and adjust stocking levels, seasons-of-use, and grazing management activities, and to allocate forage to uses of the public lands in LUPs, the analysis of an alternative to entirely eliminate grazing is not needed. An alternative that proposes to close the entire PA to grazing would also be inconsistent with the intent of the Taylor Grazing Act (TGA), which directs the BLM to provide for livestock use of BLM lands, to adequately safeguard grazing privileges, to provide for the orderly use, improvement, and development of the range, and to stabilize the livestock industry dependent upon the public range. The Federal Land Policy and Management Act (FLPMA) requires that public lands be managed on a "multiple use and sustained yield basis" (FLPMA Sec. 302(a) and Sec. 102(7)) and includes livestock grazing as a principal or major use of public lands. While multiple use does not require that all lands be used for livestock grazing, complete removal of livestock grazing on the entire PA would be arbitrary and would not meet the principle of multiple use and sustained yield. Livestock grazing is and has been an important use of the public lands in the PA for many years, and is a continuing government program. Although the Council on Environmental Quality (CEQ) guidelines for compliance with NEPA require that agencies analyze Alternative A (the No Action Alternative) in all EISs, for the purposes of this NEPA analysis, Alternative A is to continue the status quo, which includes livestock grazing (CEQ Forty Most Asked Questions, Question 3). For this reason and those stated above, a no-grazing alternative for the entire PA has been dismissed from further consideration in this LUP.				
Travel Management				
Action: Travel on roads would be eliminated based upon a model that uses distances from roads so as to protect solitude and remoteness. Rationale for Elimination: An alternative that proposes to close the roads based on this model in the PA would not meet the purposes and needs of this RMP/Draft EIS. No issues or conflicts have been identified during this land use planning effort that requires this particular method for determining which roads would be designated and which areas would remain open, limited, or closed to cross-country travel. Since the BLM has considerable discretion through its regulations, the analysis of an alternative to close roads based on this model is not needed. BLM did consider the idea of remoteness and solitude and provided protection for these values in a reasonable range of alternatives. Alternative E protects non-WSA lands with wilderness characteristics by closing these lands to OHV travel. Additionally, Alternative B closes all WSAs to OHV use. Instead, BLM chose to take a hard look at each route and measure the purpose and need for that particular route against resource conflicts. This methodology was presented in the travel report and was the basis for the range of alternatives for				

Table 2.3. Alternative Elements Eliminated from Detailed Analysis

Rationale for Elimination	Alternative A	Alternative B	Alternative C	Alternative D
travel management.				
Enlarge Canyonlands National Park				
Action: Enlarge Canyonlands National Park to include Lockhart Basin. Rationale for Elimination: An alternative that proposes to enlarge Canyonlands National Park to include Lockhart Basin has been proposed many times in the media and discussion with interested groups. However, no complete serious proposal has ever been brought forward. This would not meet the purposes and needs of this RMP/Draft EIS. No issues or conflicts have been identified during this land use planning effort that requires this particular method for determining which roads would be designated and which areas would remain open, limited, or closed to cross country travel.				

3.0 AFFECTED ENVIRONMENT

3.1 PROJECT AREA OVERVIEW

3.1.1 GEOGRAPHIC SETTING

The Monticello planning area (PA) is located in the southeastern corner of Utah, adjacent to the Colorado and Arizona borders. A part of the Colorado Plateau region, the Monticello PA is bounded by the Colorado River to the west, Canyonlands National Park and the Moab PA to the north, and the Colorado and Arizona state borders to the east and the south, respectively. The Abajo Mountains are situated in the heart of the Monticello PA. Elevations within the Monticello PA range between 3,700 at Lake Powell (near Bullfrog) and 11,360 feet at Abajo Peak (located in the Manti LaSal National Forest).

3.1.2 CLIMATE

The climate of the Monticello PA shows wide seasonal temperature variations and both temperature and precipitation vary with elevation. Across the Monticello PA, summer precipitation generally comes from brief, heavy thunderstorms. Accumulated winter snow pack melts early in the spring and acts to infiltrate dry desert soils and recharge aquifers.

Precipitation in the southern section of the Monticello PA (near Bluff) averages 8 inches annually with most falling as rain in the late autumn months. Spring and summer thunderstorms are generally brief and violent, often resulting in flash flooding. Summers are hot, with daytime highs averaging 94°F and lows in the high 50s, although extreme highs over 110°F are not uncommon. Winters are cold, with highs averaging 46°F, and lows averaging 20°F.

The western section of the Monticello PA receives an average of 6 inches of precipitation a year, mostly in the late fall as snow. However, rain is not uncommon in the spring and late summer. Maximum summer temperatures average in the high 90s, while winter highs average 48°F, with lows generally in the high 20s.

The climate of the middle section of the Monticello PA (near Blanding) includes low humidity, warm summer temperatures and cool winters. Annual precipitation averages 13 inches, most of which comes in the form of fall rains and winter snows (11 inches). Maximum summer temperatures average 81°F, while winter temperatures average highs of 38°F, and lows of 16°F.

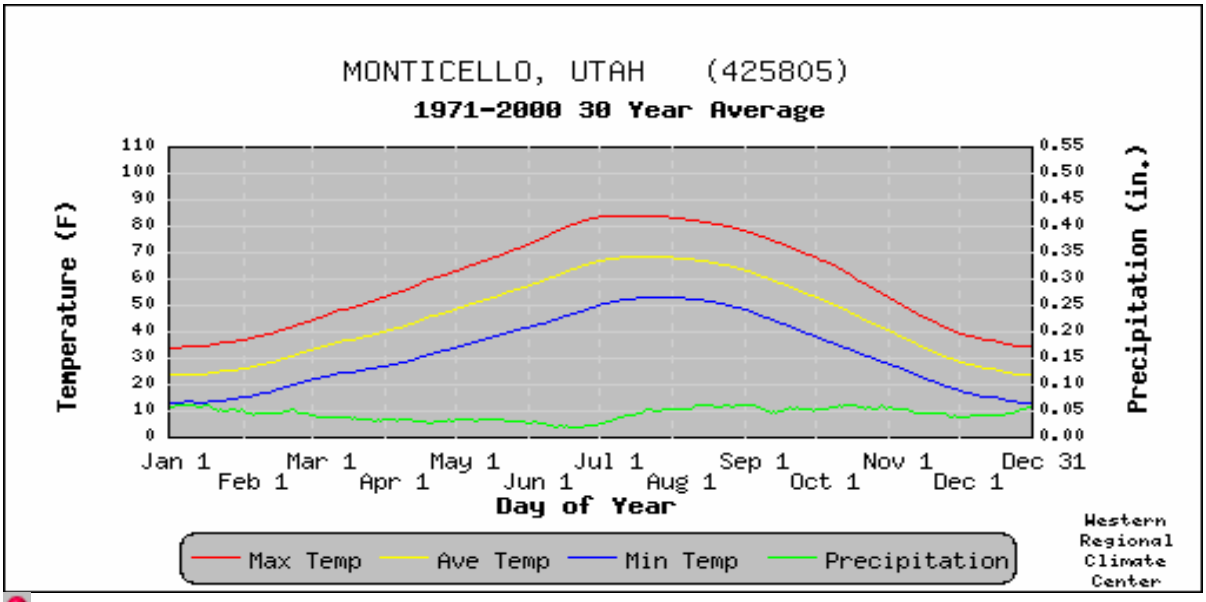
The northern section of the Monticello PA (near Monticello) receives an average of 15 inches of precipitation annually; most of which comes in late summer thunderstorms and fall snows, which can leave heavy accumulations in the higher elevations. Maximum summer temperatures average in the high 80s during the day, and low 50s at night. Winter high temperatures average 42°F, with nighttime temperatures in the high teens.

Air temperature and precipitation data collected from 1948 through 2003 for four locations in the Monticello PA are displayed in Table 3.1 and Figure 3.1 (WRCC 2004). (Peak elevation temperature and precipitation information was not available.)

Table 3.1. Temperature and Precipitation Data Available for Four Locations in the Monticello PA (WRCC 2004)

Temperature (°F)								
Station	General Location	Elevation (feet)	Summer Means		Winter Means		Extremes	
			High	Low	High	Low	High	Low
Monticello	Northern	7,066	86.0	54.8	41.6	19.4	110	-23.0
Blanding	Middle	6,105	81.4	50.0	37.9	16.0	101	-22.0
Bullfrog	Western	3,712	96.5	67.5	48.4	27.2	110	0
Bluff	Southern	4,440	93.6	58.6	46.2	20.3	109	-22.0

Precipitation (inches)							
Station	Mean				Annual		
	Winter	Spring	Summer	Fall	Mean	High	Low
Monticello	3.8	2.9	4.0	4.3	15.0	23.1	6.6
Blanding	3.9	2.6	3.0	3.8	13.3	24.4	4.9
Bullfrog	1.3	1.2	1.1	2.2	5.9	11.5	2.2
Bluff	2.1	1.5	1.8	2.4	7.8	15.7	3.0



- Max. Temp. is the average of all daily maximum temperatures recorded for the day of the year between the years 1971 and 2000.
- Ave. Temp. is the average of all daily average temperatures recorded for the day of the year between the years 1971 and 2000.
- Min. Temp. is the average of all daily minimum temperatures recorded for the day of the year between the years 1971 and 2000.
- Precipitation is the average of all daily total precipitation recorded for the day of the year between the years 1971 and 2000.

Figure 3.1. Thirty-year precipitation and air temperature plots for Monticello, Utah (WRCC 2004).

The Monticello PA has been experiencing drought for much of the last five years. The effects of the drought are discussed in detail in Sections 3.2 – Air Quality and 3.17 – Vegetation.

3.2 AIR QUALITY

3.2.1 INTRODUCTION

This section provides a general overview of air quality conditions for the Monticello PA. It includes the cumulative air quality impacts from existing pollutant sources within and around the Monticello PA.

The Monticello PA has experienced drought for much of the last five years, with extremely dry conditions occurring during the summer of 2002, when the Palmer Drought Severity Index (PDSI) reached near-record severity based on the last 100 years of instrumental data (NCDC 2004). These dry conditions have resulted in an increase of wind-blown dust and associated particulates in the Monticello PA and adjacent areas.

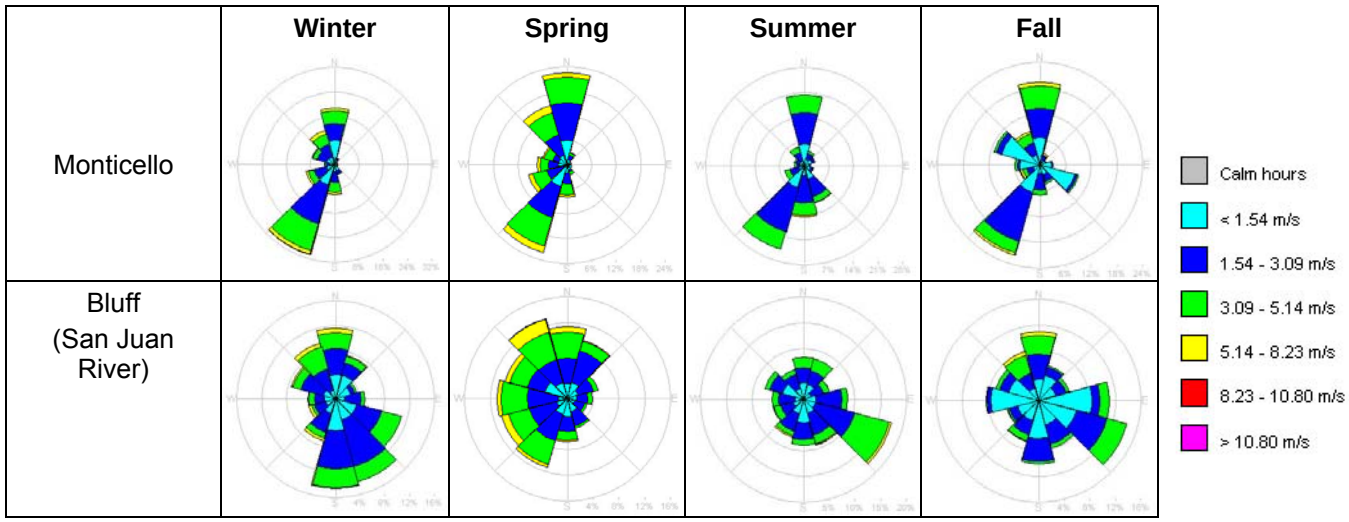
Drought is not the only climatic condition that can affect air quality in the planning area. Winter inversions and wind direction and speed can also have a great impact on air quality. When the air temperature near the ground is lower than the air temperature above, a phenomenon called an *inversion* occurs. Inversions may occur in winter when snow accumulation on the ground combines with short daylight hours to impede the sun's ability to warm the lower atmosphere. In most areas of the Monticello PA, inversions are fairly typical winter occurrences that typically dissipate rapidly when early morning sunlight warms the air near the ground surface. In areas where the local topography acts to pool and trap cold air (deep valleys surrounded by steep mountains) however, cold temperatures associated with stationary or slow moving high pressure systems can last for days or (rarely) even weeks and create inversions that result in poor air quality due to the compression of cold air masses and lack of circulation.

Inversions can hinder air pollutant dispersion by preventing emissions from mixing with the ambient air in the vertical direction. The mixing height of the plume is the height above the surface through which free vertical mixing occurs. Mixing height is often bounded by the inversion layer in the atmosphere. The dispersion of air pollutants is confined within the mixing height of the atmosphere. High mixing heights promote emissions dispersion and result in low ground level pollutant concentration. On the other hand, low mixing heights often trap emissions and result in high ground level concentration. Monticello, Blanding and Bluff are not as prone to inversions due to local topography, minimal snowfall, warmer wintertime low temperatures or other climatological conditions.

Air pollutant dispersion is also dependent on the wind. The pollutant path is determined by the wind direction, and the speed of transport is determined by the wind speed. Wind direction in the Monticello PA is highly influenced by the local terrain. For example, the winds along the San Juan River in San Juan County tend to blow from the west and the northwest in the spring and blow from the east and the southeast in the other seasons (Trinity Consultants [Trinity] 2003). In the city of Monticello, which is located on the flanks of the Abajo Mountains, the winds predominately blow from the south or southwest.

Figure 3.2 presents the windroses for two cities in the Monticello PA. Windroses are graphical representations of wind magnitude, frequency, and direction for a given location. As can be seen

from the seasonal windroses, the wind patterns in the area vary widely by seasons and local terrain. Therefore, dispersion and transport of pollutants are also variable in this region depending on the locations.



Data Source: 1996 Mesoscale Model (MM5) data processed using the CALMET meteorological model. The observed data from various meteorological stations are used to generate these windroses. Meteorological stations include Grand Junction, Montrose County Airport, Price/Carbon, etc.

Figure 3.2. Seasonal windroses[1] in the Monticello PA.

3.2.2 Existing Air Quality

The Code of Federal Regulations (CFR) sets National Ambient Air Quality Standards (NAAQS) in Title 40 of CFR, Part 50 (40 CFR 50). The purpose of primary NAAQS is to protect the welfare of the most sensitive people such as elderly and asthmatic individuals, while secondary NAAQS protect public welfare from known or anticipated adverse effects associated with the presence of air pollutants, such as damage to property or vegetation. The NAAQS apply to six pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), ozone (O_3), and particulates whose diameters are smaller than 10 micrometers (PM_{10}) or smaller than 2.5 micrometers ($PM_{2.5}$). An area that does not meet the NAAQS for one or more of these pollutants is designated as a nonattainment area for that particular pollutant. The Monticello PA is located in an area designated as attainment for all pollutants (EPA 2003a). Table 3.2 present the existing ambient air quality in the Monticello PA (EPA 2003b).

Applicable air quality criteria also include the criteria for prevention of significant deterioration, known as PSD increments. A PSD increment is the maximum increase in ambient concentrations of a certain pollutant that is allowed to occur above the baseline concentration for that pollutant.

[1] Windroses depict the relative frequency of wind direction as defined by the directions on a compass scale. In the diagrams above eight directions are used (north, northeast, east, southeast, south, southwest, west and northwest, starting from the top of the diagram and going clockwise. Each ring on the wind rose represents an increased frequency (percent of the total) as described by the values listed at the bottom of the diagram (for example: 8%, 16%, 24%, 32% for winter winds in Monticello). Each branch of the rose represents wind coming from that direction. The branches are divided into segments of different thickness and color, which represent wind speed ranges from that direction. Speed ranges are identified in the scale to the right of the diagram. The length of each segment within a branch is proportional to the frequency of winds blowing within the corresponding range of speeds from that direction.

Class I areas are areas with pristine air quality, such as wilderness areas, National Parks, and Tribal reservation lands, and are accorded the strictest protection. Only very small incremental increases in concentration are allowed in these areas to ensure the maintenance of their pristine air quality.

In Utah, five areas have been designated as Class I areas, all are National Parks and are under the administration of the National Park Service (NPS). These areas are: Arches National Park, Bryce Canyon National Park, Canyonlands National Park, Capital Reef National Park, and Zion National Park. PSD Class II areas are essentially all areas that are not designated Class I, and moderate incremental increases in concentration are allowed, although the concentrations are not allowed to reach the concentrations set by federal standards (NAAQS). No areas have yet been designated Class III. Air quality data for Class I areas within the planning areas are included, where available.

Current air quality in the Monticello PA is, with the exception of ozone, consistently below the NAAQS by a large margin, as shown in Table 3.2 (observed ozone concentrations in the vicinity of the Monticello PA is less than, but near, the NAAQS). The Utah DEQ indicated that ozone concentrations in Class I areas of the western states have shown significant increases in the past decade and are approaching the NAAQS level (personal communication between Brock LeBaron, Utah DEQ, and Trinity Consultants on August 8, 2003). Although the exact source contributing to the high ozone concentrations has not been verified at this time, there are many concerns that oil and gas development activities in the region are contributing to the significant rise in ozone concentrations in these Class I areas.

The data listed are the most recent available data for each pollutant. If there is no monitor located within the boundary of the Monticello PA, the data from the nearest representative monitor(s) are chosen. Most of the available monitoring stations are located east or southeast of the planning area. As outlined in Table 3.2 of this chapter, the air quality in and near the Monticello PA meets the NAAQS by a large margin.

The seasonal windroses presented in Figure 3.2 for Monticello and Bluff (in the Monticello PA) show that prevailing wind speeds rarely exceed 5 meters per second, and vary seasonally in direction. Local topography in the Monticello PA is complex and likely to influence local wind patterns to a substantial degree. As meteorological data is not available for all sites within the planning area, the stations at Monticello and Bluff were assumed to be representative of dominant trends in prevailing wind direction for the northern and southern sections of the Monticello planning area, respectively. Due to the complexity of local topography, this assumption may not hold on a site-specific scale but is expected to be representative when applied as an annual average area-wide trend.

Based on prevailing wind direction observed in Monticello (see Figure 3.2) the northern-most meteorological station for which consistent wind information is available, emission sources located in Price, Utah represent only a very minor potential to impact air quality in the planning area as the dominant wind patterns do not support direct transport of atmospheric pollutants from Price to the northern portion of the planning area.

Table 3.2. Ambient Air Quality Data for Monticello PA

Pollutant	Averaging Period [a]	NAAQS	Monitored Concentration [b]	Monitored Location (City, County, State)
CO	1-hour	35 ppm	5.8 ppm	Grand Junction, Mesa Co., CO
	8-hour	9 ppm	3.7 ppm	Grand Junction, Mesa Co., CO
NO_2	Annual	0.053 ppm	0.008 ppm	La Plata Co., CO
			0.014 ppm	Bloomfield, San Juan Co., NM
SO_2	3-hour[c]	0.5 ppm	0.06 ppm	Shiprock, San Juan Co., NM
	24-hour	0.14 ppm	0.017 ppm	Shiprock, San Juan Co., NM
	Annual	0.03 ppm	0.003 ppm	Shiprock, San Juan Co., NM
Ozone	1-hour	0.12 ppm	0.075 ppm	La Plata County, CO
			0.08 ppm	Mesa Verde NP, Montezuma Co., CO
			0.087 ppm	Farmington, San Juan Co., NM
			0.078 ppm	Canyonlands NP, San Juan Co, UT
	8-hour	0.08 ppm	0.061 ppm	La Plata County, CO
			0.078 ppm	Mesa Verde NP, Montezuma Co., CO
			0.08 ppm	Farmington, San Juan Co, NM
			0.075 ppm	Canyonlands NP, San Juan Co, UT
PM_{10}	24-hour	150 µg/m³	67 µg/m³ [d]	Telluride, San Miguel Co., CO
			104 µg/m³	Durango, La Plata Co., CO
$PM_{2.5}$	24-hour	35 µg/m³	10 µg/m³	Telluride, San Miguel Co., CO
			26 µg/m³	Durango, La Plata Co., CO
	Annual	15 µg/m³	5.5 µg/m³	Telluride, San Miguel Co., CO
			8.2 µg/m³	Durango, La Plata Co., CO

[a] The concentration values listed in this table are based on the monitored concentrations in 2002.

[b] The concentration listed in this column represents the highest values detected in a city of a county (where more than one monitors are present in a given county or a city). The data from the city or county nearest the boundary of the Monticello PA are provided if no monitor is located within the resource planning area boundary.

[c] SO_2 3-hour standard is a secondary NAAQS that sets limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

[d] For this short-term averaging period, the maximum value recorded during the first half of 2003 is higher than the maximum concentration for 2002; therefore 2003 values are used instead.

Based on prevailing wind direction observed in Bluff, the southern-most meteorological station for which consistent wind information is available, emission sources located in Page, Arizona, and Las Vegas, Nevada represent essentially no potential to impact air quality in the planning area as the dominant wind patterns do not support direct transport of atmospheric pollutants from Page or Las Vegas to the southern portion of the planning area in the winter, summer or fall, and only moderate transport potential in the spring.

3.2.3 VISIBILITY IN CLASS I AREAS

Visibility is "the clarity with which distant objects are perceived" (EPA 2001), and is affected by pollutant concentrations, plume impairment, regional haze, relative humidity, sunlight, and cloud characteristics. A typical visual range without any manmade air pollutants would be 140 miles in the Western states (EPA 2001). Aerosols (small particles made of solid and/or liquid molecules dispersed in the air) are the pollutants that most often affect visibility in the Class I areas. Five key contributors to visibility impairments are sulfate, nitrate, organic carbon, elemental carbon, and crustal materials. Their relative contributions to visibility impacts in the Canyonlands National Park, a Class I area within the planning area of the FO, are summarized in Table 3.3 (EPA 2001).

Table 3.3. Summary of Visibility Impairment Pollutants Measured in the Canyonlands National Park [a]

Pollutant	Contribution [b]	Emission Sources
Sulfate	34%	Fossil fuel combustion and forest fires.
Crustal Material	27%	Fugitive dust from roads, agricultural and forestry operations, and wind erosion.
Organic Carbon	22%	Wood burning, open burning, vehicle exhaust, and wildfires and prescribed burning.
Elemental Carbon	10%	Vehicle exhaust, wood burning, and wildfires and prescribed burning.
Nitrate	7%	Motor vehicle exhaust. Secondary sources include fossil fuel combustion and prescribed burning.

[a] Data source: U.S. EPA. 2001.

[b] Contributions are calculated by pollutant concentrations regularly measured in the Canyonlands National Park. Light extinction coefficients and visibility indices are then calculated from these values.

The 1977 Clean Air Act (CAA) included legislation to prevent future and remedy existing visibility impairment in Class I areas. In 1985, the United States Environmental Protection Agency (EPA) established a collaborative monitoring program called the Interagency Monitoring of Protected Visual Environments (IMPROVE) to monitor visibility in Class I areas. The IMPROVE network has operated a monitor in the Canyonlands National Park, located near the western boundary of the Monticello PA, since 1988. The most-impaired days in Canyonlands National Park exhibit visual distances between 61 to 80 miles and show improvements of approximately 35% over the decade of 1988 to 1997. The mid-range days have visual distances of 78 to 109 miles and show no significant change. The least-impaired days have visibility ranges from 107 to 144 miles and also demonstrate improvements over the decade of approximately 25% (EPA 2003c). While some visibility impairments are the result of natural sources such as windblown dust and soot from wildfires, which cannot be controlled; manmade sources of pollution can also impair visibility. These include motor vehicles (organic carbon), electric utility and industrial fuel burning (sulfates and particulate), and manufacturing operations (sulfates and particulate). Visibility in Canyonlands National Park is most influenced by sulfates, particulate matter (dust), and organic carbon. The visibility improvements seen over the past decade are the result of implementing state and federal stationary and mobile source

regulations. The visibility trend from 1988 to 1997 in the Canyonlands National Park is summarized in Figure 3.3.

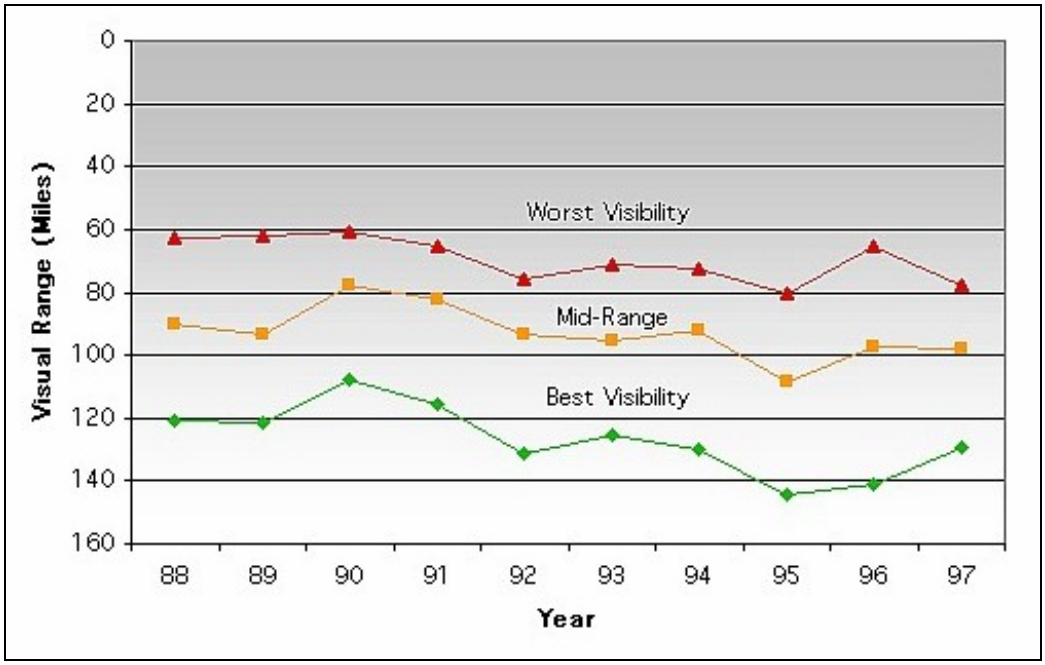


Figure 3.3. Trend in air pollution impacts on visibility observed in Canyonlands National Park, Utah, 1988 through 1997 (EPA 2003c).

3.2.4 STATUS OF EMISSIONS

The Monticello PA covers much of San Juan County. Currently, emission sources within the Monticello PA consists mostly of oil and gas development facilities and some mineral processing facilities as identified in Table 3.4.

Table 3.4. 2002 Emission Inventories in the Monticello PA [a]

County	Type of Facility (Qty)	2002 Emissions in tons per year (tpy)					
		CO	NOx[b]	PM_{10}	SOx[c]	VOC[d]	HAPs[e]
San Juan	Pipeline compressor stations (1)	48.1	394	1.5	0	8.6	3.1
	Gas Plant (1)	534	393	5.4	1453	71.8	10.9
	Uranium processing facility (1)	11.5	9.0	0.7	1.0	–	–

[a] Emission inventory data are provided by Deborah McMurtrie, Utah DEQ, to Trinity Consultants on August 20, 2002.

[b] Nitrogen oxides - one of the main ingredients involved in the formation of ground-level ozone.

[c] Sulfur oxides - contribute to respiratory illness, acid rain, and the formation of atmospheric particles that can cause visibility impairment.

[d] VOC (volatile organic compounds) refers to any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate that participates in atmospheric photochemical reactions.

[e] HAPs (hazardous air pollutants) are generally defined as those pollutants that are known or suspected to cause serious health problems. Section 112(b) of the Clean Air Act identifies a list of 188 pollutants as HAPs.

The Utah Department of Environmental Quality (DEQ) provided the emission inventory for the Monticello PA (personal communication between Deborah McMurtrie Utah DEQ and Yu Shan Huang, Trinity Consultants on August 13, 2003). The types of facilities in San Juan County are summarized in Table 3.4.

Additional concerns center around emissions specific to visitation and through traffic within the Monticello PA. Most recreational visitors engage in motorized activities that are emission sources in addition to the highway vehicles utilized for transportation.

Prescribed fire and naturally caused fires also present a concern to air quality. Prescribed burning is a useful tool for resource management and may be used to achieve a variety of objectives such as restoring a fire-dependent ecosystem, enhancing forage for cattle, improving wildlife habitat, preparing sites for reforestation, or reducing hazardous fuel loads. Fire used for any of these management reasons, will produce smoke and other air pollutants. Some short-term air pollutant releases are necessary to achieve the benefits of prescribed burning. Short-term effects on air quality from prescribed burns include a general increase in particulate, CO_2 and ozone emissions. Land managers recognize that smoke management is critical to avoid air quality intrusions over sensitive areas or visibility problems. Vegetation management is an active part of fire management techniques and long-term effects of prescribed burning include a reduction in particulate, CO_2 and ozone emissions specific to wildfire in unmanaged areas. As a result of careful management, there is usually less smoke from a prescribed fire than from a wildfire burning over the same area.

3.3 CULTURAL RESOURCES

3.3.1 OVERVIEW

Cultural resources are non-renewable remains of past human activity. For BLM management purposes, these remains take the form of sites, artifacts, buildings, structures, ruins, features, and natural landscapes with particular cultural importance. With a few exceptions, these remains must be at least 50 years old. In the case of natural landscapes, the period of traditional cultural use must also be at least 50 years old to be considered significant or eligible for or listed on the National Register of Historic Places (NRHP). Cultural resources also include places identified by traditional groups (e.g., Native American tribes) as sacred or otherwise important to the maintenance of group identity even if no physical manifestations of past activities are present at that location. Such locations are referred to as Traditional Cultural Properties (TCPs). Additionally, certain areas of the landscapes have particularly high densities of cultural resources and can be designated as Areas of Critical Environmental Concern (ACECs) with cultural values. This section provides an overview to the culture history of the Monticello PA, as background for understanding the types of cultural resources present. This is followed by an overview to the ethnographic data for the area. Resources are then discussed including a summary of information regarding known resources, potential TCPs, and ACECs with cultural values.

3.3.2 CULTURAL RESOURCE HISTORY OF THE MONTICELLO PA

The following section contains a brief overview of past human activity on lands under the jurisdiction of the Monticello FO. This overview is divided into three sections: Prehistory, History, and Ethnography. It is intended only to provide a very broad outline within which to

understand the basic types and affiliations of cultural resources that are present within the boundaries of Monticello PA. This overview is not a complete recitation of the entire existing body of knowledge regarding past human activity within the PA. It does not incorporate information from very recent and ongoing investigations (i.e., the condition assessment project at Moon House or excavations in Comb Wash) that are beginning to yield data that may change the existing knowledge of prehistoric land use patterns, cultural affiliations, and timing of events and trends.

An outline of the prehistory and history of the lands incorporated by the Monticello PA is useful in understanding the broad patterns of human occupation, land use, and habitation that have occurred within the region. Humans of multiple cultures have inhabited, traversed, mapped, and developed these lands for greater than 12,000 years and have left evidence of their activities on the landscape in the form of archaeological sites, buildings, and structures. It is this material evidence that the BLM must consider when making land use decisions within the PA.

3.3.2.1 PREHISTORY

Although the precise timing and nature of human entry into North America is currently a matter of considerable debate (Dillehay 1997; Swedlund 1999), the first period of significant recognized human occupation of the continent occurs toward the end of the Pleistocene when the climate was cooler and moister than the present (Jennings 1989:60). This time period is often referred to as the Paleoindian Period and represents the oldest time period for which archaeological evidence exists of human activitity in the region. The environmental conditions during this period supported the presence of large game mammals such as giant bison, mammoth, camel, and ground sloth (Grayson 1993). Human populations over much of the continent appear to have concentrated, albeit to varying degrees, on the exploitation of these mammals during this period (Jennings 1989:59; Simms 1988). Few archaeological sites from this earliest period of known human occupation of southeastern Utah have been found within the Monticello PA. The Lime Ridge Clovis site, located 15 kilometers (km) southwest of Bluff, Utah, is a siginificant archaeological site on the northern Colorado Plateau in Utah (Davis 1989:66). Research conducted in Glen Canyon has also demonstrated a limited human presence during the Paleoindian period (Geib 1996:7). Archaeological evidence from this period tends to be very limited and is often confined to stone tools designed for hunting large game mammals.

The next period of prehistoric occupation in the Monticello PA is typically referred to as the Archaic Period. This period can be subdivided into several phases based on technological (tool kit) differences and different approaches the prehistoric peoples used for obtaining food; though they were still relying on hunting and gathering, they pursued smaller game animals than the previous period. Archaeological sites from this period are more numerous than those from the Paleoindian Period and contain a wider variety of artifacts. Stone tools from Archaic Period sites tend to be smaller and exhibit evidence of being used differently than the spear points Paleoindian peoples used for hunting such animals as mammoth and giant bison. The lands of the Monticello PA appear to have been very popular for Archaic peoples as archaeological sites from this period are found throughout the FO planning area. In fact, the archaeological record for San Juan County indicates widespread occupation of the area between 6000 B.C. and A.D. 100 (Geib 1996:7-9; Nielson 1985). Cedar Mesa, Elk Ridge, and Montezuma Canyon are noted for numerous Archaic Period sites of varying size and complexity. Notable sites include Alkali Ridge, Cowboy Cave, Old Man Cave, and Dust Devil Cave (Brew 1946; Schroedl 1994; Geib

1996:117). Because the peoples of this period were still relying on hunting and gathering, they had to follow migrating animals and seasonally ripening plants across the landscape, and as a result, they left evidence of their activities as numerous small sites located throughout the region.

Following the Archaic Period was the Formative Period. This period differs from the Archaic Period in that Formative Period peoples changed their approach to obtaining food from a strategy based on hunting and gathering wild animals and plants to one in which they began to grow their own food through an early form of agriculture. In the Monticello PA, the Formative Period lasted from A.D. 100 through A.D. 1300. Because the Formative Period peoples spent more time farming, they needed to spend less time pursuing animals and plants. As a result, the archaeological sites they left behind tend to be much larger and have more complex village sites than those of their more nomadic predecessors. Both large village sites and smaller archaeological sites representing the activities of Formative Period peoples are found in very large numbers throughout the Monticello PA.

Within southeastern Utah, the Formative Period has one distinct culture occupying San Juan County: the Anasazi (or *Hisatsinom*, as they are called by the Hopi). This group is hereinafter referred to as the Ancestral Puebloans. The boundaries for the culture are debated; it is known that the Ancestral Puebloans occupied the Four Corners, but the extent of the occupation as far as Las Vegas, New Mexico to Las Vegas, Nevada is debated among professional archaeologists (Geib 1996:98-88; Cordell 1997:196). Table 3.5 presents the chronology of the region during the Formative Period (Jennings 1989:306).

Table 3.5. Formative Period Chronology

Period	Date Range
Pueblo IV/V	A.D.1300–1700
Pueblo III	A.D.1100–1300
Pueblo II	A.D.900–1100
Pueblo I	A.D.750–900
Basketmaker III	A.D.450–700
Basketmaker II	A.D.1–500

Two traditions of Ancestral Puebloans are believed to have occupied the southeastern portion of Utah: the Kayenta and the Mesa Verde (Geib 1996:531; McVickar 2001:233). Interactions with Ancestral Puebloan groups to the east southeast (Chaco Canyon) and west (Virgin River Branch) also influenced people in the area. Clear delineation between these groups is difficult due to the nature of regional integration during the Formative period (Geib 1996:99, Varien 1996:11). What is now San Juan County was the borderland for these two groups. Archaeological sites in the area contain evidence that the two groups interacted with each other (McVickar 2001:232, 233).

It is also hypothesized that during the latter part of the Formative Period, the peoples (Athabaskans) who would later identify themselves as the Navajo and Apache moved into the region (Maryboy and Begay 2000:271). This theory is supported by both liguistic and physical similarities among Northern and Southern Athabaskan groups (Maryboy and Begay 2000:271).

3.3.2.2 HISTORY

The written history of the Monticello PA covers a long period from the early Spanish explorers to the recent past. While physical evidence of past human activities during the historic period is present within the FO, much has been lost as a result of subsequent land uses in the same locations. Cultural resource sites from the historic period can be found almost anywhere within the FO boundaries, though most are found around the roadways, communities, and developments that exist today.

The primary impetus for early historic period use of southeastern Utah was trade, and as the most lucrative markets included slaves, horses, firearms, and other wares illegal to trade with Native Americans, few of the earliest expeditions were ever recorded. However, records do exist to demonstrate that Spanish traders were among the first, if not *the* first, Euro-Americans to make use of the lands within the Monticello PA. This use primarily took the form of trade routes passing through the area, and remnants of the Old Spanish National Historic Trail can still be found northeast of Monticello. Such routes were also used and expanded upon by fur trappers and traders who used the area during the early 1800s. Archaeological evidence of trading posts has been found along these trade routes throughout Utah.

As the dominance of the fur trade waned, European traffic through the Four Corners Region took on a different tone. With the settlement of the Salt Lake Valley by the Mormons in 1847, the Church of Jesus Christ of Latter-day Saints (LDS) became a prominent religious and political player in an area that was being more rapidly divided by boundaries and economic interests. In 1854, the LDS church dispatched William Huntington and Jackson Stewart to explore the Four Corners region for possible expansion of Brigham Young's burgeoning religious state, Deseret. As a result of information obtained during the Huntington Expedition, the Elk Mountain Mission of 1855 was executed in the La Sal Mountains. As the Elk Mountain Mission spread south into the San Juan River drainage to establish relations with the Navajo Nation, the resources of the mission were spread thin. Many of the tribes grew disdainful of the LDS presence, and after a number of the mission party members were killed the project was generally abandoned. Limited, if any, archaeological evidence of these early interactions between the LDS church and Native American groups is likely to be present within the FO.

In 1875, the United States made its first real indication of territorial interest in the region by sending United States Geological Survey teams lead by James L. Gardiner and Henry Gannet, under the direction of Ferdinand V. Hayden, to survey the La Sal Mountains. After two weeks, the Hayden Expedition of 1875 shifted attention to the Abajo Range whereupon they fell under attack by a band of Utes. They were forced to abandon their equipment in Peters Canyon, at an archaeological site that has been identified. Much of their equipment has since been recovered, and is archived at the University of Wyoming (Pierson 1980:82).

By the late 1800s, relatively large numbers of settlers of the LDS church had been sent to southeastern Utah to colonize the area. The green valleys of the San Juan River, Colorado River, and Green River drainages became attractive destinations for cattlemen seeking to graze herds destined for sale in the new markets of the west. The first cattle were grazed in the valleys of the region in 1874 (Pierson 1980:88-90). Little archaeological evidence of this early cattle grazing is likely to be present on BLM lands in the FO as many such homesteads/ranches now exist on private lands. The same such condition would exist for agricultural communities and farmsteads established by pioneers who settled the region alongside and after the cattle ranchers. Irrigation

ditches, holding ponds, and rows of poplar trees planted as wind breaks are scattered across the southeastern Utah landscape, though again mostly on private lands.

By the 1890s, placer mining in the Abajo Mountains began to draw prospectors (Pierson 1980:91). Within a few short years, silver, copper, and other minerals drew almost equal attention. Even uranium and related deposits of vanadium and carnotite attracted some speculative interest, but would not be of much regional importance until after atomic weapons had been developed. Archaeological evidence of these and later mining efforts are known to exist with the Monticello PA.

Into the twentieth century, growth was slow and steady, limited by the nature and degree of industries to which the land was suited. World War I had minor influence upon San Juan County's economy, as did the Great Depression, which may have had a positive effect upon the towns of the region. Southeastern Utah was sparsely populated and, lacking a well-developed economic foundation, there was little to be affected by a national economic downturn. As the United States pulled out of the Great Depression and resumed normal life, San Juan County started an economic transition. World War II had attracted the support of tribal members and European Americans alike, but aside from exposing the residents of southeastern Utah to new skills and various parts of the world the economy was affected very little. The detonation of two nuclear weapons on Japanese soil changed the regional economy in a way far greater than any other single factor had to this time.

Uranium, once a mineral of minimal economic importance, became a commodity in an international arms race. In 1952, Charles Steen discovered the Mi Vida mine in Big Indian Canyon (McPherson 1995:256). Subsequent discoveries resulted in the opening of a uranium mill outside Moab in 1956 (Pierson 1980:100). The population of southeastern Utah multiplied exponentially, and as more lands were consolidated under subsurface mineral rights and homes were constructed for the new arrivals, farming and ranching industries began to decline. Despite the poorly understood, but formidable, health risks associated with uranium mining and milling, the economy of the region grew exponentially.

By this time, more Americans took to the highways than ever before. Interstate roadways developed since the 1920s were refined, automobiles were nearly perfected, fuel was inexpensive, and families enjoyed surplus incomes. As mining, ranching, and agriculture declined, southeastern Utah's tourism industry expanded. Arches National Monument was turned into a National Park, and was joined by Canyonlands (Pierson 1980:101). The completion of the Glen Canyon Dam in 1963 created a vast manmade reservoir that attracts fishermen, houseboat and water sport enthusiasts.

With tourism came a need for more federal employees to play host to visitors and, as a result, a new economy began to form. Support industries evolved in and around population centers and along highways. The trends following the 1950s have not changed dramatically, but continue to expand as southeastern Utah becomes an increasingly popular location for residents of Salt Lake City, Denver, and surrounding areas who frequently visit the valley for mountain biking, climbing, off-road vehicle recreation, and sight seeing. The economy of San Juan County, derived primarily from use of public lands, has become more than a regional issue. General concern from environmental interest groups, outdoor recreationists, and community leaders seeking to enhance the interests of their residents has resulted in numerous attempts to sway national law in one direction or another. As these issues are refined through discussion, San Juan

County's population follows seasonal fluctuations dictated by the peaks and valleys of the tourist industry.

3.3.3 ETHNOGRAPHIC DATA

The history and concerns of individual tribes and tribal groups are detailed and complex and beyond the scope of summary in this document. A separate, comprehensive ethnographic overview is being prepared in conjunction with the current updating of the Monticello FO RMP and will provide field office cultural resource specialists and managers with in-depth descriptions of the claims to, concerns about, and importance ascribed to lands within the Monticello PA (Molenaar et al. [in progress]). This stand-alone document will be a companion to the new RMP and will be used in making decisions regarding land uses contained in or permitted by the RMP.

For the purpose of this chapter, ethnographic summaries and a discussion of potential site types to which tribes may ascribe religious or cultural values are provided in the following sections. These summaries outline what is currently known about concerns individual tribes have regarding management of lands within the Monticello PA and note the types of resources that have been identified as sacred or of traditional importance to the individual tribes.

3.3.3.1 UTE MOUNTAIN UTE AND WHITE MESA UTES

The aboriginal territory of the Ute once covered an extensive area that included what is now Colorado, Utah, and New Mexico. Of the three bands that make up the Southern Ute populations (Muache, Capote, Weenuche), the Weenuche (Ute Mountain Utes and White Mesa Utes) inhabited the Monticello PA. They ranged from the Dolores River in the east, to the Colorado River in the north and west, to the San Juan River in the south. There are few diagnostic indicators, such as distinctive pottery or wickiup sites, which provide proof of Ute occupation in the San Juan region of Utah and Colorado. Utes tended to utilize existing structures and leave few cultural markers behind upon leaving an area. However, ethnographic data place the Utes in the San Juan region at least since the 1500s.

Utes place religious and traditional importance on many land features throughout southeastern Utah. Significant places of traditional use include Water Canyon or River-Flowing-From the Sunrise (San Juan River), Sagebrush Canyon or Crows Canyon (Montezuma Canyon), Slick Rock Mound (Comb Ridge), Two Rocks Canyon (Cow Canyon), Where-the-Sun-Sets-Last (Mount Tukuhnikivats in the La Sal Mountains). Bitter Root Mountain (Sleeping Ute Mountain) and the Colorado River are mythical places. Blue Mountain and Standing-Alone-Mountain (Navajo Mountain) are considered to be places of worship to the Utes. Mancos (Jim) Mesa and Spanish Mossback Mesas were used in historic times as Ute fortresses in times of conflict (McPherson and Yazzie 2000). Historically, the Bear Dance, a spring ceremony symbolic of nature's awakening, was performed in Bluff, Montezuma Canyon, and Allen Canyon. Today the ceremony takes place in the fall in White Mesa; however, the Utes may ascribe cultural significance to these historic ceremony locations.

3.3.3.2 PAIUTE TRIBES

San Juan County is considered to be on the periphery of traditional Paiute territory that extended across southern Utah and Nevada, northern Arizona, and down along the western side of the Colorado River into California. The Monticello PA is east and north of traditional Paiute

territory, although the San Juan Band Paiutes may have utilized resources along the San Juan River in what is now the boundary between San Juan County and the Navajo Reservation (Kelly and Fowler 1986; McPherson and Yazzie 2000). There are no known places of religious or traditional importance to the Paiute on lands managed by the Monticello FO. The Paiute Indian Tribe of Utah has indicated an interest in the traditional plant usage of the San Juan region.

3.3.3.3 THE HOPI TRIBE

The Hopi have rich oral traditions that tell of Hopi clan migrations throughout the Southwest, including southern Utah (Schroeder 1985). Archaeological evidence places the Hopi's ancestors originally within the San Juan region of the Southwest. Sometime during the end of the 1200s, a prolonged drought forced these people to move away from the area towards the north, west, south, and east. After several generations, the people continued their migrations, eventually settling on the southern escarpment of Black Mesa in northeastern Arizona. In present times, Hopi clans continue to inhabit and practice agriculture in Black Mesa country (Ferguson et al. 1993; Brew 1979; Courlander 1971).

Places of religious and traditional importance for the Hopi have not been identified in the Monticello PA. However, the Hopi claim to be culturally affiliated with the occupants of prehistoric places such as habitation sites, pictograph sites, or petroglyph sites. These occupants are known in the scientific community as Paleoindian, Archaic, Fremont, and Anasazi but are known to the Hopi as *Motisinom* (First People) and *Hisatsinom* (Ancient Ancestors) (Ferguson 1997; Newton 1999). The Hopi Cultural Preservation Office does claim cultural affiliation to archaeological sites within the Monticello PA.

3.3.3.4 PUEBLO OF ZUNI

The Pueblo of Zuni is located in a part of western central New Mexico that has been inhabited by ancestors of the Zuni since A.D. 700 or 800 (Woodbury 1979). Like the Hopi, the Pueblo of Zuni claims traditional cultural use of areas far from their present-day reservation (Ferguson and Hart 1985). The Zuni claim stewardship over all lands upon which they hunted, collected materials such as plants and minerals, or traveled regularly to trade. Zuni forebearers especially journeyed great distances for the purpose of collecting materials for ceremonial purposes. Traditional hunting and gathering areas extended as far south as the Mogollon and Gallo Mountains in southwestern New Mexico and westward into Arizona (Ferguson and Hart 1985). It should be noted that this area does not extend into present-day Utah; however, like the Hopi, the Zuni claim cultural affiliation to the Paleoindian, Archaic, Anasazi, and Fremont peoples (Pueblo of Zuni 1995). Therefore, all prehistoric or ancestral Puebloan sites within the Monticello PA are considered by the Zuni as places of traditional importance (Panteah and Zuni Cultural Resources Advisory Team 1997).

3.3.3.5 NAVAJO NATION

Navajos are believed to have entered the southwest during the mid-to-late 1500s and into southern Utah by the 1700s. Their traditional lands covered the area bounded by the four sacred mountains that are of primary religious and sacred significance to the Navajo: Blanca Peak, Mount Taylor, the San Francisco Peaks, and the La Plata Mountains (Maryboy and Begay 2000). Today, the Navajo presently occupy a reservation that is roughly 25,000 square miles and covers

much of northeastern Arizona, northwestern New Mexico, and a small portion of southern Utah. The northern border of the Navajo Reservation borders the Monticello PA.

The earliest known Navajo site in San Juan County is a hogan in White Canyon, west of Bear's Ears, dating to 1620. Early Navajo expansion into the Monticello PA is also supported by a Navajo petroglyph at Bluff, Utah, which is in an eighteenth-century style. Navajos also attach cultural significance to three mountains in Utah that are mentioned in Navajo rite-myths: *Dzil Diloi* (Abajo Peaks), *Naatsisaan* (Navajo Mountain), and *Shash Jaa* (Bear's Ears) (Gilpin 2001; Packak et al. 1992). Recently, the Navajo claimed the Colorado River watershed, including the Green River, as a place of religious and traditional importance based on creation stories (Molenaar 2003c).

3.3.3.6 Pueblo of Jemez

The Towa-speaking Jemez people are thought to have migrated with the ancestors of the Zia into the Jemez Mountains around A.D. 1250, eventually settling into the valley along the Jemez River (Ford et al. 1972; Ellis 1956; Sando 1982). Jemez people believe that their ancestors came into this world at *Hoa-sjela*, or Stone Lake, a place located on the present-day Jicarilla Apache Reservation in northwestern New Mexico (NAU and SWCA 1996). Although no places of religious or traditional importance to the Pueblo of Jemez have been identified in the Monticello PA, Jemez religious leaders are thought to have made treks to an emergence shrine at "Banana Mountain" which may be another name for Sleeping Ute Mountain (Ellis 1967:40).

3.3.3.7 Pueblo of Zia

The Zia are thought to have migrated southward from southwestern Colorado into the Greater Mesa Verde and Chaco Canyon regions and claim both areas as ancestral homes. By the late 1300s, Zians had settled in a series of sites along the Jemez River, where they eventually settled (Ellis 1956, 1967). The Zia pueblo originally consisted of five villages in the 1500s, but their numbers were reduced following the Pueblo Revolt of 1689. Today, the Zia Pueblo consists of one village and two separate land parcels, is presently situated along the Jemez River, 30 miles north of Albuquerque. The Pueblo of Zia, like other Puebloans, claim cultural affiliation to prehistoric cultures of southeastern Utah based on ancestral migration and origin stories. The Pueblo of Zia has consulted with the Monticello FO on cultural resource issues but has not identified any places of religious or traditional importance.

3.3.3.8 Pueblo of Acoma

Acoma is a Keresan-speaking pueblo located 20 miles southeast of Grants in north-central New Mexico. Prehisoric Acoma culture ranged from the plains of eastern New Mexico, to the Zuni Mountains in the west, to the Rio Puerco in the east, and to the north of Mount Taylor (Holmes 1989). Like other Puebloans, Acoma oral traditions tell of their ancestors as having emerged from under the earth at *Shipap*, their place of origin in the north. Archaeological data such as pottery dating and oral traditions hold that Acoma has been occupied since prehistoric times, possibly as early as A.D. 700 (Ruppe 1990; Ruppe and Dittert 1952) with a later mix of migrants arriving from Mesa Verde, Chaco Canyon, and possibly the Gila and Cebolleta regions around A.D. 1300 (Horr 1974; Ellis 1974). Like other Puebloans, the Pueblo of Acoma claims cultural affiliation to prehistoric cultures of southeastern Utah based on their migration stories. The

Pueblo of Acoma has consulted with the Monticello FO on cultural issues but has not identified any places of religious or traditional importance.

3.3.4 CULTURAL RESOURCE OVERVIEW

More than 25,000 cultural resource sites have been documented thus far in all of San Juan County. An estimated 60 to 65 percent of all of these sites are located on public lands, with the majority of these being under the jurisdiction of the BLM Monticello FO. The BLM's management responsibility for the archaeological record of San Juan County grows significantly each year. During the 16 years since the completion of the existing RMP (BLM 1991a), an average of 450 new cultural resource sites have been documented each year in San Juan County. Most of these sites were identified as a result of the Section 106 process of the National Historic Preservation Act of 1966 (NHPA) associated with applications for use of public lands. In order to make sound management decisions regarding land uses, cultural resource specialists and managers within the Monticello PA must understand how cultural resources are distributed across the landscape, which types of cultural resources are present within the FO planning area, and which portions of the FO planning area have been subject to cultural resource inventories, and which areas have not. At the present time, no comprehensive overview of known cultural resource sites and cultural resource survey projects conducted to-date within the Monticello PA exists. The Monticello FO recognizes the need for such an overview and is currently pursuing its preparation in conjunction with the RMP revision.

While thousands of cultural resource sites may be found eligible for listing on the National Register of Historic Places (NRHP), only an extremely small percentage are ever actually formally nominated and listed on the Register. Of the known sites within the Monticello PA, seven are listed on the NRHP as either individual entities or as part of a larger archaeological district or National Historic Landmark. Table 3.6 summarizes these sites.

Table 3.6. National Register-listed Sites and Districts, National Historic Landmarks, and National Monuments within the Monticello PA

Site Number/Name	Year Designated	Acreage Included	Status
Alkali Ridge	1985	2,340 acres	National Historic Landmark
Big Westwater Ruin	1974	< 1 acre	National Register listed site
Hole-in-the-Rock Trail, Dance Hall Rock	1980	40,300 acres linear corridor	National Register listed site
Sand Island Petroglyph Panel	1980	< 1 acre	National Register listed site
Newspaper Rock Petroglyph Panel	1976	< 1 acre	National Register listed site
Butler Wash	1981	2,025 acres	National Register listed archaeological district
Grand Gulch	1982	4,240 acres	National Register listed archaeological district

While there have been many inventories for cultural resources in the Monticello PA, there are significant gaps in the database that have increased the difficulty in management of these resources. These limitations include large unsurveyed areas where there is no current knowledge about cultural resources, gaps in the database of particular site types, and research-related data limitations. Despite the many cultural resource inventories within the FO planning area, the total percentage of the area covered has been relatively small. While a systematic audit of surveyed and as-yet unsurveyed lands within the Monticello PA is beyond the scope of this document, a cursory review of previous project location mapping available at the Utah State Historic Preservation Office (SHPO) suggests that less than 10 percent of all BLM lands within the FO planning area have been subjected to intensive-level cultural resource inventories. As a consequence, there are still large areas for which there is no current information regarding the numbers, types, and distribution of cultural resources.

Further, the majority of previous cultural resource inventories within the FO planning area have been driven by Section 106 compliance related to specific development or land use projects. These inventories have addressed discrete locations and have typically resulted in the "clearance" of small parcels of land and narrow linear corridors. As such, much of the current understanding of site types and their distributions, as well as of prehistoric and historical land use patterns, is based on piece-meal information gleaned from this patchwork of small, disparate surveys.

3.3.5 Potential Traditional Cultural Properties (TCPs)

Consultation with Native Americans can result in the identification of TCPs, which are physical locations of importance to the cultural identity or history of a living community of people today. Based on previous consultations with tribal organizations, the following TCP site types have the potential for being identified in the Monticello PA.

3.3.5.1 Archaeological Sites

Many Native American groups claim affiliation with prehistoric archaeological sites such as rock art, burials, and village sites. The Hopi Tribe, for example, claims that often the exact locations of some of these places, such as ancestral archaeological sites and burials, are unknown to tribes until these sites are identified by Hopi cultural experts during ethnographic or ethnohistoric investigations or by archaeologists during archaeological investigations of a given study area. Not only do the Hopi consider these sites to be TCPs, they also believe that they are historic properties eligible for inclusion on the National Register under Criteria A, B, C, and D for the following reasons:

- **Criterion A** because they are associated with the Hopi clan migrations, which have made a significant contribution to the broad patterns of Hopi history.
- **Criterion B** because they are "associated directly with Ma'saw and the Hopis' covenant to leave their footprints across the land."
- **Criterion C** because "ancestral archaeological sites, that may be individually anonymous, are identified as part of the great clan migration that are central to all that is Hopi."
- **Criterion D** because they have yielded or have the potential to yield information important to Hopi prehistory (Ferguson 1997; Hopi Cultural Preservation Office 1995).

Other tribes also consider ancient Native American archaeological sites as places of traditional importance. For example, the Zuni have identified all "ancestral" archaeological sites as places of traditional importance, as well as being eligible for inclusions on the National Register (Anyon 1995; Hart 1993:40). They say that these sites meet Criteria A and B (as outlined in National Register Bulletin 15) because of their association with the Zuni ancestors and their oral migration histories (Panteah and Zuni Cultural Resources Advisory Team 1997). The Utes also consider some of these sites to be culturally significant and sacred and maintain that the spirit of their ancestors dwell at archaeological sites and will remain as long as the sites are not disturbed (Newton 1999; Perlman 1998). Recently, a spiritual leader of the Uintah and Ouray Ute Tribe has stated that the disturbance of significant archaeological sites is leading to the destruction of Ute religion and diminishing the power of the spirits that remain at these sites (Molenaar 2003a).

3.3.5.2 Rock Art Sites

Many tribes have strong spiritual convictions regarding petroglyphs and pictographs and usually request that these sites not be disturbed, especially if the site was created with the intention of connecting with a spiritual or natural power. Many Ute and Puebloan groups also believe that rock art created by their ancestors retains the spirits of their ancestors. The Hopi Cultural Preservation Office has ascribed cultural values to Fremont rock art panels as far north as Nine Mile Canyon in the Price Field Office area (Molenaar 2003b).

Rock art panels are also seen by tribes as physical evidence of Native American land use indicating territorial boundaries, hunting and camping sites, and trail or migration markers. It is generally accepted by Native Americans that some panels depict tribal stories and legends and that only those with special cultural knowledge can interpret them. In the past, Utes have derived spiritual powers and authority from special petroglyph panels for their Bear Dances (Spangler 1995:775). In the course of Section 106 consultations, the Uintah and Ouray Ute Tribe often request one-half mile buffers around rock art panels, if possible, (Molenaar 2003b).

3.3.5.3 Rock Shelters

Rock shelters and cave sites located within the Monticello PA can potentially be identified as TCPs. These locations include overhangs, crevices and cave sites and are significant to Native Americans as ancestral dwellings. These site types are also potential ancestral grave sites for the Ute Tribe (Pettit 1990). These sites also may be identified as places where Native Americans communicated with the supernatural world by means of prayers, offerings, and vision quest sites (Molenaar 2003a).

3.3.5.4 Non-Archaeological Site Types

Non-archaeological site types are distinguished from archaeological site types in order to discuss places that are not necessarily associated with prehistoric or historic artifact assemblages and collections. These sites are typically identified by tribal representatives during the government-to-government consultation process that is required of federal agencies. Some common site types are lakes and springs, land features, and traditional gathering or collection areas.

3.3.5.4.1 Lakes and Springs

Native Americans often claim places of water as places of traditional importance and have traditional stories about mythical beings or water spirits that live in lakes, springs, and rivers. The Colorado River and its tributaries, have sacred significance to the Navajo. The Colorado, Green and Price Rivers have been identified as sacred to the Navajo because they come from natural spring water and also because the Colorado River flows from the north and can be associated with some of the Navajo creation stories. According to the Navajo, when the Green River is impacted, the cultural integrity of the spring water is affected, which in turn affects traditional procurement use values (Molenaar 2003c).

3.3.5.4.2 Traditional Gathering or Collection Areas

Traditional plant or other resource gathering areas may be places of traditional importance to Native American groups. These areas are generally places where Native Americans go to collect resources such as medicinal plants used and minerals to be used in ceremonies and are often in current use when identified. Within the Monticello PA, such resources include green willow found in riparian areas throughout the FO, and a variety of other plant resources, including firewood, gathered from Cedar Mesa (Molenaar et al. 2005).

3.3.5.4.3 Land Features

Large geographic regions, such as deserts, mountain ranges, and valleys are often identified as TCPs but none have been formally documented as such. Examples of such types of places in the vicinity of the Monticello PA are Sleeping Ute Mountain and the Henry Mountains.

3.3.6 Designated ACECs with Cultural Resource Values

Under the existing RMP (BLM 1991a), approximately 362,920 acres were designated as ACECs based upon combinations of the use categories described above (see Table 3.7). Additionally, clusters of sites comprising approximately 357,780 acres were identified as desirable for nomination to the National Register as archaeological districts, primarily for their scientific and conservation use values (Table 3.7). Four cultural resource sites comprising a total of 13 acres were identified as desirable for nomination to the National Register as individual listings owing primarily to their allocation to the scientific, conservation, and traditional use value categories (Table 3.8).

Management of the Grand Gulch area and Cedar Mesa ACEC is currently governed by the Grand Gulch Plateau Cultural and Recreation Area Management Plan (BLM 1993c). This plan provides for: 1) the formation of a planning area archaeological committee to identify important research questions relevant to the archaeological record of the area; 2) active consultation with the Navajo Tribe, Ute Tribe, Hopi Tribe, Zuni Tribe, All Pueblo Council, San Juan County Historical Society, and Four Corners Heritage Council; 3) archaeological surveys based on the likelihood of impacts to National Register eligible sites; 4) stabilization of select ruins; 5) restrictions on and issuance of special area use permits for commercial and non-commercial use; 6) the development of an interpretive plan to educate visitors about the cultural resources of the area; 7) monitoring to assess impacts to archaeological resources; and 8) development of a public affairs plan related to the area. Specific management prescriptions are also outlined for individual units within the larger FO planning area.

Table 3.7. Areas of Critical Environmental Concern (ACECs) with Cultural Resource Values Designated by the Monticello FO

ACEC Name	Year Designated	Acreage Included	Justification
Alkali Ridge	1991	35,890 acres	Significant diversity of cultural sites; large Pueblo I sites (A.D. 700–900) in this area are part of the Alkali Ridge NHL. Large pueblos with complex architecture and connecting prehistoric roads are included in this diverse cultural landscape. This unique Historic Landmark is significant in the history of archaeology in the southwestern United States. This ACEC has high scientific and conservation use values.
Cedar Mesa	1991	323,760 acres	This ACEC contains a wide array of cultural resources reflecting most of the history of human use of southeastern Utah. Basket Maker -Pueblo I interface sites (pre- A.D. 1 to A.D. 700), terminal Pueblo III occupations (ca. A.D. 1300), plastered rooms in buildings associated with the Pueblo III occupations (A.D. 1100–1300), prehistoric roads, the historic Hole-In-The-Rock Trail, and pioneer era sites are all represented within this ACEC. The ACEC also has high Native American traditional uses and values as well as scientific, conservation, and public values.
Shay Canyon	1991	1,770 acres	This ACEC contains significant rock art associated with Archaic and Pueblo motifs as well as important paleontological resources including at least one dinosaur track way. The ACEC has high public and conservation use values.
Hovenweep	1991	1,500 acres	This ACEC contains large structural Pueblo II – Pueblo III sites (A.D. 850–1300), a terminal Pueblo III occupation (ca. A.D.1300) as well as evidence of interaction with the Mesa Verde Anasazi population. The ACEC has high scientific, public, and conservation use values.

Table 3.8. Sites and Districts Identified in the 1991 RMP for National Register Listing

Name	Acreage Included	Site or District
San Juan Prehistoric Roads	500 acres	District
Cedar Mesa	349,640 acres	District
Fable Valley	5,030 acres	District
Tin Cup Mesa	2,610 acres	District
Ruin Spring	10 acres	Site
Kachina Panel	1 acre	Site
Monarch Cave	1 acre	Site
Three Story Ruin	1 acre	Site

3.4 FIRE MANAGEMENT

3.4.1 INTRODUCTION AND RESOURCE OVERVIEW

The Monticello PA is within the BLM Moab Fire District, which consists of approximately 6.5 million acres of public land interspersed with state, private, and other federally regulated lands throughout Carbon, Emery, Grand, and San Juan counties. The divergent elevations throughout the area support a wide range of vegetation and soil types including riparian areas, forested high mountain watersheds, grasslands and shrublands, and sparse, arid desert sands. During a normal fire year the entire district averages 100 wildfires resulting in 10,000 to 16,000 acres each year of burned and potentially damaged land. Most fire activity occurs in the eastern half of the district, although fires can occur in almost all areas of each field office. In the twenty-five year period between 1980 and 2005, approximately 74% of wildland fires occurring in the entire Moab Fire District (of which the Monticello Planning Area is a part) were lightning-caused. Prior to 1995, an average of 100 fires per year burned an average of 10,000 acres per year. The past decade has shown a trend of increasing wildland fire, with an average of 130 fires each year burning an average of 16,000 acres each year.

Wildland fire occurrence and size can depend on a range of factors including elevation, vegetative community, fuel moisture, precipitation and/or a lack of precipitation, the ability of fire to carry in specific types of vegetation, and other climate dynamics such as dry summer weather following a wet spring or extended periods of drought. Human-caused fires in the Monticello PA are negligible, but may occur near roads from vehicle ignitions and/or in camping areas outside of designated campsites such as along the San Juan River corridor. Resource values threatened by fire include recreation sites, oil/gas sites, cultural sites, watersheds, wildlife habitat and wildland-urban interface areas. High intensity fires that cover large acreages have occurred in almost all areas, although ninety percent of the wildland fires in the Moab Fire District are less than ten acres. Depending on climatic conditions, a typical fire season stretches from March through October with the peak occurring in the lightning-prone period from mid-June to mid-August.

The Moab Fire District has a wide variety of fuel types comprised of numerous species such as grassland mixes, sagebrush and sage/grass, brushland/grass, pinyon/juniper, ponderosa pine, mountain brush, mixed conifer, and invasive species including cheatgrass, tamarisk and others. The affect of wildland fire or the absence of fire in these vegetative communities is closely tied to other public lands resources such as watersheds, soils, wildlife, and livestock grazing. Historically, fire was essential to a healthy ecosystem, providing the needed regeneration of some species and promoting diversity of other species in riparian areas, grasslands, shrublands, woodlands, and forests. The exclusion of fire over the past century, in combination with other land management practices, has compromised the health of many vegetative communities. Two of the predominant issues in the Monticello PA are the loss of shrubland and grassland communities to pinyon/juniper encroachment, and the spread of prolific invasive species.

Communities surrounded by these compromised ecosystems are becoming increasingly susceptible to wildland fire with an accompanying threat to lives and property. Communities in need of management action to reduce the threat from wildland fire on adjacent public lands are identified as wildland-urban interface areas (WUIs). WUIs presently recognized within the Monticello PA include the communities of Blue Mountain Ranch, Natural Bridges, Bug Point,

Cedar Point, Canyon Terrace, Boulder Point, Eastland, Ucolo, Summit Point, Montezuma Canyon, Bluff, Peter's Canyon, Blanding, and Monticello.

Current fire management direction encourages wildland fire use and both fire and non-fire fuel reduction treatments to restore natural fire regimes and to promote the overall ecological health of public lands. The operational role of the Moab Fire District is multi-faceted and comprises wildland fire control and suppression activities, hazardous fuels reduction, wildland fire prevention and education, and collaboration with other agencies in suppression activities as well as in both WUI and non-WUI fuels reduction projects. The Monticello FO Manager authorizes management response to wildland fires within the Monticello PA, approves decisions for prescribed fire and non-fire fuels reduction treatments, and issues restrictions and closures within the Monticello PA during periods of high fire activity.

3.4.2 Specific Mandates and Authority

Fire management on BLM lands falls under several broad federal laws and regulations as outlined previously in this document (see Chapter 1), and is also directed by more specific legislation and policy. The following section discusses those mandates and authorities specific to BLM fire management.

- The Federal Wildland Fire Management Policy (BLM 1995), revised as Federal Fire Policy (U.S. Department of the Interior 2001) – Provides for firefighter and public safety first, while protecting and improving public lands through fire management activities. Reviewed in 2001, improvements to implementation actions were recognized as necessary to ensure adoption of the Federal Fire Policy (USDI 2001) by all federal agencies. The review concluded that while the 1995 Policy is still appropriate, the role of fire should be emphasized in land management to improve ecosystem health and sustainability. Also, more attention must be given to fire risk in the wildland urban interface, and implementation of the Policy could be improved through better interagency and interdisciplinary coordination.
- The National Fire Plan (USDI 2000) – Developed under Presidential direction following the fires of 2000, calls for the continued development and support of firefighting resources, to restore damaged landscapes, and to rebuild communities, with economic assistance as necessary.
- 2000 Cohesive Strategy (Laverty and Williams 2000) – aims to reduce wildland fire risk to communities and to restore and maintain ecosystem health by restoring vegetation to their historic fire regime (i.e., fire frequency and intensity).
- Healthy Forests, An Initiative for Wildfire Prevention and Stronger Communities (signed by the President on August 22, 2002) – designed to improve regulatory processes to ensure more timely decisions and greater efficiency in the effort to reduce catastrophic wildland fire, especially in the wildland-urban interface. As a result of the initiative, in 2003 the Department of the Interior adopted two new categorical exclusions under NEPA: (1) 1.12 for hazardous fuel reduction and (2) 1.13 for post-fire rehabilitation of resources and infrastructure.
- Healthy Forests Restoration Act (Public Law 108-148, December 2003) – Crafted to improve statutory processes for hazardous-fuel reduction projects. Provides authorities and direction to help reduce hazardous fuels, especially in the wildland/urban interface, and to restore healthy forest and rangeland conditions. Encourages collaboration with other entities, early

public involvement in the planning process, and monitoring of hazardous fuel reduction projects.

- Southeastern Utah Annual Fire Operation Plan (prepared annually) – coordinates cooperation between other BLM districts, Forest Service (FS), Bureau of Indian Affairs (BIA), State of Utah, and NPS. Includes procedures for initial attack of a wildfire.
- Instruction Memorandum 2004-007: Land Use Plan and Implementation Plan Guidance for Wildland Fire Management (BLM 2003c), which supersedes BLM Handbook 1601-1 (BLM 2005a) Appendix C – section J, Fire Management. The interim guidance ensures Federal Wildland Fire Management Policy and 10 Year Comprehensive Strategy guidance are incorporated into land use plans.
- BLM Manual Handbook H-1742-1 (BLM 1999a) (and supplemental guidance 11/27/2002) – Provides direction for emergency stabilization and rehabilitation (ESR).
- BLM Prescribed Fire Manual H-9214 (BLM 2000) – Provides direction for planning and implementation of prescribed fire projects and associated prescribed fire plan content.
- Interim Management Policy for Lands Under Wilderness Review H-8550-1 USDI (BLM 1995) – Section J Fire Management provides direction for fire management activities in these specially-managed areas.
- Final Environmental Impact Statement and Record of Decision (Utah) Vegetation Treatment on BLM Lands in the Thirteen Western States (BLM 1991b) – directs the appropriate use of vegetation management techniques.
- BLM Utah Land Use Plan Amendment for Fire and Fuels Management (2005g) – directs and coordinates BLM fire and fuels management statewide and amends individual field office RMPs.

3.4.3 Fire Management Plan

The Moab Fire District Fire Management Plan (FMP) acts as the primary strategic document for fire management in the Monticello PA (Map 3). The FMP integrates RMP direction, goals and objectives for resources influenced by wildland fire, suppression actions, fuels treatment activities, and ES&R. The overlying goal of the FMP is to describe specific actions authorized on the public lands within the Moab Fire District to protect life and ensure public safety, target resource goals and objectives, reduce fuel loads, and to achieve and maintain healthy, functioning ecosystems.

3.4.4 Desired Wildland Fire Condition (DWFC)

DWFC, as described in the Utah Land Use Plan Amendment for Fire and Fuels Management, incorporates both condition class and fire regime in the development of fire management strategies (BLM 2005g). The condition class of a vegetative community is defined in terms of its departure from the historic fire regime; determined by current vegetative composition including alterations and disturbances, and also by the length of fire return intervals within that particular community. Along with one of three possible condition classes, five combinations of fire frequency intervals or “fire regimes” are considered in assigning attributes to categorize a vegetative community’s current condition. The combination of both of these measurements gives a vegetative community a fire regime/condition class rating or “FRCC.” As the FRCC is an index of ecosystem at-risk conditions, DWFC is the description of the desired condition of a

vegetative community as it relates to susceptibility from severe fire effects (e.g., the loss of key ecosystem components - soil, vegetation structure, species; or alteration of key ecosystem processes - nutrient cycles, hydrologic regimes). For example, a healthy ecosystem at low risk of losing key ecosystem components following wildland fire would be considered at optimum DWFC. A lengthy description of fire regime, condition class analyses and historic fire return intervals can be found in Appendix D of the Utah Land Use Plan Amendment for Fire and Fuels Management (BLM 2005g).

3.4.5 LANDSCAPE LEVEL MANAGEMENT

Fire management actions authorized for wildland fire activities, prescribed fire and non-fire fuel treatments, and ES&R are based on DWFC. The Utah Land Use Plan Amendment for Fire and Fuels Management (BLM 2005g) addresses specific fire management objectives for each major vegetation group, designed to result in progress toward DWFC of public lands under the jurisdiction of the BLM. Specific actions designed to meet DWFC are detailed in Table 2.1 of the Utah Land Use Plan Amendment for Fire and Fuels Management and attached to this document as Appendix B. Vegetation groups and fire management objectives are briefly summarized below. [2]

3.4.5.1 SALT DESERT SHRUB

Salt desert scrub occurs over approximately 85,000 acres in the Monticello PA. DWFC for this community is native, open salt desert scrub with little invasive species and fire exclusion because of the historical infrequent fire return interval. Management objectives include wildland fire suppression; no wildland fire use; a wide array of fuels treatments; aggressive seeding in ES&R treatments.

3.4.5.2 PINYON AND JUNIPER WOODLAND

Pinyon/juniper woodlands cover a large portion of the Monticello PA, with estimates averaging over one million acres on public lands. Objectives differ for those areas where pinyon and juniper did and did not occur historically. DWFC in historic pinyon/juniper areas is open stands with grass and shrub understory. These areas historically experienced a 15-50 year fire return interval, which prevented movement of pinyon/juniper into other vegetative communities. DWFC in non-historic pinyon/juniper areas is the restoration of the vegetative community previous to pinyon/juniper encroachment. Management objectives include minimal suppression where possible to mimic natural fire return interval; wildland fire use where feasible; a wide array of fuel treatments; aggressive seeding in ES&R treatments.

3.4.5.3 SAGEBRUSH

Healthy sagebrush stands have declined throughout the Monticello PA, with an estimated 170,000 acres remaining. DWFC is diverse age class with grass and forbs understory. Management objectives involve a balance between invasive species concerns, wildlife habitat, and restoration of historic fire return interval. Objectives include wildland fire use when appropriate; full spectrum fuel treatment; aggressive seeding in ES&R.

[2] Total acres by vegetation type presented in this section vary from those presented in the Vegetation section because the fire acreages were calculated using GAP and the vegetation acres were calculated using ReGAP.

3.4.5.4 GRASSLAND

Grasslands occur over approximately 13,000 acres of the Monticello PA. In historic native grassland areas, DWFC is native grass/forbs community. Dependent upon other resource objectives, DWFC in non-native grasslands is native grassland or shrub community. Management objectives consider historic fire return interval of 15-50 years and may include wildland fire use; prescribed fire, mechanical and chemical fuel treatments to reduce invasive grasses and encroachment by other trees/shrubs; aggressive seeding in ESR.

3.4.5.5 BLACKBRUSH

Blackbrush communities in Utah are thought to have poor regeneration following wildland fire. These communities cover approximately 300,000 acres of the Monticello PA, and management objectives include excluding wildland fire as well as prescribed fire and non-fire fuels treatments.

3.4.5.6 MOUNTAIN SHRUB

In the Monticello PA, mountain shrub areas cover approximately 6,500 acres. DWFC in mountain shrub would be differing age classes in mosaic patterns with the exception of WUI areas. When possible, management objectives allow wildland fire to mimic historic fire return intervals. Fuels treatment of all types is encouraged to decrease the potential for high-severity fire.

3.4.5.7 MIXED CONIFER/DOUGLAS FIR/ASPEN

Mixed conifer/Douglas fir and aspen woodlands cover less than 1,000 acres in specific areas within the Monticello PA. Healthy forests would include a grass/brush understory as well as differing age classes of trees. To achieve this, management objectives include allowing wildland fire where it is possible without high-severity fire and encouraging fuels treatment to retain age diversity, remove ladder fuels, and to reduce fuels where wildland-urban interface values are at risk. Preferred ES&R treatments include tree planting to promote forest regeneration.

3.4.5.8 PONDEROSA PINE

There are approximately 1,000 acres of ponderosa pine forest in the Monticello PA, most of which is considered condition class three in need of treatment. The DWFC of a healthy ponderosa stand would be open stands with grass/forb understory and a diversity of age classes. Management objectives include allowing fire to play a natural role when possible by allowing fire, conducting mechanical fuels treatments, and consideration of seeding in ESR treatments.

3.4.5.9 RIPARIAN WETLAND

Although this vegetative type covers less than one percent of the total acreage in the Monticello PA, overall it is a vital component. DWFC of riparian wetland focuses on the reduction of invasives and the retention or restoration of the historic vegetative composition appropriate to the site. Management objectives allow low-intensity fire in most riparian areas and encourage prescribed fire and mechanical treatment to restore native riparian and wetland species. Active as opposed to passive restoration would be the primary focus of ES&R treatments in riparian wetland areas.

3.4.6 Fire Management Priorities

Protection of human life, including the lives of firefighters committed to an incident, is the mandated priority for fire management activities. This priority overrides other strategies, actions, and RMP resource goals and objectives. The protection of human communities and infrastructure, other property and improvements, and natural and cultural resources is based on human health and safety, and the costs of protection. Balancing priorities in fire management decisions considers the protection of WUI areas, the maintenance of existing healthy ecosystems, the protection of high priority sub-basins or watersheds (HUC 4 or HUC 5), special status species, and/or cultural resources and landscapes.

3.4.7 Fire Management Activities to Meet DWFC

All BLM field offices were given national direction to establish general landscape level goals and objectives for fire management. Landscape level management goals incorporated into the Utah Land Use Plan Amendment for Fire and Fuels Management (BLM 2005g) that apply to the Monticello PA include:

1. Establishing firefighter and public safety as the primary goal in all fire management decisions and actions.
2. Using wildland fire to protect, maintain, and enhance resources and when possible allowing fire to assume a natural ecological role.
3. Reducing hazardous fuels to protect human, natural and cultural resources as well as to restore ecosystems and protect communities.
4. Suppressing fires according to resource objectives and with consideration for firefighter/public safety and other benefits and values to be protected.
5. Providing a consistent, safe, and cost-effective fire management program through appropriate management of planning, staffing, training, and equipment.
6. Establishing fire management units (FMUs) for acreages with burnable vegetation on all BLM-administered lands.
7. Providing emergency stabilization, rehabilitation and restoration to protect and sustain resources, and to safeguard public health and safety as well as community infrastructure.
8. Working with partners and other affected groups to reduce risks to communities and to restore healthy ecosystems.

More specific resource objectives are incorporated in Fire Management Plans for individual field offices. To ascertain the most effective methods for achieving DWFC goals in each of the vegetative communities in Utah, fire management activities listed below were discussed and authorized in the decision record for the Utah Land Use Plan Amendment for Fire and Fuels Management (BLM 2005g).

3.4.7.1 Suppression

A wildland fire requires an appropriate management response or AMR. The AMR can range from full suppression to managing fire for resource benefit (wildland fire use). AMR is guided by the resource strategies, goals and objectives of the RMP with an emphasis on firefighter and public safety, benefits and values to be protected, and suppression costs. FMU objectives as described in the FMP would provide further guidance for an AMR.

3.4.7.2 Wildland Fire Use for Resource Benefit

Wildland fire use may be an AMR to a naturally-ignited wildland fire to accomplish specific resource management objectives in predefined designated areas. Operational management of wildland fire use for resource benefit is detailed in a Wildland Fire Implementation Plan (WFIP). Due to resource condition (FRCC) and proximity to values at risk, wildland fire for resource benefits is not acceptable on all BLM lands within the Monticello PA. As the DWFC of resources move from a higher FRCC to a lower FRCC, wildland fire use for resource benefits in some FMUs may become more practicable. FMUs will be periodically reassessed by fire and fuels staff as well as by resource staff to ascertain changes in vegetation and potential for wildland fire use as a resource tool.

3.4.7.3 Prescribed Fire and Non-Fire Fuels Treatments

Prescribed fire and non-fire treatments are utilized for hazardous fuels reduction and for community protection from wildland fire. Treatments are also implemented to accomplish resource goals and objectives such as wildlife and range improvements. Treatment projects and acreages are determined through RMP goals and objectives.

Approximately 90 percent of all non-fire treatment acres are mechanical and/or seedings. Chemical and biological treatments comprise less than ten percent of total non-fire treatment acreages. Limitations in applying prescribed fire to meet fuels reduction targets include the condition of vegetation (i.e., aggressive non-native species invasion, or extended periods of drought), air quality restrictions, restrictions on motorized access, budget allocations, personnel capabilities, risk, policy and guidance, and social acceptability.

3.4.7.4 Emergency Stabilization and Rehabilitation

Emergency stabilization and rehabilitation actions following wildland fire may be implemented to protect and sustain resources, and to safeguard public health and safety as well as community infrastructure. All ES&R activities following wildland fire in the Monticello PA would be implemented following the Emergency Fire Rehabilitation Handbook (BLM 1999a) and treatments would be designed according to the Normal Year Fire Stabilization and Rehabilitation Plan (NFRP) for the Moab Fire District, of which the Monticello Planning Area is a part.

3.4.7.5 Monitoring

Monitoring actions would quantify results from fire management decisions and activities. Monitoring conclusions could be used to determine the need for additional or different activities, revisions to the FMP and/or NFRP, or amendments to the RMP.

3.4.8 Summary

National fire management policy has changed and advanced over the past several years in response to increased fatalities, property loss, local economic disruptions and the risk to ecosystems associated with severe wildland fire seasons and increasing WUI conflicts. Because of the imperative to immediately incorporate national and interagency direction into BLM fire management, the Utah BLM amended several BLM land use plans to include fire management direction and current scientific understanding regarding the nature of fire in the ecosystem. The Utah Land Use Plan Amendment for Fire and Fuels (BLM 2005g) is a lengthy document with an

accompanying biological opinion from the U. S. Fish and Wildlife. Although it remains a separate document, fire and fuels management direction contained within the amendment is incorporated by reference in this RMP in its entirety, along with all appendices, tables, and attachments. Also incorporated into this RMP are the resource protection measures (RPMs) identified through the LUP Amendment process that were determined necessary to protect natural or cultural resource values in the implementation of fire management practices.

Fire management direction, activities, and objectives that affect the resources within the Monticello PA are summarized above. Specific goals and objectives for resources within the Monticello PA that are determined in this RMP and that may alter or augment the current decisions for fire and fuels management as dictated by the Utah Land Use Plan Amendment for Fire and Fuels Management (BLM 2005g) will be analyzed in Chapter 4 of this document.

3.5 Health and Safety

3.5.1 Introduction

A priority in land management for the Monticello FO is ensuring health and human safety on its public lands. The BLM's goals are to effectively manage hazardous materials and safety hazards on the public lands to protect the health and safety of public land users and stewards, protect the natural and environmental resources, minimize future hazardous and related risks, costs and liabilities, and to mitigate physical hazards in compliance with all applicable law, regulation, and policy. These goals stem from the BLM's response to the finding of the National Research Council, Committee to Evaluate the Hazardous Materials Program of the Bureau of Land Management (the Committee). In 1992, the Committee recommended that the BLM "…integrate hazard management activities into BLM's continuing land use planning and environmental functions." Accordingly, BLM follows its national, state, and local contingency plans as they apply to emergency responses. These plans are also consistent with federal and state laws and regulations.

3.5.2 Hazardous Materials

Hazardous materials are generally defined as a usable product or substance that may cause harm to humans, natural resources, or the environment when spilled, released, or physically contacted. Hazardous materials are used in every day activities and may be in the form of a solid, liquid, or gas. Regardless of their physical state, hazardous materials may be toxic, flammable, combustible, reactive, and/or corrosive. When used and stored properly, associated risks are minimized or eliminated.

Physical hazards that pose a threat to the health and safety of humans or animals (e.g., abandoned mine sites, abandon structures, dams, earthquakes, floods, discarded solid waste, etc.) are responsibilities under this program.

Hazardous materials problems within the Monticello PA can result from programs conducted by state and local governments, by local businesses and industries, and/or by illegal dumping of hazardous materials on lands administered by the BLM. There are no approved hazardous material dumps or repositories within the Monticello PA.

3.5.2.1 POTENTIAL HAZARDS

The various producers of hazardous waste pose a potential impact to the health and safety of area residents and visitors, and to the physical environment itself. Both commercial and illegal activities can lead to the creation of hazardous waste sites. Spills, illegal dumping, and the discovery of abandoned hazardous materials are probable within the Monticello PA boundaries. Contaminants from these sites can pose an imminent threat to public safety and negatively impact the environment by impacting soils, ground water flows, air quality, and water quality. The following paragraphs discuss the area's potential hazardous material generators within the Monticello PA.

Oil and Gas Drilling Operations

Oil and gas drilling operations are a major user and producer of hazardous materials within the Monticello PA. Potentially hazardous materials or substances typically used in drilling and completion operations are listed in Table 3.9. These substances are contained by the operator and disposed of in a licensed commercial disposal facility. Oil and gas operations are exempt from the Resource Conservation and Recovery Act (RCRA) as oil or gas products become subject to RCRA only after they have been purchased from the oil and gas operator. Oil and gas operations are required to have an emergency response protocol to manage hazardous materials during production and transportation.

Table 3.9. Typical Hazardous Materials Used in Well Drilling and Completion Operations

Hazardous material or substance	Use
Sodium hydroxide	pH control
Diesel fuel	Engine fuel while drilling
Methanol	Surfactant
Hydrochloric acid	Acidizing agent
Acetic acid	Acidizing agent
Formaldehyde	Acidizing
Ethylene glycol	Coolant/dehydration
Benzene, hexane	Natural gas condensate
Lead, cobalt, barium, and manganese compounds	Paints (various types)
Zinc and copper compounds	Grease and lubrication oil
Propane	Fuel

Source: BLM 2005j.

Well fires are rare but could occur under favorable conditions, and a well fire could result from a blowout during drilling activities or from a gas leak during extraction operations. Conditions that would cause gas accumulation in a confined space, and ignition by a spark would likely produce a well fire. Well fires and explosions during and after drilling operations are a potential health and safety risk, but there have been no reported well fires within the Monticello PA since 1990 (personal communication between Jeff Brown, Monticello FO, and Laura Burch, SWCA on September 5, 2006). Currently, the UDOGM Rule R649-3 *Drilling and Operating Practices*

(from the Oil and Gas Conservation General Rules) requires trash control measures in order to minimize surface fire-hazard risks.

Oil and Natural Gas Pipelines

There are several major natural gas pipelines within the Monticello PA along with numerous secondary pipelines. Operators of the major pipelines include Williams, Western Gas Resources, and EnCana Oil and Gas (USA) Inc. Hazardous materials associated with natural gas pipelines include diesel fuel emissions from compressor stations, and benzene and hexane from natural gas condensates. Pipeline accidents have been infrequent in the County, but a possibility of accidents remains due to a number of factors including earthquake, landslide, flood, dam failures, wild fire and man-made causes (San Juan County 2002a). Please see San Juan County's Hazardous Materials Emergency Response Plan (HMERP) for locations of pipelines.

Within the Monticello PA, water, natural gas, and oil pipeline leakages or ruptures have been occurring annually, with an average of two to three incidences per year. The leakages or ruptures often occur close to the well pads. They are repaired and cleaned up by the operator or the BLM, and contaminated soil is taken to appropriate disposal facilities on BLM-administered or private lands (personal communication between Jeff Brown, Monticello FO, and Laura Burch, SWCA on September 5, 2006).

Pipeline design, materials, maintenance, and abandonment procedures are required to meet the standards set forth in U.S. Department of Transportation (DOT) regulations (49 CFR Part 192, Transportation of Natural Gas by Pipelines). Further construction specifications are recommended for safety and are available through the American Society of Mechanical Engineers (ASME-31.8) and the American Petroleum Institute (API Standard 1004).

Mining Operations

Mining operations are currently a minor user and producer of hazardous materials within the Monticello PA. While the majority of mining operations in the Monticello PA are no longer active, a few operations are currently in production including the Lisbon Valley Copper Mine (under Moab FO jurisdiction) and the White Mesa Uranium Mill. Potentially hazardous materials or substances typically used in mining and processing operations may include those items listed in Table 3.9. As with oil and gas operations, these substances are contained by the operator and disposed of in a licensed commercial disposal facility. Performance standards for mining operations, including environmental standards, are regulated by 43 CFR 3809.420, RCRA and its implementing regulations in 40 CFR 240-282, and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). Additionally, mine site reclamation must address hazardous materials to comply with state law, UCA-40-8-2(3). Abandoned mine reclamation is discussed later as a specific safety hazard within the Monticello PA.

Uranium Tailings

The White Mesa Mill, located in Blanding, Utah, currently receives, processes, and disposes of uranium-bearing waste material. The mill has been in operation for over 20 years and is owned by the International Uranium Corporation.

Fry Canyon is an abandoned uranium mill site located in central San Juan County. The site is under the BLM's jurisdiction and has not yet been reclaimed.

Storage Tanks

The presence and use of Aboveground Storage Tanks (AST) and Underground Storage Tanks (UST) are regulated by the EPA and administered by the State of Utah. It is the responsibility of the operator to understand and comply with the EPA regulations that became effective on December 22, 1998. Within the Monticello PA, storage tanks located on private lands include gasoline and fuel storage facilities, bulk propane and butane facilities and local propane service stations. There are no known storage tanks on BLM lands within the planning area.

Landfills and Transfer Stations

Landfills are subject to regulation under the RCRA. The San Juan County Landfill is the only permitted landfill within the Monticello PA and three transfer stations are located in the county in Bluff, Mexican Hat, and La Sal. Waste collection services by city and county vary with each community. Where solid waste collection is not provided, residents are required to take their solid waste to a nearby transfer station.

San Juan County owns and manages the County Landfill. By law the landfill cannot take in any hazardous waste to be buried in the landfill. Hazardous waste is anything flammable, toxic, reactive, or corrosive, such as pesticides, liquids, batteries, bio-medical wastes, used oil, PCBS, friable-asbestos, or radioactive waste.

Illegal Dumps

The remoteness of lands within the Monticello PA creates an opportunity for illegal dumping of hazardous materials. If responsibility for the illegal dumping can be determined, then the information is reported to the appropriate authorities for prosecution. Protocol for removing illegally dumped hazardous material can be found in San Juan County's HMERP.

Small Businesses

The types of small businesses that generate or use hazardous materials include automotive, dry cleaning, printing, and hospitals. These operations are regulated by the EPA and administered by the State of Utah. It is the responsibility of the business owner to understand and comply with EPA regulations.

Transportation

Transportation accidents could lead to accidental spills and releases within the County. According to the County's HMERP, transportation releases pose the highest threat to the public and emergency responders. Trucks carrying hazardous materials use the County's major highway corridors, SR-191, SR-163 and SR-66 as transportation routes from El Paso, Texas and Albuquerque, New Mexico to Salt Lake City, Utah. Additionally, oil and gas development within the County requires the transportation of hazardous materials on many state and county roads.

3.5.2.2 HAZARDOUS MATERIALS MANAGEMENT

The Monticello FO Hazardous Materials Program is responsible for hazardous materials handling, storage, transport, and emergency response. In October 2002, the Monticello FO approved an HMERP that specified the necessary steps to begin an emergency response. There are also several state and federal mandates, authorities, and handbooks that provide the BLM

with management guidelines, objectives and actions pertaining to hazardous materials management. The federal and state prescribed mandates ensure the field office's compliance with applicable laws and regulations.

Management objectives identified within these documents include:

- Protecting public health, safety, and the environment on public lands;
- Identifying and controlling hazards or threats to human health and the environment from hazardous materials releases on public lands;
- Ensuring that activities on public lands comply with applicable federal, state, and local laws, regulations, policies, and procedures;
- Preventing hazardous waste contamination by BLM-authorized actions; and
- Maintaining land health through assessment, cleanup, and reclamation of contaminated sites.

Management actions include:

- Determining, through a pre-acquisition environmental assessment, the nature and extent of potential liability resulting from hazardous substances associated with property during acquisitions and disposals;
- Reporting, securing, and cleaning up public lands within the Monticello PA that are contaminated with hazardous wastes in accordance with federal laws, regulations, and contingency plans;
- Identifying parties responsible for hazardous waste contamination who are liable for cleanup and resource damage costs;
- Identifying appropriate mitigation for surface disturbing activities associated with hazardous materials and waste management; and
- Following precautions to prevent hazardous waste releases into the environment, and providing adequate warning to potentially affected communities should such releases occur.

3.5.3 ABANDONED MINES

The early mining practices in San Juan County were subject to minimal environmental regulations as was common with most mining districts throughout the West. Federal land management agencies had no requirements for reclamation of abandoned mines on public lands. Mine closures were often inadequate or non-existent. While many abandoned mines are small and their waste is inert, some abandoned mines are a threat to human health and the environment. Physical safety hazards associated with abandoned mines can also be a concern on public lands.

According to the Monticello FO Mineral Potential Report, there are 17 mining districts within the Monticello PA. Within the mining districts, there may be between 1,000 to 1,500 abandoned openings (personal communication between Terry Snyder, BLM and Laura Burch, SWCA Environmental Consultants, February 2, 2006). Areas with the highest concentration include Cottonwood Wash, Montezuma Canyon, Lisbon Valley, Red Canyon, White Canyon/Fry Canyon, Deer Flat, Elk Ridge, and the southern section of Indian Creek (BLM 2005b).

3.5.3.1 POTENTIAL HAZARDS

Abandoned mine sites may pose hazards and risks to human health, the environment, and physical safety. Threats to health and the environment include: acid drainage, heavy metal contamination, metal contaminated tailings impoundments, stored chemicals, and leaking containers. Changes in the chemical composition or soil loss near abandoned mine land (AML) sites can result in alterations or loss of natural habitat for native wildlife. Abandoned mines may also impact ground water flows and water quality. The impacts to water quality are generally the result of contaminated sediments or metal salts that can affect human health, fisheries, wildlife, and vegetation. Air pollution from contaminated dust can occur on tailings impoundments and waste rock piles near abandoned mill sites. There may also be releases or potential releases of hazardous substances from waste materials and acid drainage beyond AML sites.

Open mines are unstable; mine adits (horizontal openings or tunnels) may collapse, internal supports may fail, and mine shafts (vertical openings) and winzes (vertical connections between adits) may be obstructed or unseen. Oxygen can be at lethally low concentrations and toxic gases can be at high concentrations or capable of displacing oxygen. Exposure to radiation in the mine atmosphere, particularly radon gas, can be a hazard, especially in abandoned uranium mines. Many abandoned mines in southern Utah are potential sources of radiation.

Water can be a hazard in flooded mines; shallow water can conceal winzes and sharp objects. Hazardous wastes, such as boxes or containers of explosives, and chemicals used in milling or drilling operations could be present. Illegal dumping of hazardous wastes within abandoned mines is also a possibility.

3.5.3.2 ABANDONED MINE MANAGEMENT/RECLAMATION ACTIVITIES

BLM has recently developed the AML program that addresses the environmental and safety hazards associated with AML sites on public lands. Once the sites are identified they are then prioritized, and appropriate actions are taken on the historic mine sites that pose health and safety risks. The BLM's priority for reclamation of environmentally contaminated sites is based on risk assessments that address threats to human health and the environment. For example, abandoned mine land sites that impact water quality are usually a greater concern and receive a higher priority for reclamation than those that do not impact water quality.

In conformance with BLM's long-term strategies and national policies regarding AML, this RMP recognizes the need to work with our partners toward identifying and addressing physical safety and environmental hazards at all AML sites on public lands.

3.5.4 DEBRIS FLOWS

There are no known sites in the planning area subject to debris flows; therefore this plan will not address this concern.

3.6 LANDS AND REALTY

3.6.1 RESOURCE OVERVIEW

Under the Federal Land Policy and Management Act of 1976 (FLPMA), the BLM has the responsibility to manage the public lands for multiple use and sustained yield and develop

management plans. As defined by FLPMA, public lands are those federally-owned lands, and any interest in lands (e.g., federally-owned mineral estate), that are administered by the Secretary of the Interior, specifically through the BLM. The land surface and mineral ownerships within the Monticello PA are varied and intermingled; consequently, so are the administrative jurisdictions for land use and minerals. The boundaries of the Monticello PA contain approximately 4.5 million acres, of which approximately 1.8 million acres, (39 percent), are public lands administered by the BLM. Another 54 percent of lands within the PA boundary are under the ownership of other federal or state agencies. Because of the retention mandates of the other federal agencies and the mandates of state land ownership, BLM-administered lands are generally considered to be available to help with the county economic base and future community expansion needs. For the most part, the public lands are located in large, contiguous tracts that provide for effective and efficient management (see Map 1).

3.6.2 MONTICELLO FO LANDS AND REALTY PROGRAM

Management of ownership and access to lands within the Monticello PA falls under a variety of categories. These categories depend on whether the BLM is retaining lands, relinquishing control of lands (e.g., sales, exchanges, etc.), granting rights-of-way, permits, or other access, withdrawing lands for certain uses, or otherwise determining the disposition of specific tracts of land. The various categories of lands and realty management within the PA are discussed in the following sections.

The overall goals of the BLM lands and realty program are to:

- Manage the public lands to support goals and objectives of other resource programs;
- Respond to public requests or applications for land use authorizations; and
- Acquire administrative and public access where necessary to enhance the resource management objectives of the BLM.

3.6.2.1 LAND TENURE ADJUSTMENTS

As mandated by Section 106(a)(1) of FLPMA (43 USC 1701), public lands are retained in federal ownership. The exception being those public lands that have future potential for disposal (i.e., sale and exchange), as described under Sec. 203(a) and Sec. 206 of FLPMA (43 USC 1713; 1716). Public lands have potential for disposal when they are isolated and/or difficult to manage. Lands identified for disposal must meet public objectives, such as community expansion and economic development. A balanced approach involving land sales and other disposal methods (land exchange, RPP, etc.) would be used. Other lands can be considered for disposal on a case-by-case basis. Disposal actions are usually in response to public request or application that results in a title transfer, wherein the lands leave the public domain. Appendix C – Lands and Realty lists lands identified for disposal within the Monticello FO. Two land acquisitions, both from private parties, have taken place in the recent history of the Monticello FO. In 1996, the BLM purchased approximately 560 acres east of Hovenweep National Monument. In 2000, an exchange resulted in the acquisition of 160 acres west of Hovenweep. Both acquisitions were acquired to provide a buffer adjacent to the Monument.

Split-estate situations are generally avoided when acquiring land, if possible. Management of such lands and the resources they contain is difficult, and the special mandates placed on split-

estate lands may run contrary to the overall resource program goals and objectives of the BLM. Split-estate lands within the FO are primarily within the McCracken Extension.

3.6.2.1.1 Sales

Public sales are managed under the disposal criteria set forth in Section 203 of FLPMA. Public lands determined suitable for sale are offered on the initiative of the BLM. The lands are to be sold at not less than fair market value. Public lands classified, withdrawn, reserved, or otherwise designated as not available or subject to sale are unavailable.

The Monticello FO has not had an aggressive program to dispose of public lands through exchange. The lands that are currently identified in Appendix C – Lands and Realty would be considered for disposal, except in cases where said lands contain species status species or their critical habitat.

3.6.2.1.2 Exchanges

Exchanges are initiated in direct response to public requests or by the BLM, to improve management of the public lands. Lands need to be formally determined suitable for exchange. They are to be in the best interest of the public before an exchange would be considered. In addition, lands considered for acquisition would be those lands that meet specific land management goals identified in the RMP.

Land disposals are not the most important transactions in the Monticello PA. They are time-consuming and expensive. Most parcels listed or proposed for disposal are small, usually 40 acres or less.

3.6.2.2 Access

FLPMA guarantees that access to public lands is provided throughout the Monticello PA. Access may be closed or restricted, where necessary, to protect public health and safety, and to protect significant resource values.

3.6.2.3 Easements

Public land cannot be effectively administered without legal and physical access. Easements are acquired to provide access to public lands for recreational, wildlife, range, cultural/historical, mineral, ACEC, special management areas, and other resource needs.

Methods used to acquire legal rights that meet resource management needs include negotiated purchase, donation, exchange, and condemnation. Acquisition alternatives include purchase of fee or less-than-fee interest above, on, and below the surface; and perpetual exclusive, and permanent or temporary nonexclusive, easements. Acquisition of road or trail easements is probably the most frequently encountered access need. Easements can include:

- road easements
- scenic conservation easements
- sign locations
- stream clearance projects
- utility easements

- hunting and fishing easements
- range improvements
- conservation easements

Acquisition of access rights support one or more of these resources: lands, minerals, woodlands, range, wildlife, recreation, and watershed. Most existing easements in the Monticello PA are related to range management (fences, roads, spring developments), though one is a conservation easement related to sage grouse. Additional easements can be acquired when there is a need; however, no such need had been identified as of the writing of this document.

3.6.2.4 Leases and Permits

Section 302 of FLPMA authorizes the use, occupancy, or development of public lands, through leases and permits, for uses not authorized under other authorities. Applicants can be state and local governments and private individuals. These uses of public lands include agricultural development, residential use (only under certain conditions), commercial use, advertising, and National Guard use. Leases are long-term authorizations that usually require a significant economic investment in the land.

Permits are usually short-term authorizations not to exceed three years. Filming permits are one of the more commonly requested permits. The Monticello FO issued 27 film permits during calendar years 1998 through 2003. Because of the time sensitive aspect of filming, the BLM is using this RMP process to establish minimum impact criteria for film permitting. These criteria will simplify both the applications and approval process, resulting in fast and efficient processing of filming permit applications (see Actions Common to All, in Chapter 2). Map 4 illustrates common filming locations.

3.6.2.5 Withdrawals/Classifications

Withdrawals are formal actions that set aside, withhold, or reserve federal land by statute or administrative order for public purposes. A withdrawal may remove areas from the public lands to be managed under the authority of another federal agency or department, but the land does not leave federal ownership.

Withdrawals accomplish one or more of the following:

- Transfer total or partial jurisdiction of federal land between federal agencies.
- Close (segregate) federal land to operation of all or some of the public land laws and/or mineral laws.
- Dedicate federal land to a specific purpose.

Withdrawals are often used to preserve sensitive environmental values, protect major federal investments in facilities or other improvements, support national security, and provide for public health and safety. Withdrawals segregate a particular portion of public lands, suspend operation of the public land laws (withdrawn from settlement, sale, location, or entry), and prevent any disposal of public lands or resources involved in certain types of land use application. Withdrawals remain in effect until specifically revoked.

Withdrawal review is mandated by FLPMA, which requires the BLM to eliminate all unnecessary withdrawals and classifications. The BLM must ensure withdrawals are supported

by showing need, and must revoke withdrawals that lack sufficient justification. Before recommending a withdrawal is continued, the BLM must explore alternatives such as rights-of-way and interagency agreements.

Three withdrawals existed within the Monticello PA as of 2005. Two of the withdrawals were for the Baker Administrative Site of the U.S. Forest Service, and one was to accommodate a road to Natural Bridges National Monument for the National Park Service (Table 3.10). There are no pending withdrawals.

Table 3.10. Existing Withdrawals in the Monticello PA

National Park Service	T. 37 S., R. 18 E.	Road to Natural Bridges
U.S. Forest Service	T. 33 S., R. 23 E.	Baker Administrative Site
U.S. Forest Service	T. 33 S., R. 23 E.	Baker Administrative Site

In addition to the above withdrawals, the 1991 RMP identified several withdrawals that were to be undertaken. These withdrawals were never initiated.

There are several Power Site Reserves/Classifications along the San Juan River corridor administered by the Monticello FO. The lands were opened to the operation of the mining laws in 1958; therefore, their only withdrawal is from disposal actions. Rights-of-way can be granted on these lands with a Federal Energy Regulatory Commission (FERC) stipulation in the grant. Disposal actions require partial revocation of the withdrawal.

3.6.2.6 UTILITY/TRANSPORTATION SYSTEMS

3.6.2.6.1 RIGHTS-OF-WAY

A right-of-way (ROW) is an authorization to place facilities over, upon, under, or through public lands for construction, operation, maintenance, or termination of a project. Public lands are made available throughout the Monticello PA for ROWs. With the exception of defined exclusion and avoidance areas, the FO area is subject to ROW designations. ROWs either will not be granted in these exclusion or avoidance areas, or, if granted, will be subject to stringent terms and conditions. The areas are ROW exclusion and avoidance areas:

<u>Avoidance Areas</u>

- Alkali Ridge ACEC
- Bridger Jack Mesa ACEC
- Butler Wash ACEC
- Cedar Mesa ACEC, partial
- Hovenweep ACEC
- Indian Creek ACEC
- Lavender Mesa ACEC
- Pearson Canyon hiking area
- Scenic Highway Corridor ACEC
- Shay Canyon ACEC

- Most ROS P-class areas

Exclusion Areas

- Cedar Mesa ACEC, partial (Grand Gulch special emphasis area)
- Dark Canyon ACEC
- ROS SM-class area in San Juan River SRMA
- Developed recreation sites

ROWs are granted on a case-by-case basis. The majority of ROWs granted between 1998 and 2005 were for non-energy type activities. Only 34 percent of new ROWs have been for oil and gas gathering systems or roads. In the same period, 35 ROWs were transferred to right-of-way holders. Of these, 17 percent were not energy related and 83 percent were energy related. Historically, pipeline ROWs granted within the area have been small surface pipelines, because they were determined to be least environmentally damaging. The larger diameter (10 inches and over) pipelines have been buried. Exclusion areas prohibit ROWs and corridor/window designation. The trend in oil and gas development during the early 2000s suggests that demand for rights-of-way within the Monticello PA will continue to increase into at least the near future.

3.6.2.6.2 Right-of-Way Corridors

ROW corridors were presented as existing groupings of ROWs for electric transmission facilities, pipelines 10 inches and larger, communication lines, federal and state highways, and major county road systems. However, no specific areas were identified by map or legal description. In the 1999 Western Utility Corridor Study (WUG), the US Highway 191 corridor, the UP&L 345kV line, and the MAPCO/Williams loop pipelines were identified as preferred ROW corridors through the Monticello PA. The West-wide Energy Corridor Study of 2006 identifies corridors through the Monticello FO.

3.6.2.6.3 Communication Site Rights-of-Way

The explosion of wireless networking in the U.S. has fostered an expectation from the public that they will have cell phone coverage virtually anywhere. Within the Monticello PA, there are 10 designated communication sites. This trend is expected to continue with increasing demands placed on the existing ten sites. Communications sites within the FO are illustrated on Map 4.

3.6.2.7 Trespass

The BLM is responsible for realty trespass abatement, which includes prevention, detection, and resolution. Land authorizations, such as leases and permits, have been issued to resolve agriculture and occupancy trespass. Locations in the FO area where trespass typically occurs are along drainages, oil fields, and areas bordering public lands. Trespasses are dealt with as time and resources allow. Accordingly, many of the trespass occurrences that have occurred likely are not documented and pursued. At least 134 trespass case files have been serialized since 1991. Most have been closed and could be reopened if needed to resolve the trespass.

3.6.2.8 Recreation and Public Purposes Act (R&PP)

The R&PP Act was established by Congress as a means for state and local governments as well as non-profit organizations to acquire public lands at no cost or a reduced cost. Many western

governmental entities have taken advantage of this Act to provide the public with much needed local services and locations for recreational activities.

To date, 11 R&PP authorizations had been made within the Monticello PA (Table 3.11).

Table 3.11. R&PP Authorizations for the Monticello PA

R & PP Leases/Grants	Authorization Type	Purpose	Acres
American Legion	Patent	Rodeo grounds	40.00
San Juan Foundation/Blanding	Patent	Hiking trail	160.00
L. D. S. Church	Patent	Church building	2.00
San Juan County	Patent	Road shed	5.97
Utah Division of State Parks	Patent	State park	10.00
San Juan County	Patent	Landfill	390.00
City of Blanding	Patent	Reservoir	100.00
City of Blanding	Patent	Water pipeline & recreation site	158.00
College of Eastern Utah	Patent	Campus	40.00
San Juan Foundation	Patent	Campus	120.00
San Juan Water Conservancy District *	Classification	Recreation site	20.00

* R&PP application withdrawn. Classification still in place.

An additional 470 acres adjacent to Recapture Reservoir has been classified as suitable for R&PP lease or patent. The cities of Monticello and Mexican Hat have expressed interest in obtaining ownership of the parcels on which they have a right-of-way for city water treatment plants and the Mexican Hat sewer treatment facility. Although not currently classified for R&PP, these parcels are suitable for such classification as a means of transferring ownership to the cities.

3.6.2.9 Protection Zones

Protection Zones are small areas within which critical resources, such as potable water sources, exist and must be protected for health and human safety reasons. Within the Monticello PA, only one such protection zone has been established. This water source protection zone has been established around the water well supplying the Sand Island campground and boat launch facility. It is displayed on the appropriate master title plat.

3.6.2.10 Alternative Energy Sources

A national trend is to use public lands to develop renewable energy sources such as wind power, solar power, and hydropower. National organizations are looking at public land to help provide non-polluting power sources for a growing population. In the future, BLM-administered lands could play an increasing role in providing clean energy sources.

The U.S. Department of Energy publication "Assessing the Potential for Renewable Energy on Public Lands" prepared by the U.S. Department of Energy (DOE 2003) assessed the potential for the following renewable energy sources on public lands in the 11 western states: solar, biomass, geothermal, water, and wind. More recently, the *Programmatic EIS on Wind Energy*

Development on BLM-administered Lands in the Western United States (BLM 2005f) provided specific data on wind energy development potential on public lands. The data show that the Monticello PA has been identified as possessing a low potential for all of the resources studied.

3.7 LIVESTOCK GRAZING

3.7.1 INTRODUCTION

Livestock grazing allotments occur on approximately 99% of all BLM lands located within the Monticello PA boundary. An estimated 17,300 acres outside of grazing allotments are reserved for wildlife use (and unavailable for livestock grazing) and another 288 acres are an administrative horse pasture. Within boundary allotments, 125,356 acres are unavailable for livestock grazing for resource protection.

Of the lands within grazing allotments, 1,761,351 acres (78%) are BLM lands; 190,366 acres (8%) are SITLA lands; 53,704 acres (2%) are private; 261,574 acres (12%) are National Park Service lands; and 2,701 acres (>1%) are water. The acres within each entity are shown on Figure 3.4.

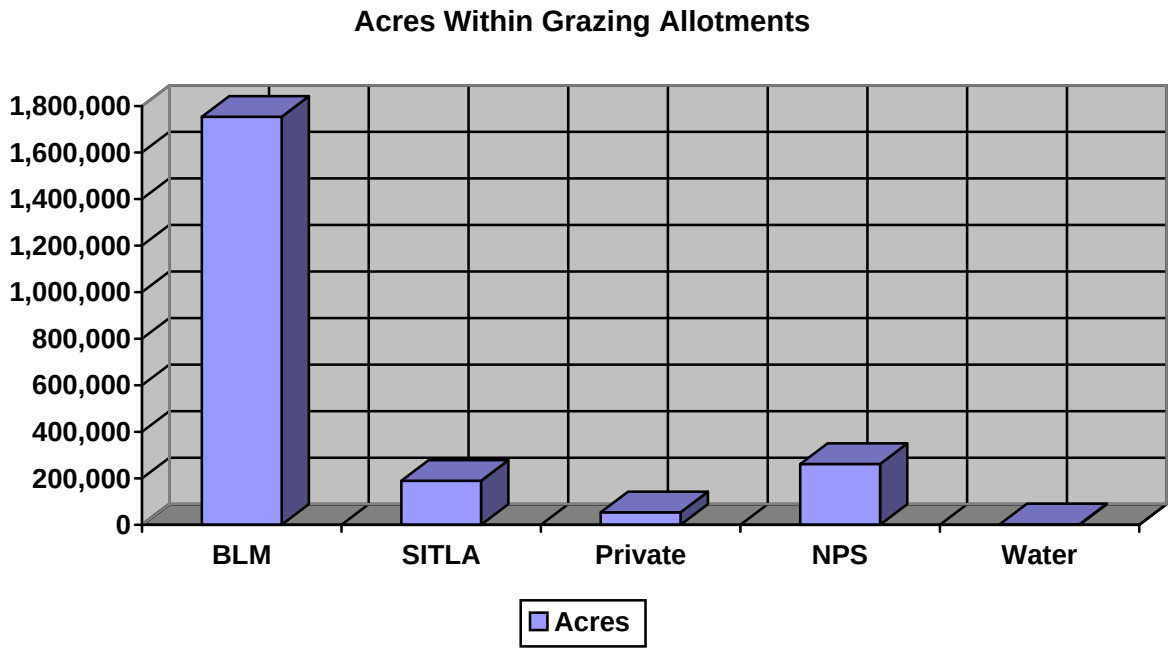


Figure 3.4. Acres within grazing allotments – Monticello PA.

3.7.2 RESOURCE OVERVIEW

The following sections provide a summary of the number of permitted allotments, amount of riparian area, allotment management categories, ecological status and current management practices for the allotments. Allotment-specific information can be found in Appendix D, Livestock Grazing.

3.7.2.1 ALLOTMENT STATUS

A total of 75 allotments exist within the boundaries of the Monticello PA. However, one of these allotments (Rogers) is currently not permitted for use by domestic livestock. The Squaw Canyon allotment, some of which is within the boundaries of the Monticello PA, is administered by the Durango FO.

In addition, the Monticello FO administers one entire allotment (Monucolo) and a part of another allotment (Bug-Squaw) located outside the Monticello PA boundary. The Monucolo allotment and the Colorado portion of the Bug-Squaw allotment are managed in accordance with direction given in the San Juan and San Miguel Resource Management Plan (Durango FO).

3.7.2.2 RIPARIAN AREAS

Riparian areas, consisting of 28,994 acres (based on 1990's inventory data, subject to reevaluation), occur within 49 of the allotments. The amount of riparian area occurring within these allotments ranges from 0.1 to 10.3 percent. Riparian areas comprise 1.3 percent of the total allotment acreage. Further information regarding riparian areas may be found in Section 3.11 – Riparian Resources.

3.7.2.3 ALLOTMENT MANAGEMENT CATEGORY

Each permitted allotment has been evaluated and designated into one of three categories: maintain (M), improve (I), or custodial (C). Allotments in the *M Category* are in generally good condition and have no serious resource conflicts under present management. These may have some potential for a positive return on investments. *I Category* allotments may have serious resource conflicts, or their resource production is below its potential under present management. These allotments have potential to improve or have conflicts that can be resolved through changes in grazing management or investments in range improvement projects. Allotments in the *C Category* have low productivity potential, limited resource conflicts, and no opportunity for a positive return on public investments. A more detailed list of criteria used for categorizing each allotment may be found under Section D.3, Criteria Used to Determine Allotment Management Category, of Appendix D.

3.7.2.4 LIVESTOCK GRAZING ALLOTMENTS

The number of allotments in each category are shown in Table 3.12 below.

Table 3.12. Allotments in the Monticello PA by Management Category

"M" Category (Maintain)	"I" Category (Improve)	"C" Category (Custodial)
9 Allotments (12%)	29 Allotments (39%)	36 Allotments (49%)

3.7.2.5 ECOLOGICAL STATUS

The ecological status of each allotment was estimated in the 1980s. Four classes are used to express the proportion of which the present kinds, proportions, and amounts of plants in a biotic community reflect the potential natural community (PNC). These classes are as follows:

Potential Natural Community (PNC):	76-100 percent similar
Late Seral:	51-75 percent similar
Mid Seral:	26-50 percent similar
Early Seral:	0- 25 percent similar

The percentage of acres within the allotments in each seral stage class are shown in Table 3.13 .

Table 3.13. Allotments within the Monticello PA Boundaries by Ecological Class

PNC	Late Seral	Mid Seral	Early Seral	Other (Rock Outcrop/Badlands/Seedings)
3.6%	13.0%	53.4%	17.1%	12.8%

3.7.3 CURRENT MANAGEMENT PRACTICES

Of the 74 allotments currently permitted within the Monticello PA boundaries, cattle graze 61 allotments and cattle and horses graze 13 allotments. A total of 78,796 animal unit months (AUMs) are currently authorized (active). Of these, 77,365 AUMs (98%) are used by cattle and 1,431 (2%) are used by horses. An additional 7,299 AUMs are allowed through exchange of use (other ownership). The term "AUM" is a measure of forage quantity and refers to the amount of forage necessary for the sustenance of one cow (including her calf under six months of age) or its equivalent for a period of one month. It is used to denote an increase or decrease in the amount of forage available for livestock grazing and not necessarily a change in grazing preference. "Grazing preference" or "preference" refers to the total number of AUMs on public lands that are attached to base property owned or controlled by the grazing allotment permittee, and includes both active AUMs (AUMs available for livestock grazing on a permittee's permit) and AUMs held in suspension (AUMs not available for livestock use until the BLM, through decision, would activate them).

The grazing management systems currently in use on the permitted allotments are as follows:

- Season-long – 35
- Deferred – 11
- Deferred rotation – 28

The lengths of season under season-long grazing systems vary from one to 12 months. The majority of grazing systems include both "dormant season" and "growing season" use. However, 12 allotments are grazed only during the growing season and nine allotments only during the dormant season.

Two of the permitted allotments (Tank Draw and East Canyon) have allotment management plans (AMPs) which prescribe a sequence of grazing among pastures in accordance with the terms and conditions of the grazing permits. The remaining 71 allotments are managed in accordance with the terms and conditions of each grazing permit. AMPs for many of these allotments may be developed in the future.

Appendix D includes various documents related to livestock grazing, including:

- Allotment Situation Summary

- Fundamentals of Rangeland Health
- Utah Standards and Guidelines
- Allotment Management Category Criteria
- Allotment Situation Tables

3.7.4 Resource Demand and Analysis Forecast

The resource demand is considered to be the amount of grazing by both domestic livestock and wildlife. However, the resource demand discussed here will be limited to grazing by domestic livestock, which is considered to be the total of current authorized (active) use (78,818 AUMs) and suspended use (17,173 AUMs). This amounts to a total resource demand by domestic livestock of 95,991 AUMs.

The changes in total authorized (active) use since the 1985 Management Situation Analysis are due to 1) changes in land ownership, or as a result of rangeland monitoring which indicated the need for adjustment, and 2) the grazing allotment closure in Comb Wash. In 1993, the Comb Wash allotment (comprised of approximately 63,398 acres of federal land in Mule Canyon south of U-95, and Arch, Fish, Owl, and Road canyons) was made unavailable to grazing by court decision (see IBLA 92-264) Trends in authorized use prior to that time are not known.

3.8 Minerals

The Monticello PA is known to have significant occurrences of mineral resources, as noted in a variety of studies. Recently, a multi-agency effort produced a "Scientific Inventory of Onshore Federal Lands' Oil and Gas Resources and Reserves and the Extent and Nature of Restrictions or Impediments to their Development" (U.S. Departments of the Interior, Agriculture, and Energy 2003). This report is based on the USGS estimation of undiscovered, technically recoverable resources, Energy Information Administration (EIA) reserve calculations, and an estimate of restrictions or impediments to the development of those resources and reserves. It is BLM policy to consider this information in its planning process. Although the main purpose of the report is to classify the availability of land for leasing and leasing stipulations, resources are also evaluated. The calculation of resources is primarily mathematical and the estimates are provided on a multiple-state, basin-wide scale and are of limited use on the local, planning area scale.

The BLM compiled more site-specific data based on oil and gas play areas, past exploration, and other records it has for the Monticello PA Numerous data sources, including USGS, UGS, academic research, UDOGM, industry and government sources, were used to compile the Mineral Potential Report for the Monticello Planning Area (BLM 2005b). It characterizes the mineral resources of the Monticello PA; summarizes past and present development activities; and classifies the potential and certainty for mineral occurrence and the potential for future development of each mineral resource. Mineral potential is classified using the rating system outlined in BLM Manual 3031 (USDI 1985; Table 3.14). Under this system:

- **Occurrence potential** is based strictly on the geologic likelihood of the mineral to be present in an area. It does not address the economic feasibility of developing the resource.
- **Development potential** for a resource is based on review of available literature on the mineral's market factors; communication with industry experts and government officials familiar with the specific resource and area; and other considerations such as occurrence

potential, historical development, commodity price, and supply and demand. The potential for development of each mineral resource is projected for 15 years, and is rated as high, moderate, or low (Maps 14–17).

Table 3.14. Ratings for Mineral Occurrence Potential and Certainty

Rating	Description
	Level of Potential Ratings
O	The geologic environment, the inferred geologic processes, and the lack of mineral occurrences do not indicate potential for the accumulation of mineral resources.
L	The geologic environment and the inferred geologic processes indicate low potential of accumulation of mineral resources.
M	The geologic environment, the inferred geologic processes, and the reported mineral occurrences or valid geochemical/geophysical anomaly, and the known mines or deposits indicate moderate potential for accumulation of mineral resources.
H	The geologic environment, the inferred geologic processes, and the reported mineral occurrences or valid geochemical/geophysical anomaly, and the known mines or deposits indicate high potential for accumulation of mineral resources. The known mines and deposits do not have to be within the area that is being classified, but have to be within the same type of geologic environment.
ND	Mineral potential not determined due to lack of useful data.
	Level of Certainty Ratings
A	The available data are insufficient and/or cannot be considered as direct or indirect evidence to support or refute the possible existence of mineral resources within the respective area.
B	The available data provide indirect evidence to support or refute the possible existence of mineral resources.
C	The available data provide direct evidence but are quantitatively minimal to support or refute the possible existence of mineral resources.
D	The available data provide abundant direct and indirect evidence to support or refute the possible existence of mineral resources.

3.8.1 Limited Mineral Resources Not Discussed Further

Geologic host formations exist in the Monticello PA for mineral resources *other* than those described and analyzed in detail in this EIS, but their known occurrence is limited or insignificant. There is minimal or no interest in the development of several minor resources present on public lands within the Monticello PA, including coalbed methane, geothermal water, lode gold, manganese, humate, gypsum, barite, zeolite, shale, fire clay, crushed stone, and collectable rocks. These resources are describe briefly here but will not be discussed further in this EIS.

- **Coalbed methane** development potential is very low or nonexistent. The coal in the Dakota Sandstone is generally thin and discontinuous and not usually thick enough to be an attractive reservoir. Shallow and dissected deposits of coal are likely to have lost any contained gas to the atmosphere. The coal is also of low rank, generally subbitumious C, and as such will not have generated any thermogenic gas. The coal is commonly impure or boney, with thinly

interlaminated shale, and nearly everywhere contains higher ash content (more than 30%), which reduces the gas carrying capacity of the coal.

- Low-temperature **geothermal waters** (20–36 °C [68–97 °F]) have been recorded from several springs and wells in the Monticello PA, including the Warm Springs Canyon geothermal area identified by the USGS. However, because of where the Monticello PA is situated within the Colorado Plateau geologic province, no high-temperature geothermal resources are expected within reasonable drilling depths (Gloyn et al. 1995). There is potential for direct use of low-temperature geothermal water for space heating of buildings, but no such development on public lands within the Monticello PA exists or is expected.
- Minor, non-commercial deposits of **lode gold** occur in the Tertiary intrusives of the Abajo Mountains (Witkind 1964; Gloyn et al. 1995).
- A small number of **manganese** deposits are found in Jurassic and Cretaceous sedimentary rocks along the Lisbon Valley fault system, which is mostly north of the Monticello PA (Baker et al. 1952; Weir and Puffet 1981; Gloyn et al. 1995). No recent exploration activity for manganese in these formations in the Monticello PA is known, and the potential for discovery of any economic deposits is minimal (BLM 2005b, 2005c).
- Weathered coal and carbonaceous shales and mudstones of the Cretaceous Dakota Sandstone have potential for sale as **humate**, a natural soil conditioner (Gloyn et al. 1995). However, no known humate exploration has taken place on public lands within the Monticello PA, and development potential is considered very low.
- **Gypsum** can be found throughout the Monticello PA in the Pennsylvanian Paradox Formation, the Permian Cedar Mesa Sandstone, and the Triassic Moenkopi Formation (Gloyn et al. 1995). However, gypsum is a very low unit value commodity and generally must be located close to existing wallboard plants to be economical. Therefore, development potential of gypsum in the Monticello PA is very low.
- A small amount of **barite** was reported associated with uranium-vanadium-copper mineralization at a mine in the west-central part of the Monticello PA (Trites and Chew 1955). However, these occurrences are insignificant compared to Nevada's large-bedded barite deposits and, thus, are not likely to be developed.
- Minor **zeolite** deposits are known to be contained in the Brushy Basin Member of the Morrison Formation, and hypothetically, potential exists for zeolite production in the Monticello PA (Gloyn et al. 1995). However, high-purity zeolites have not yet been found, and the zeolite industry continues to be very small.
- **Shale**, a low-energy mud that derives from marine sediments, occurs in beds of the Jurassic Kayenta Formation, which occurs throughout the Monticello PA (BLM 2005c). No information is available regarding past and present exploration, development, or production within the Monticello PA (BLM 2005b, 2005c).
- Common **fire clay** and fire clay of "fair to good quality" is known to occur in the Triassic Moenkopi Formation, the Petrified Forest Members of the Triassic Chinle Formation, the Brushy Basin and Westwater Canyon Members of the Jurassic Morrison Formation, and the Cretaceous Mancos Shale (Gloyn et al. 1995; BLM 2005c). No information is available regarding past and present exploration, development, or production within the Monticello PA (BLM 2005b, 2004b).

- **Stone suitable for crushing** in the Monticello PA includes limestones in the Pennsylvanian Hermosa Group Honaker Trail Formation and the Jurassic Navajo Sandstone (Ritzma and Doelling 1969), as well as some sandstones and conglomerates of the Cretaceous Dakota Sandstone and Burro Canyon Formation. Although LR 2000 records indicate there has been only one authorization since 1989 (BLM 2005b), this resource could become more significant as presently suitable sand and gravel resources are exhausted. In any event, the need for crushed stone in the foreseeable future is anticipated to be insignificant.
- **Collectable rocks** and semi-precious gemstones present in the Monticello PA include petrified wood containing opal and agate, chalcedony, garnet, azurite, and malachite. Petrified wood is found scattered throughout the Monticello PA, hosted in the Jurassic Morrison and Triassic Chinle Formations. Deep red to black pyrope garnets have been recovered from volcanic vent deposits of the Mule Ear and Moses Rock occurrences near Mexican Hat. The amount of garnet material known to be present in this area is so small that commercial extraction is unlikely (Gloyn et al. 1995). None of the above-mentioned collectable materials have been or are expected to be produced on public lands in large quantities.

3.8.2 LEASABLE MINERALS

Leasable minerals are subject to disposal by lease under the authority of the Mineral Leasing Act of 1920, as amended. A classification for leasable minerals such as a Designated Tar Sand Area (DTSA) or a Known Potash Leasing Area (KPLA) is an area where a potentially valuable deposit has been identified and where competitive leasing is required. Existing leases are shown on Map 15.

3.8.2.1 OIL AND GAS

The exploration and development of leasable minerals is accomplished in several stages of activity. The first stage (land categorization) involves determining which public domain lands should be leased and under what conditions. This is accomplished through the land use planning process. The second stage is leasing. The third stage includes exploration, development, and production operations.

The BLM has designated four allocations that describe the conditions placed upon public domain lands in regard to their availability for fluid hydrocarbon leasing. Under the existing plan, BLM has assigned one of four following oil and gas leasing stipulations to the public lands:

- Standard Stipulations – Areas identified with standard stipulations are open to exploration and development, subject to standard lease terms and conditions.
- Special Conditions – Areas identified with these stipulations are open to exploration and development, subject to relatively minor constraints such as seasonal restrictions.
- No Surface Occupancy – Areas identified as NSO are open to exploration and development subject to highly restrictive lease stipulations, including no surface occupancy.
- Closed to Leasing – Areas identified as closed to leasing either by discretionary or non-discretionary decisions. Discretionary closures involve lands where the BLM has determined that mineral leasing would not be in the public interest. Non-discretionary closures involve lands that are specifically closed to mineral leasing by law, regulation, Secretarial Decision, or Executive Order.

3.8.2.1.1 RESOURCE OVERVIEW

The primary formations from which oil and gas are currently being produced are the Ismay and Desert Creek zones of the Paradox Formation, the Devonian McCracken Sandstone Member of the Elbert Formation, the Mississippian Leadville Limestone, and the Pennsylvanian Honaker Trail Formation.

As described in the 1995 National Assessment of the United States Oil and Gas Resources – Results, Methodology, and Supporting Data (Gautier et al. 1996), the USGS has delineated a number of oil and gas plays, both structural and structural-stratigraphic, in the Paradox Basin Province. Approximately 70 oil and gas fields are located in these plays in the Monticello PA (Table 3.15). These 78 fields encompass approximately 1,135 active wells (including producing oil and gas wells, shut-in oil and gas wells, temporarily abandoned oil and gas wells, and water injection, disposal, and source wells; Table 3.16) and, as of December 2003, have cumulatively produced more than 535 million barrels of oil and 1.26 billion million cubic feet (mcf) of gas (UDOGM 2004; see Table 3.15). Approximately 5 – 21 oil or gas wells have been drilled per year in the planning area, with an average of 13 wells drilled per year on all lands in the planning area. Oil and gas plays that occur in the Monticello PA are as follows:

- The **Buried Fault Black play (2101)** is located in the northern part of the Monticello PA, in the Paradox Fold and Fault Belt. This play contains the McCracken Sandstone Member of the Elbert Formation and the Leadville Limestone. The largest of the six oil and gas accumulations in this play is the Lisbon field, which contains approximately 43 million barrels of oil and 250 billion cubic feet of natural gas.
- The **Porous Carbonate Buildup play (2102** contains most of the oil and gas fields in the Monticello PA (Huffman 1996a, 1996b). The fields in this play occur primarily in the Blanding sub-basin and produce oil and gas from mounds of algal limestone and dolomitic reservoirs in the Pennsylvanian Hermosa Group. This play contains the largest oil field in Utah: the Greater Aneth field.
- The **Fractured Interbed play (2103)** is an unconventional continuous-type play that depends on extensive fracturing in the clastic or carbonate interbeds between evaporates of the Paradox Formation. These same interbeds provide the source rocks for most of the oil and gas in the Paradox Basin (Huffman 1996a, 1996b). These include Kane Creek, Chimney Rock, Gothic, and Hovenweep Shales.
- The post-Mississippian **Salt Anticline Flank play (2105)** is also located in the northern portion of the Monticello PA. It occurs along the flanks of the northwest-trending salt anticlines in the area (Huffman 1996a, 1996b). Only a few oil and gas fields have accessed the Hermosa Group and Cutler Group reservoirs of this play.
- The **Permo-Triassic Unconformity play (2106)** extends west from the tar sand deposits of south-central Utah (Huffman 1996a, 1996b). Reservoirs for oil are in the Permian White Rim Sandstone and the White Rim and DeChelly Sandstones of the Paradox Basin. Reservoir thicknesses can vary from a few feet to several hundred feet. This play is only lightly explored and contains no developed oil and gas fields in the Monticello PA.
- Although not delineated as a Paradox Basin play, the USGS has also defined a hypothetical play in the southwest corner of the planning area called the **Late Proterozoic** (Chuar-sourced) and **Lower Paleozoic play (2403**; Huffman 1996a, 1996b; Butler 1996). Very few wells have penetrated the Chuar Group in Utah (Butler 1996).

Table 3.15. Monticello Planning Area Oil and Gas Field Statistics as of December 31, 2003 (Includes All Lands with the Area)

Field Name	UDOGM Field Number	Field Type	Producing Formation	Status	Year Disc.	Active Wells	Cumulative Oil Production (barrels)	Cumulative Natural Gas Production (mcf)	Cumulative Water Production
Akah	275	Oil	Ismay	Active	1958	2	526,222	494,661	2,033,332
Alkali Canyon	280	Gas	Desert Creek	Abandoned	1965	0	3,919	40,085	1,297
Alkali Point	481	Gas	Ismay	Inactive	1987	2	342	163,765	17
Anido Creek	285	Oil	Ismay	Abandoned	1958	0	612,082	424,388	718,051
Bannock	287	Oil	Ismay	Active	1989	1	216,855	755,978	30,279
Black Bull	297	Oil	Desert Creek	Active	1992	1	50,584	247,352	694
Bluff	295	Oil	Desert Creek	Active	1956	8	1,668,207	3,693,619	126,624
Bluff Bench	300	Oil	Ismay-Desert Crk	Abandoned	1957	0	14,531	4,593	13,762
Boundary Butte	305	Oil	Ismay-Desert Crk	Active	1947	25	5,448,763	13,218,702	23,205,666
Branford Canyon	310	Oil	Ismay	Active	1983	2	50,204	363,923	54,199
Broken Hills	315	Oil	Ismay-Desert Crk	Active	1959	1	143,692	86,193	209,360
Bronco	312	Gas	Desert Creek	Active	1992	1	4,471	109,386	138
Bug	320	Oil	Desert Creek	Active	1980	7	1,622,455	4,483,368	3,181,467
Caballo	736	Gas	Ismay	Active	1987	1	11,042	427,759	2,312
Cactus Park	484	Gas	Honaker Trail	Inactive	1987	1	0	3,500	354
Cajon Lake	730	Oil	Ismay-Desert Crk	Inactive	1988	1	40,197	166,571	10,778
Cajon Mesa	326	Oil	Desert Creek	Active	1992	1	126,073	663,259	14,997
Casa Mesa	489	Oil	Ismay	Abandoned	1986	0	3,370	5,252	13,573
Cave Canyon	323	Oil	Ismay	Active	1984	10	2,389,346	3,875,293	3,763,167
Cherokee	324	Gas	Ismay	Active	1987	3	182,464	3,667,068	3,358
Chinle Wash	325	Gas	Ismay-Desert Crk	Abandoned	1957	0	5,611	2,737,772	87,575
Clay Hill	327	Oil	Desert Creek	Active	1978	3	985,080	1,389,250	216,241
Cleft	330	Oil	Akah	Abandoned	1963	0	3,537	1,031	5,821
Cone Rock	335	Oil	Akah	Abandoned	1959	0	133	0	2
Cowboy	340	Oil	Ismay	Active	1968	2	217,367	41,045	16,229

Table 3.15. Monticello Planning Area Oil and Gas Field Statistics as of December 31, 2003 (Includes All Lands with the Area)

Field Name	UDOGM Field Number	Field Type	Producing Formation	Status	Year Disc.	Active Wells	Cumulative Oil Production (barrels)	Cumulative Natural Gas Production (mcf)	Cumulative Water Production
Dead Man Canyon	345	Gas	Ismay	Active	1983	3	21,380	1,093,684	5,460
Deadman-Ismay	346	Gas	Ismay	Active	1987	3	785,000	12,190,488	152,708
Desert Creek	350	Oil	Desert Creek	Active	1956	8	2,030,862	1,715,012	313,736
Gothic Mesa	355	Oil	Ismay-Desert Crk	Active	1956	8	1,941,156	1,277,313	362,046
Grayson	360	Oil	Ismay	Abandoned	1957	0	5,777	4,876	2,220
Greater Aneth	365	Oil	Desert Creek-Ismay	Active	1956	482	432,914,670	378,829,790	1,348,164,582
Hatch	370	Oil	Desert Creek	Abandoned	1958	0	15,148	40,891	0
Hatch Point	367	Oil	Ismay	Inactive	1993	1	4,607	10,731	259
Heron	447	Oil	Ismay	Inactive	1991	1	237,321	402,860	36,957
Hogan	375	Oil	Ismay	Abandoned	1961	0	756	775	98
Horse Canyon	448	Oil	Desert Creek	Active	1998	1	149,247	174,075	8,707
Ismay	380	Oil	Ismay	Active	1956	10	10,863,672	17,504,794	11,229,950
Kachina	379	Oil	Ismay	Active	1987	5	2,547,419	2,236,280	13,466,362
Kane Creek	377	—	Paradox	Abandoned	1925	0	—	—	—
Kiva	381	Oil	Ismay	Active	1984	5	2,610,110	3,739,168	14,376,896
Lightning Draw	742	Oil	Ismay	Abandoned	1988	0	2,039	9,178	1,674
Lightning Draw SE	743	Oil	Ismay	Inactive	1980	2	0	0	0
Lime Ridge	—	—	Ismay-Desert Creek-Akah	—	—	1	—	1,500,000 (CO_2)	—
Lisbon*	385	Gas	McCracken/Leadville	Active	1961	23	51,076,593	761,560,184	49,512,009
McCracken Spring	402	Oil	Ismay	Active	1987	3	403,288	1,947,709	13,031
McElmo Mesa	405	Oil	Ismay	Inactive	1965	0	2,219,175	2,927,239	6,122,732
Mexican Hat	410	Oil	Honaker Trail	Active	1908	81	278,007	1,547	692
Monument	403	Oil	Desert Creek	Active	1991	2	117,009	565,834	11,692
Mustang Flat	415	Gas	Ismay	Active	1982	8	773,299	16,349,062	19,344
Navajo Canyon	488	Oil	Ismay	Active	1977	1	39,049	25,441	6,189

Table 3.15. Monticello Planning Area Oil and Gas Field Statistics as of December 31, 2003 (Includes All Lands with the Area)

Field Name	UDOGM Field Number	Field Type	Producing Formation	Status	Year Disc.	Active Wells	Cumulative Oil Production (barrels)	Cumulative Natural Gas Production (mcf)	Cumulative Water Production
Patterson Canyon	420	Oil	Ismay	Active	1974	9	1,070,208	2,595,522	1,563,740
Paiute Knoll	425	NA	Ismay	Inactive	1972	1	0	0	0
Rabbit Ears	430	Oil	Ismay	Abandoned	1967	0	54,068	154,717	641,817
Recapture Creek	435	Oil	Ismay-Desert Crk	Active	1925	5	2,206,281	3,716,864	358,308
Recapture Pocket	437	Oil	Desert Creek	Active	1987	3	176,538	324,275	40,467
River Bank	440	Oil	Ismay	Abandoned	1967	0	1,396	8,774	376
Road Canyon	401	Oil	Desert Creek	Active	1988	1	23,363	41,971	8,126
Rockwell Flat	445	Oil	Ismay	Abandoned	1967	0	624,235	518,812	4,191,806
Runway	446	Oil	Desert Creek	Active	1990	3	852,406	2,950,738	31,511
Shumway Point	486	Gas	Ismay	Active	1987	1	239	69,353	14
Soda Spring	741	Oil	Desert Creek	Abandoned	1989	0	3,657	9,303	5,453
Squaw Canyon	460	Oil	Ismay-Desert Crk	Active	1980	2	342,977	888,253	21,468
Tin Cup Mesa	465	Oil	Ismay	Active	1982	10	2,461,650	3,634,276	8,679,678
Tohonadla	470	Oil	Ismay-Desert Crk	Active	1956	4	2,258,444	921,663	915,653
Tower	476	Oil	Desert Creek	Abandoned	1994	0	10,064	3,848	20,447
Turner Bluff	475	Oil	Ismay-Desert Crk	Active	1957	9	920,213	754,089	560,058
Ucolo	477	Gas	Honaker Trail	Abandoned	1981	0	78,621	1,081,490	4,169
Wild Stallion	478	Gas	Ismay-Desert Crk	Active	1989	1	1,479	376,692	107
Wildcat	1	Oil	—	—	—	—	351,521	6,275,905	—
Yellow Rock	485	Oil	Ismay	Abandoned	1964	0	18,205	11,258	194,509
Totals						**769**	**534,817,696**	**1,264,008,547**	**1,494,754,344**

*Partially located in the Moab Planning Area to the north

Source: Utah Division of Oil, Gas and Mining (UDOGM) 2004.

— no data.

Table 3.16. Summary of Status of All Wells Located within the Monticello PA, as of March 24, 2005

Well Status	Number of Wells
ACTIVE WELLS	
Producing oil wells	493
Producing gas wells	15
Shut-in oil wells	198
Shut-in gas wells	14
Temporarily abandoned oil wells	29
Temporarily abandoned gas wells	1
Active water injection wells	371
Active water disposal wells	11
Active water source wells	3
Active Wells (subtotal)	**1,135**
ABANDONED WELLS*	
Abandoned oil locations	475
Abandoned gas locations	5
Abandoned Wells (subtotal)	**480**
ALL OTHER WELLS	
Approved oil permits	3
Approved gas permits	0
Dry holes	1,034
Inactive water injection wells	35
Released oil wells**	415
Released gas wells**	8
Released water injection wells**	30
Released water disposal wells**	11
Released water source wells**	20
Unknown well types	96
All Other Wells (subtotal)	**1,652**
TOTAL	**3,267**

*Release pending completion of satisfactorily completed surface reclamation.

**Released: well plugged and abandoned and reclamation satisfactorily completed.

Source: BLM 2005c.

3.8.2.1.2 PAST AND PRESENT EXPLORATION, DEVELOPMENT, AND PRODUCTION

The production of oil and gas in the Monticello PA has primarily occurred in the eastern portion of the planning area. A large area of concentrated oil and gas fields occurs in the southeastern portion of the Monticello PA within the Blanding sub-basin region of the Paradox Basin. Operations also occur in the northeastern portion of the Monticello PA in the Lisbon Valley area of the Paradox Fold and Fault Belt. Although limited, some oil and gas production has occurred outside these two distinct areas at single well locations.

For purposes of analysis and reporting of the oil and gas resources in the Monticello PA, the planning area was divided into three exploration and development areas, so delineated based on distinct geologic descriptions, historic/current production activities, and the potential for ongoing and future oil and gas development (Map 48). These areas are the Paradox Fold and Fault Belt, the Blanding Basin area, and the Monument Upwarp area.

The Paradox Fold and Fault Belt, located in the northern part of the Monticello PA, encompasses only five oil and gas fields: Lisbon, which straddles the northern Monticello PA border; Lightning Draw; Lightning Draw SE; Paiute Knoll; and a wildcat. Production from the Devonian McCracken Sandstone Member of the Elbert Formation first occurred in the Lisbon field. Later testing in the Mississippian Leadville Limestone resulted in the discovery of a giant oil and gas accumulation, which has resulted in approximately 90% of the oil produced from the Leadville Limestone. Oil and gas accumulations, though no economic production, have also been recorded in the Paradox and Hermosa intervals in the Lisbon field. Both hydrogen sulfide (H_2S) and helium have also been produced from the McCracken and Leadville reservoirs in the Lisbon field (personal communication with E. Jones, BLM Moab Field Office, June 2004). Production of these commodities as a by-product of oil and gas production is expected to continue. The Lightning Draw field produced oil and gas from the Kane Creek fractured shales. One new gas well (the Federal 1-31) was recently completed in the Lightning Draw SE field, and one well is currently being worked over. Development plans include construction of a pipeline connecting these wells to the existing gathering line and the Lisbon gas processing facility.

Oil and gas were first discovered in the Blanding Basin area of the Monticello PA at Boundary Butte in 1948. Subsequent geophysical work on adjacent Navajo Indian land resulted in the 1956 discovery of the Greater Aneth field, which produces from the Desert Creek zone of the Paradox Formation, with some minor production from the Ismay zone. The Greater Aneth field is by far the most productive field in the Monticello PA (see Table 3.16). There are a host of other Ismay and Desert Creek reservoirs in the Blanding sub-basin, accessed by fields such as Bluff and Recapture Creek, which were discovered in the 1950s. Some of the larger producers from these reservoirs include Bug, Cave Canyon, Cherokee, Deadman-Ismay, Kachina, Ismay, Kiva, Mustang Flat, and Tin Cup Mesa fields (see Table 3.15).

Completion of producing wells in the Monument Upwarp area has been sparse compared with the Paradox and Blanding Basin areas. Despite over 150 exploratory wells drilled in this area, only two fields have been established. These two fields, the Mexican Hat field and the Lime Ridge field, are located in the south-central portion of the Monticello PA. The Lime Ridge field managed to develop a significant gas show from Mississippian Leadville Limestone. Other representative activities on the Monument Upwarp include tests at the Nokai Dome in the southwest portion of the Monticello PA; a well located in T40S, R12E that encountered oil and gas in the Triassic Shinarump Member of the Chinle Formation; a well that had a show of gas in

Pennsylvanian sediments (McDougall 2000a); and a 1992 exploratory well drilled in the west-central portion of the Monticello PA that had a significant show of oil and/or gas in the Ismay zone of the Paradox Formation (McDougall 2000b).

3.8.2.1.3 Occurrence and Development Potential and Reasonable Foreseeable Development (RFD)

Areas of high, moderate, and low potential for the occurrence of oil and gas have been identified for the plays of the Monticello PA (Map 14). The Buried Fault Black play (2101) and the Salt Anticline Flank play (2105) are rated as having a high (H) occurrence potential with a D level of certainty, as are the southeastern portion of the Porous Carbonate Buildup play (2102), and the northern part of the Fractured Interbed Play (2103). Areas rated with an H oil and gas occurrence potential and a C level of certainty are the northwestern portion of the Porous Carbonate Buildup play, on the Monument Upwarp, the western and southern portions of the Fractured Interbed Play, and the Permo-Triassic Unconformity play (2106). The area around the Abajo Mountains is rated with a low (L) occurrence potential for oil and gas with a C level of certainty; the Porous Carbonate Buildup play and the Fractured Interbed play both encroach into this area. The Late Proterozoic (Chuar-sourced) and Lower Paleozoic play (2403) is rated with an H occurrence potential but only a B level of certainty, since this play is only speculative.

The potential for future oil and gas exploration and development in the Monticello PA is based on the history and extent of development in the area, consultation with petroleum companies actively studying fields and plays in the Monticello PA, and discussions with state and federal agencies familiar with activities in the area (see separate oil and gas Reasonable Foreseeable Development document). Based on these factors, potential for oil and gas exploration and development in the Paradox Fold and Fault Belt and Blanding Basin areas of the Monticello PA is rated as high. Less activity is expected in western areas of the Monticello PA on the Monument Upwarp, and development potential there is rated as moderate. The potential for exploration and development around the Abajo Mountains, within national parks or monuments, within WSAs, or within other protected lands, is rated as low.

Existing surface disturbance for approximately 1,135 active wells, approximately 480 abandoned wells, and associated roads and pipelines is 15,504 acres, or an average of 9.6 acres per well. Future oil and gas drilling for the next 15 years is projected to be 5–21 wells per year on all lands in the planning area. Assuming an average of 13 wells per year, a total of 195 wells would be drilled within the planning area. Disturbance from these wells and associated infrastructure would equal approximately 1,872 additional acres. During this period, 27 dry wells, 20 newly abandoned wells, and all 480 existing abandoned wells should be successfully reclaimed, making 5,059 total acres of reclaimed surface area. Accordingly, the total cumulative surface disturbance for wells in the Monticello PA during the life of this plan is projected to be approximately 12,317 acres. Additionally, surface disturbance over the next 15 years for geophysical exploration (1,230 linear miles) amounts to about 2,236 acres. Reclamation of all these disturbed lands would be successful over the scope of 10 years (BLM 2005c).

3.8.2.2 Coal

Coal resources are allocated through a coal lease. Exploration can occur under license before a lease is issued. Prior to issuing coal leases, areas considered unsuitable for all or certain

stipulated methods of coal mining must be identified based on the unsuitability criteria found at 43 CFR §3461. These criteria are applied through the BLM's land use planning process.

3.8.2.2.1 Resource Overview

Coal resources are located in the San Juan coal field in the eastern part of the Monticello PA, in the Blanding Basin and Paradox Fold and Fault Belt areas. The coal in this field occurs in the Cretaceous Dakota Sandstone. The middle coal-bearing unit within the Dakota Sandstone, which is 45–122 feet thick and whose individual coal beds range from two to 15 feet thick (Gloyn et al. 1995), contains four coal horizons in the Sage Plain area. These coals typically have been of poor quality.

3.8.2.2.2 Past and Present Exploration, Development, and Production

Coal activity in the 530,000-acre San Juan coal field has been limited to four areas:

1. exposures of Dakota Sandstone along Recapture and Johnson Creeks in T35S, R22E and R23E, and T36S, R22E and R23E;
2. an area near Monticello where several openings had been reported;
3. prospect holes located in T34S, R26E, including the Crepo Mine and a bulldozed outcrop representing the best showing in the field; and
4. several pits opened in an area located along Piute Creek, including the Rasmussen mine located in T33S, R26E (BLM 1985).

Most production has been conducted for local consumption. Reported activities, including two small mines, primarily occurred prior to 1929, with insignificant production. All mines and prospects have been closed in this area since 1971 (BLM 1985). After drilling several exploration holes near Eastland, Utah in the late 1970s, Arjay Petroleum estimated that 77 million tons of coal may be recoverable by surface mining in their exploration area, but development is limited by poor coal quality and lack of rail transportation (Gloyn et al. 1995; Wilson and Livingston 1980).

3.8.2.2.3 Occurrence and Development Potential and Reasonable Foreseeable Development (RFD)

Old coal mines and drill hole data suggest a high (H) occurrence potential with a D level of certainty for coal in the Cretaceous Dakota Sandstone in a small portion of the San Juan coal field southeast of Monticello. Other areas of the San Juan coal field are rated as having an H occurrence potential, but with a C level of certainty. Due to the poor quality of the coal and the lack of historical activity, development potential is rated low (L).

3.8.2.3 Potash and Salt

The potash resource is allocated by a variety of instruments. These are the prospecting permit, the preference right lease, the application for exploration license, the competitive lease, and the fringe acreage lease/lease modification.

3.8.2.3.1 Resource Overview

Potash (potassium-bearing) deposits in the Monticello PA, comprising primarily salt, sylvite (potassium chloride, or KCl), and carnallite (hydrated potassium magnesium chloride, or $KMgCl_3$ - $6H_2O$), are hosted exclusively by the Pennsylvanian Paradox Formation in the Monticello PA. Known potash and salt deposits underlie a 2,800-square-mile area of the Paradox Basin's deeper northeastern half. Both sylvite and carnallite occur in varying proportions throughout most potash deposits, but sylvite is dominant in those horizons under economic consideration (Hite 1960; Dames and Moore 1978; Gloyn et al. 1995). Using a cutoff grade of 14 percent K_2O, Patterson (1989) estimates that known resources of K_2O potash contain 254 million tons, while inferred resources are estimated at 161 million tons.

Most of the interest in potash and salt deposits in the Paradox Basin has been concentrated in the fold and fault belt, where potash beds are relatively close to the surface. However, in some areas, extraction is a challenge because salt flow is extensive (up to 13,000 feet thick) and destroys the continuity of the potash deposits (Hite 1960). Although the only commercial deposits in the area are found in the Kane Creek area in the Moab Planning Area, north of the Monticello PA, other potentially valuable deposits are known to occur in the Monticello PA. These include the Lisbon Valley and Gibson Dome areas (Gloyn et al. 1995). In 1960, the USGS classified the Kane Creek and Lisbon Valley areas as Known Potash Leasing Areas (KPLAs)—areas where potentially valuable deposits of potash are known to exist. There also appears to be sufficient data available to define the Gibson Dome area as a KPLA (BLM 2005b).

3.8.2.3.2 Past and Present Exploration, Development, and Production

Potash deposits in the Paradox Basin were initially discovered during the exploration for oil and gas between 1924 and 1944. Based on these initial discoveries, further potash exploration concentrated in Kane Creek and Lisbon Valley and contributed to the classification of these areas as KPLAs in 1960 (Hite 1960). Portions of the Kane Creek and Lisbon Valley KPLAs occur within the northern part of the Monticello PA and extend into the Moab Planning Area. The Moab Salt Company's Kane Creek Mine, located in the portion of the Kane Creek KPLA in the Moab Planning Area, is the sole producer of potash and salt by-product in the region.

Some incidental exploration has occurred in the Gibson Dome area. Oil and gas drilling in this area has contributed data on its potash deposits. In addition, a borehole was drilled in the 1980s by the U.S. Department of Energy for the purpose of evaluating the salt structure in the Gibson Dome area as a potential repository for high-level nuclear waste. This borehole encountered potentially valuable potash-bearing zones (Woodward-Clyde Consultants 1982; Merrell 1979; Dames and Moore 1978).

3.8.2.3.3 Occurrence and Development Potential and Reasonable Foreseeable Development (RFD)

The two KPLAs in the Monticello PA and the Gibson Dome area are rated as having a high (H) occurrence potential with a D level of certainty for both potash and salt (Map 15). The other areas of known potash and salt deposits in the Paradox Basin are rated as H occurrence potential with C certainty for both commodities. The more expansive areas underlain by potash and salt also have a high (H) occurrence potential and are rated with a C certainty.

A combination of factors, including the high cost of extraction and easier-to-mine deposits outside the planning area, contributes to the low (L) development potential for both potash and salt within the Monticello PA.

3.8.2.4 TAR SANDS

The Monticello PA contains areas of tar sands resources. This resource has been, and currently is, available for lease under the Combined Hydrocarbon Leasing Act of 1981 and in accordance with the decisions in the existing BLM land use plans.

The major tar sand resources lie only in Utah within 11 designated Special Tar Sands Areas (STSAs) managed by the BLM Vernal, Price, Richfield, and Monticello field offices (Map 15). One of these STSAs lies within the Grand Staircase-Escalante National Monument where leasing is prohibited. The Monticello FO manages one of the remaining 10 STSAs.

When the Monticello Resource Management Plan Revision (revision) was initiated in 2003, there was no reasonable foreseeable development expectation for tar sands over the life of the plan. The mineral report identified this resource, but did not foresee any leasing or development due to prevailing and anticipated economic factors.

Since the start of this RMP revision, Congress enacted the Energy Policy Act of 2005. Section 369 of the Energy Policy Act requires the Secretary of Interior to "complete a programmatic environmental impact statement for a commercial leasing program for oil shale and tar sands resources on public lands, with an emphasis on the most geologically prospective lands within each of the States of Colorado, Utah, and Wyoming." On December 13, 2005, the BLM published a Notice of Intent in the Federal Register initiating a Programmatic Environmental Impact Statement (PEIS) to support a commercial oil shale and tar sands leasing program on federal lands in these three states.

In light of this statutory requirement, all decisions related to tar sands leasing in this Resource Management Plan are being deferred to the ongoing PEIS on Oil Shale and Tar Sands Leasing. The Record of Decision on the final PEIS will amend the existing Monticello RMP by changing allocation decisions on whether or not to allow leasing and future development of tar sands on public lands for those areas where the resource is present. These decisions will be incorporated into the Monticello RMP as it is finalized or will amend the Monticello RMP. Combined hydrocarbon and tar sand leasing in the STSAs will also be deferred to the PEIS. Additional opportunities for public involvement and comment will occur when the PEIS becomes available in draft form. Site specific requirements will be addressed in future NEPA analysis for specific project applications after the PEIS is completed.

This Resource Management Plan will, however, develop allocation decisions for conventional oil and gas leasing in the STSAs.

3.8.2.4.1 RESOURCE OVERVIEW

Since 1981, tar sands have been allocated by competitive leasing. In Special Tar Sand Areas (STSAs), tar sands are leased by competitive bonus bidding for combined hydrocarbon leases (CHLs). Outside STSAs, tar sands are allocated by conventional oil and gas leases.

Tar sand in the Monticello PA has been identified in the White Canyon Designated Tar Sand Area (DTSA, established on January 21, 1981 [46 *Federal Register* 6077]), which extends over

10,000 acres in the western portion of the White Canyon Slope area and into the Monument Upwarp area, in the western portion of the Monticello PA). The Hoskinnini Member of the Triassic Moenkopi Formation, which hosts the deposit, is exposed in Long, Short, and Fort Knocker Canyons. The deposit is estimated to contain 12 to 15 million barrels of oil in place (McDougall 2000b). From the research done to-date, it appears that the tar sands in the White Canyon DTSA are low-grade and fractured. A second deposit of tar sands in the Monticello PA occurs in the walls of the San Juan River canyon near the Mexican Hat field (BLM 2005b). This deposit, minor compared to the White Canyon area, is found in the Pennsylvanian Honaker Trail Formation. Ritzma (1979) estimated the contained oil to be 0.4 to 0.5 million barrels.

3.8.2.4.2 Past and Present Exploration, Development, and Production

There has been no exploration or production activity regarding the tar sand deposits located in the White Canyon DTSA (BLM 2005h). Ritzma and Doelling (1969) stated that the Hoskinnini Member in the White Canyon tar sand deposit is "lightly" saturated with oil and that a reconnaissance assessment of the deposit indicates that it is not of commercial significance. Furthermore, the stratigraphy may prevent both in situ thermal recovery of oil and surface mining methods. Compared with the oil and gas resources throughout the Monticello PA that can be extracted with modern drilling and pumping methods, tar sand extraction requires higher-cost mining techniques such as open pits and associated earth-moving and reclamation activities.

3.8.2.4.3 Occurrence and Development Potential and Reasonable Foreseeable Development (RFD)

The White Canyon DTSA, along with smaller tar sand deposits near Mexican Hat, are rated as having a high (H) occurrence potential with a D level of certainty. Considering the dearth of leases in the White Canyon DTSA, the lack of interest shown by developers, and the high cost associated with extraction in the Monticello PA, tar sand development potential in the Monticello PA is considered low (L).

3.8.3 Locatable Minerals

Locatable minerals are subject to disposal by mining claim location under the authority of the Mining Law of 1872. Locatable minerals comprise the base and precious metal ores, ferrous metal ores, and certain classes of industrial minerals. These minerals are allocated via claim staking or location, at the initiative of the public. Operations under the 43 CFR 3809 regulations may take place on public lands that are open to mineral entry without a claim. Surface-disturbing activities (beyond casual use) to explore or develop are not allowed under a claim alone and require a Notice of Intent (NOI) or Mining Plan of Operations (MPO). All public lands within the Monticello PA are open to mineral location unless specifically closed by withdrawal.

3.8.3.1 Uranium-Vanadium

3.8.3.1.1 Resource Overview

Sediment-hosted uranium in the Monticello PA occurs in quantities that are commercially extractable. It is usually found intimately associated with vanadium and sometimes copper. The most prolific hosts of the uranium-vanadium mineralization include Mesozoic sequences such as the Moss Back and basal Shinarump Conglomerate Members of the Triassic Chinle Formation,

as well as the Salt Wash Member of the Jurassic Morrison Formation, which tends to host deposits that have larger reserves and higher grades and are more closely clustered than those occurring in other formations (Chenoweth 1981; Johnson and Thordarson 1959). Small uranium-vanadium deposits are also found in the late Paleozoic Permian Cutler Group (a result of an unconformity with the Chinle Formation), particularly the Cedar Mesa Formation, as evidenced by historic mining production in the northern part of the Monticello PA (Gloyn et al. 1995).

3.8.3.1.2 Past and Present Exploration, Development, and Production

Although uranium deposits in the Monticello PA had been mined for over 90 years, first for their radium content and then for their vanadium co-product, it was the "Uranium Boom" beginning in the late 1940s that initiated large-scale extraction (Chenoweth 1996). However, a national and international trend of declining uranium and vanadium demand and prices began in the 1980s (Chenoweth 1996; BLM 2005h). The last mines and mills in the Monticello PA closed in 1990.

In the Monticello PA, the greatest amount of production has occurred from the Salt Wash Member of the Jurassic Morrison Formation and the Moss Back and Shinarump Conglomerate Members of the Triassic Chinle Formation. The least amount of production has occurred from the Permian Cutler Group. Mines developed in the Chinle Formation produced 92 percent of the ore between the early 1950s and the mid 1960s. However, by the mid 1970s, production from the Morrison Formation overtook and slightly exceeded that of the Chinle ($600 million vs. $500 million, respectively). Regionally, remaining recoverable reserves of uranium-vanadium are estimated at 4.2 million tons of ore in the Four Corners Region. Approximately 57 percent of these reserves are hosted in the Morrison Formation, 39 percent in the Chinle Formation, and 4 percent in the Cutler Group (Johnson and Thordarson 1959; Gloyn et al. 1995). Table 3.17 lists the mining areas in the Monticello PA and the uranium host deposits for each. Table 3.18 provides a summary of historical mining production in the Monticello PA.

Below are the more notable uranium-vanadium mining operations within the Monticello PA:

- The Cottonwood Wash mining area is centered at the junction of Cottonwood and Brushy Basin Washes, just west of Blanding, Utah. Some 55 properties produced over 350,000 tons of ore between 1931 and the 1980s (see Tables 3.18 and 3.19; Gloyn et al. 1995). There are currently no mining permits filed with UDOGM for this area.
- The Montezuma Canyon mining area includes deposits on the sides of Montezuma Canyon and its tributaries, east of Blanding, Utah. Sixty-eight properties produced about 109,000 tons of ore between the late 1940s and the mid 1980s (see Tables 3.18 and 3.19; Gloyn et al. 1995). Currently, only one mine in the Montezuma Canyon area, the Dusty Mine, has a permit registered with UDOGM; however, it is listed as inactive.
- Only the southeastern portion of the Lisbon Valley mining area is located in the Monticello PA; the rest of it is in the Moab Planning Area. Some of the largest, high-grade uranium-vanadium ore bodies have been mined in this area (see Tables 3.18 and 3.19). Only one mine in the Monticello PA portion of the Lisbon Valley area has a permit registered with UDOGM; it is also listed as inactive.

Table 3.17. Historical Locations and Hosts of Uranium-Vanadium Deposits in the Monticello PA, by Mining District

Mining Area	Salt Wash Member/ Morrison Formation	Moss Back Member/ Chinle Formation	Shinarump Member/ Chinle Formation	Cedar Mesa Formation/ Permian Cutler Group
Lisbon Valley Area*		Major		Minor
Combined White Canyon Area (Red Canyon, White Canyon/Fry Canyon, Deer Flat, Elk Ridge, and southern Indian Creek Areas)			X	
Inter-river, Lower Kane Creek, Indian Creek Areas*		Major		Minor
Dry Valley Area	X			
Cottonwood Wash Area	X			
Oljeto Mesa Area (Monument Valley)			X	
Montezuma Canyon Area	X			
Bluff-Butler Wash Area	—	—	—	—
Abajo Area	—	—	—	—
Ucolo Area	X			

Note: Xs indicate that the data say that this host occurs in the mining area. The words "major" and "minor" are used when hosts within a mining area are compared to each other.
Sources: Johnson and Thordarson 1959; Merrell 1979; Chenoweth 1996; Sprinkel 1999; Gloyn et al. 1995; Gloyn 2004.
*Is also located in the Moab Planning Area to the north.
— No data.

Table 3.18. Historical Uranium-Vanadium Production in the Monticello PA

Mining Area	Average Ore Grade		Production (lb)		Estimated Reserves (lb U_3O_8)	Develop. Potential
	% U_3O_8	% V_2O_5	U_3O_8	V_2O_5		
Lisbon Valley Area*	0.30 - 0.37	0.34 - 0.40	79,560,000	534,000	3,500,000	High
Combined White Canyon Area	0.25 - 0.30	0.04	11,069,000	216,000	2,000,000+	High to Moderate
Inter-river, Lower Kane Creek, Indian Creek Areas*	0.20 - 0.22	1.50 - 2.00	3,276,000	195,000	unknown	Moderate
Dry Valley Area	0.20	1.00 - 1.70	1,525,000	12,662,000	1,000,000	High
Cottonwood Wash Area	0.15 - 0.20	0.96 - 1.70	896,000	5,664,000	300,000	High
Oljeto Mesa Area (Monument Valley)	0.25 - 0.30	0.65	323,000	533,000	unknown	Moderate
Montezuma Canyon Area	0.16	0.60	88,000	775,000	unknown	High
Bluff-Butler Wash Area	unknown	unknown	53,000	--	unknown	Moderate
Abajo Area	unknown	unknown	7,000	1,000	unknown	Moderate
Ucolo Area	0.15	1.50 - 2.00	unknown	unknown	3,000,000	High

*Includes production from the Moab Planning Area to the north.
Source: Gloyn et al. 1995; Chenoweth 1996; Gloyn 2004.

- The White Canyon mining area is located in the northwestern part of the Monticello PA (Gloyn 2004). In addition to uranium and vanadium, ore from the White Canyon area contains from 0.3 to 1.3 percent copper (Chenoweth 1990, 1993). The Cu:U_3O_8 ratio is as high as 13:1, and copper grades range up to 1 to 2 percent (Johnson and Thordarson 1959). The Red Canyon section of this area contains an estimated two million pounds of U_3O_8, while reserves for other areas are unknown (see Tables 3.17 and 3.18; Gloyn 2004). One mine in the White Canyon area has a registered permit with UDOGM; it is classified as being in its final stages of reclamation.

3.8.3.1.3 Occurrence and Development Potential and Reasonable Foreseeable Development (RFD)

The designated mining areas (Gloyn 2004) within the Monticello PA are rated as having high (H) occurrence potential with a D certainty level (Map 17). Outside these known mining areas, the areal extent of the Jurassic Morrison and Triassic Chinle Formations has been classified as having a moderate (M) occurrence potential with C level of certainty. Where mineralization in the Cutler has occurred in Lisbon Valley mining area, uranium and vanadium has a moderate (M) occurrence potential; otherwise, mineralization in the Cutler is not expected.

Uranium prices have recently reached the level that could encourage some new production from existing reserves in the Monticello PA, and vanadium prices have also recently increased significantly, to the point that vanadium could be a highly desirable co-product or even the primary metal, especially considering the relatively high ratio of vanadium to uranium in most of the Salt Wash deposits in the area (BLM 2005b). Development potential is, therefore, rated H for the Red Canyon, Deer Flat, Cottonwood Wash, Montezuma Canyon, Lisbon Valley, Dry Valley, and Ucolo mining areas, where known reserves are significant and infrastructure is in place. Development potential is rated M for the White Canyon-Fry Canyon, Oljeto Mesa (Monument Valley), Bluff-Butler Wash, Elk Ridge, Abajo, Indian Creek, Lower Kane Creek, and Inter-river areas. Development potential is rated L for host formations outside designated mining areas.

3.8.3.2 Copper

3.8.3.2.1 Resource Overview

For convenience, copper deposits are divided into two types in this section: vein-type and redbed-hosted. Vein-type deposits are generally fault zone-hosted veins and strata-bound, mineralized layers. As their name suggests, redbed copper deposits form in red host rocks, which get their color (essentially rust) from the oxidation of the rock's exposure to the atmosphere. Redbed mineralization can be either volcanic or sedimentary. Sedimentary-hosted deposits, which form in fluvial (river) environments, are the type found in the Monticello PA. Sedimentary redbed deposits are relatively small in comparison to the volcanic redbed deposits and vein-type deposits, and few are ever brought into production.

Blanket-like deposits of copper mineralization are hosted by late Paleozoic to Mesozoic redbed sequences throughout the Southwest (Hahn and Thorson 2002). In the Monticello PA, copper mineralization has been observed primarily in the Triassic Chinle and Moenkopi Formations (McFaul 2000). These observed copper occurrences have been associated with uranium deposits in several areas, including the White Canyon, Oljeto Mesa (Monument Valley), and Indian Creek mining areas. In the Indian Creek area, the Permian Cutler Group contains deposits representing

a transition zone between fluvial rocks to the east and marine rocks to the west. Small uranium-copper deposits are found in this transition of the Cutler Formation, as well as in the overlying Moenkopi Formation.

3.8.3.2.2 Past and Present Exploration, Development, and Production

Copper production in the Monticello PA has often been associated with uranium mining. The White Canyon, Red Canyon, Deer Flat, and Elk Ridge mining areas were the location of redbed, disseminated copper production in the late 1940s and early 1950s. At their local mill, primarily in 1953, the Vanadium Corporation of America attempted to recover copper from uranium-vanadium ore, without success (Chenoweth 1993). Since the 1960s, several other companies have evaluated low-grade, disseminated copper deposits in the Monticello PA and adjacent areas, but attempts at production of these deposits, even in association with uranium and/or during times of favorable copper prices, have been unsuccessful or uneconomical (Hahn and Thorson 2002). Other areas for copper occurrence in the Monticello PA are in the Oljeto Mesa (Monument Valley) and Indian Creek mining areas. Both areas contain limited prospects, and no mining has developed.

3.8.3.2.3 Occurrence and Development Potential and Reasonable Foreseeable Development (RFD)

Based on available information, there is a high (H) occurrence potential with a D level of certainty for redbed-type copper deposits in the Triassic Chinle Formation in the White Canyon, Oljeto Mesa (Monument Valley), and Indian Creek uranium mining areas. Occurrences in the Moenkopi Formation are isolated, limited to just a few uranium mines in the White Canyon area. Therefore, the Moenkopi in this area is rated as having a moderate (M) occurrence potential with C certainty, while other exposures of Moenkopi are rated as having a low (L) occurrence potential and C certainty.

Throughout the Monticello PA, copper deposits are low-grade and sparse. Even with the increase in prices, copper development potential throughout the planning area is rated as being L.

3.8.3.3 Placer Gold

3.8.3.3.1 Resource Overview

Placer gold in the Monticello PA has been documented to occur sporadically along the Colorado and San Juan rivers and their respective tributaries. Along the Colorado River, it occurs in alluvial bars and has been found in terraces as much as 200 feet above the present river. The gold occurs primarily in the present-day river gravels and in older, higher level terrace gravels (Ritzma and Doelling 1969). Placer gold deposits in San Juan River gravels are known to extend from the mouth of Montezuma Creek to the confluence of the Colorado River (Johnson 1973). In addition to the Colorado and San Juan rivers, placers have also been located in the Abajo Mountains along Johnson Creek and Recapture Creek (Johnson 1973; UGS 2003).

Historical placer operations in the Monticello PA were small-scale, so most of the gold production was not reported. Due to the fine, flaky mode of the gold and the difficulty in recovering it, most operations have not been commercially successful (Butler et al. 1920; UGMS

1966; Johnson 1973; Chatman 1987). The gold grades of historical placer operations range from 0.03 to 0.05 ounces per cubic yard (Gloyn et al. 1995).

3.8.3.3.2 Past and Present Exploration, Development, and Production

Only small, sporadic extraction activities have taken place in the Monticello PA since the late 1980s, and currently, there is little production of placer gold in the Monticello PA One small, active placer operation is located below the dam on Recapture Creek near Blanding. The BLM also recently accepted a proposal to conduct gold exploration using backhoe trenching on a small site in Johnson Creek (T. McDougall, BLM, 2004). Small-scale operations like these typically have a surface disturbance of five to 10 acres.

3.8.3.3.3 Occurrence and Development Potential and Reasonable Foreseeable Development (RFD)

The known placer gold sites have a high (H) occurrence potential with a D certainty level, given that gold has been produced at these locations. Alluvial deposits along the San Juan River, from the mouth of Montezuma Creek to Lake Powell, are considered to have an H occurrence potential with a C certainty level, as are deposits along Johnson and Recapture Creeks in the Abajo Mountains north of Blanding. Because of the ongoing operation and the recent proposal on Recapture and Johnson Creeks, respectively, these areas are rated as having an H development potential. All other areas are assigned a moderate (M) to low (L) development potential.

3.8.3.4 Limestone

3.8.3.4.1 Resource Overview

Desirable limestone deposits in the Monticello PA are primarily hosted in the Pennsylvanian Honaker Trail Formation, but also are in the Jurassic Navajo Sandstone (Gloyn et al. 1995). The marine limestones in the Honaker Trail Formation have been shown to contain small amounts of relatively high-quality limestone in San Juan County (Gloyn et al. 1995). Four lenses, or beds, of the Honaker Trail Formation, each one to three feet thick, are observed in the San Juan River canyon west of Mexican Hat (Ritzma and Doelling 1969). A seven to 10-foot-thick bed containing 97 percent calcium carbonate (CaCO3) has also been reported at a 200- to 300-acre site located on Lime Ridge and northeast of Mexican Hat. Additionally, studies from a site on the Navajo Indian Reservation in the southern portion of the Monticello PA show that limestone in Honaker Trail Formation may be utilized for producing high-quality burned lime, cement rock, and rock dust (Ritzma and Doelling 1969). Outcrops of the Honaker Trail Formation also occur in the northwest portion of the Monticello PA along the Colorado River and its tributaries. Lacustrine limestones in the Jurassic Navajo Sandstone in the Monticello PA contain some beds of high-calcium, blue-gray, cherty limestone that locally cap small mesas (Gloyn et al. 1995).

3.8.3.4.2 Past and Present Exploration, Development, and Production

Current limestone operations in the Monticello PA are primarily on Lime Ridge. The Holliday Construction Lime Ridge quarry is an active operation located on state lands northeast of Mexican Hat. Production from 1998 through 2003 at this site has been reported at approximately 29,000 tons (UDOGM, verbal communication 2004). The Moon No. 4 quarry, also permitted on

state lands near Mexican Hat, is now inactive. It was operated by Western Industrial Minerals. An area considered likely for development is the 200- to 300-acre, seven to 10-foot-thick site occurring on 60 claims and located 13 miles northeast of Mexican Hat on Lime Ridge. The deposit is amenable to simple quarrying techniques (Gloyn et al. 1995).

Exploration and proposed development of chemical-quality limestone has occurred in the Monticello PA in the past:

- Dames & Moore, Inc., under a contract to the Arizona Public Service Company, conducted substantial exploration on two claims for high-calcium limestone in the mid to late 1970s. These efforts resulted in the identification of the massive, 200- to 300-acre bed of limestone in the Honaker Trail Formation (see above). Development of the deposit was to be used at power plants in New Mexico and Arizona.
- In 1986, the Environmental Lime Corporation submitted a proposal to the BLM regarding a project located northeast of Mexican Hat to produce 1,100 tons per day of high-calcium limestone. No work was ever carried out on this project.
- In 1994, the Navajo Nation drilled core samples on claims located in T41S, R20E, to ascertain whether high-calcium limestone was present and if it could be used for proposed sulfur dioxide scrubbers/absorbers at a power plant in Page, Arizona.

3.8.3.4.3 Occurrence and Development Potential and Reasonable Foreseeable Development (RFD)

The identified limestone sites in the Monticello PA have been characterized as having high (H) potential for the occurrence with a D certainty level. Elsewhere in the Monticello PA, the Honaker Trail Formation is characterized as having H potential with C certainty for the occurrence of limestone. Limestone development potential on Lime Ridge is rated as H, not only because of past production in that locale, but because of the significant interest in limestone in southeastern Utah. Development of the formation in the northwest portion of the Monticello PA, along the Colorado River and its tributaries is considered unlikely.

3.8.4 Salable Minerals

Salable mineral materials are subject to disposal by sales contract or free use permit under the authority of the Materials Act of 1947. Salable mineral materials are generally common varieties of construction materials and aggregates. Salable mineral material disposal can be exclusive or non-exclusive. Under exclusive disposals, the applicant has sole rights to the material applied for and sole responsibility for the development and reclamation of the source site. Exclusive sites include negotiated sales sites, competitive sales sites, free use permits, and material sites under the Federal Highway Act. Non-exclusive disposals are made from sites to which the general public has access, such as community pits and common use areas (see Appendix K). Detailed descriptions of the salable mineral materials in the Monticello PA and their locations, disposal, and production are provided in the Mineral Potential Report (BLM 2005b).

3.8.4.1 Sand and Gravel

3.8.4.1.1 Resource Overview

Sand and gravel development is largely driven by the need to find suitable material for public works projects, including local and state road projects and community development. Sand and gravel are the rock products that have the greatest demand in the Monticello PA, and the operations are widely dispersed across the planning area to facilitate distribution of the materials and keep the costs to consumers low. They are commonly found near population centers and aligned along roadways. Sand and gravel deposits are mostly associated with unconsolidated Quaternary sediments. Important sand and gravel deposits occur along the San Juan River (where it is high-quality), surrounding the Abajo Mountains (where the material is softer and not as suitable for concrete aggregate), and near the town of Blanding.

3.8.4.1.2 Past and Present Exploration, Development, and Production

A review of LR 2000 records indicates that since 1989, there have been 57 authorizations made by the BLM for mining of sand and gravel in the Monticello PA, for a cumulative total of 1.9 million cubic yards (BLM 2005h). Production has primarily occurred in the eastern and southern portion of the Monticello PA, from alluvial deposits located along the San Juan River, and from sediments (i.e., erosional surfaces of low relief that slope away from the base of mountains) in the vicinities of Blanding and Monticello. Due to transportation costs, most production has occurred in close proximity to road infrastructure, communities, and specific points of use. The main producers are the Utah Department of Transportation and the County Highway Department. Surface disturbance is typically two to 10 acres for each authorization.

3.8.4.1.3 Occurrence and Development Potential and Reasonable Foreseeable Development (RFD)

All of the known alluvial deposits, such as those along the San Juan River, are rated as having high (H) sand and gravel occurrence potential and with a D level of certainty. Deposits located within three miles of a road are rated as having an H development potential, whereas deposits located further from roads have a moderate (M) development potential (Map 16).

3.8.4.2 Building Stone

3.8.4.2.1 Resource Overview

Within the Monticello PA, sandstone appropriate for use as a high-quality building stone is present in the Triassic Moenkopi and Chinle Formations, the Jurassic Kayenta and Morrison Formations, and the Cretaceous Dakota Sandstone and Cedar Mountain Formation (Atwood and Doelling 1982). Sandstones in the Triassic Chinle Formation and the Jurassic Navajo Sandstone are also suitable for commercial crushing operations (Ritzma and Doelling 1969). The granites of the Abajo and La Sal Mountains may also have building stone potential (Gloyn et al. 1995).

3.8.4.2.2 Past and Present Exploration, Development, and Production

Building stone production in the Monticello PA has primarily occurred from the Cretaceous Dakota Sandstone at quarries located southeast of Blanding (UDOGM, verbal communication 2004). Production has also occurred from operations in the Jurassic Kayenta and Triassic

Moenkopi and Chinle Formations. Since 1989, there have been seven authorizations made by the BLM for mining building stone, which have yielded a cumulative total of approximately 130 tons (BLM 2005h). Most of the production in the Monticello PA has occurred on unpatented mining claims, six of which are recorded with the BLM, so no production figures are available. Total surface disturbance for an operation is typically five to 10 acres.

3.8.4.2.3 Occurrence and Development Potential and Reasonable Foreseeable Development (RFD)

Known sites of building stone production in the Monticello PA are rated as having a high (H) potential for occurrence with a D level of certainty. Elsewhere, the formations are classified as having a moderate (M) occurrence potential and a C level of certainty. Development potential, particularly in the general areas where there has been previous production, and considering the continued demand for building stone in the growing communities of the West, is rated as H.

3.8.4.3 Clay

3.8.4.3.1 Resource Overview

Bentonite and bentonitic clays—among the most commercially desirable clays—swell when saturated with water and can be used as a natural sealant for reservoirs, stock ponds, ditches, and landfill linings. Several geologic units in the Monticello PA have potential for bentonite production: the Triassic Petrified Forest and Monitor Butte Members of the Chinle Formation (where it is ubiquitous throughout the Monticello PA), the Cretaceous Brushy Basin and Westwater Canyon Members of the Morrison Formation, and the Cretaceous Mancos Shale (Gloyn et al. 1995). Triassic bentonite deposits can be found southeast of Mexican Hat, as well as near Monument Valley, Clay Hills and Comb Ridge (Gloyn et al. 1995). The thickness and purity of the bentonite is quite variable, but very pure deposits have nonetheless been located. Samples taken from the upper portion of the Brushy Basin Member of the Jurassic Morrison Formation in the Lisbon Valley north of the Monticello PA have a measured bentonite content exceeding 90 percent (Gloyn et al. 1995). Samples taken from the undifferentiated Brushy Basin at Montezuma Creek also averaged more than 90 percent bentonite.

3.8.4.3.2 Past and Present Exploration, Development, and Production

Small-scale mining of bentonite for local engineering purposes has occurred in the Monticello PA. In 1977, the Butterfield mine southeast of Montezuma Creek is known to have produced about 5,000 cubic yards of bentonitic clays from the Brushy Basin Member of the Jurassic Morrison Formation (Gloyn et al. 1995). Two other mine sites located in the southwest portion of the Monticello PA have produced bentonitic clay from the Triassic Chinle Formation. Since 1989, the LR 2000 records indicate that six BLM authorizations for exploration and production have been issued and have yielded 550,000 cubic yards of clay (BLM 2005h), or less than one authorization and approximately 92,000 cubic yards every two and a half years over the past 15 years. Surface disturbance for each authorization is typically one to 5 acres.

3.8.4.3.3 Occurrence and Development Potential and Reasonable Foreseeable Development (RFD)

Given available information, known bentonite clay sites in the Monticello PA have been classified as having a high (H) potential for occurrence with D certainty level. Elsewhere the favorable formations are rated as having a moderate (M) occurrence potential with C certainty. Based on past use, it is likely that there will be continued development (or H development potential) in the Monticello PA of bentonite clay resources for engineering applications, particularly around areas where there has been previous production.

3.9 Non-WSA Lands with Wilderness Characteristics

3.9.1 Background and History

Since wilderness study areas (WSAs) were established in the 1980s, wilderness in Utah has become a prominent national issue. For more than 20 years, the public has debated which lands have wilderness characteristics and should be considered by Congress for wilderness designation. As a result of the debate (and a significant passage of time since BLM's original inventories), in 1996 the Secretary of the Interior directed BLM to take another look at some of the lands in question. In response to the direction of the Secretary, BLM inventoried these lands and approximately 2.6 million acres of public land statewide (outside of existing WSAs) were found to have wilderness characteristics (BLM 1999b). Although the Glossary defines "wilderness characteristics" in detail, for purposes of inventory maintenance for this plan revision, BLM focused on the following criteria: 1) the appearance of naturalness, 2) outstanding opportunities for solitude or primitive or unconfined recreation, and 3) an area with a minimum of 5000 acres in size (with some exceptions) so as to make practicable the management of wilderness characteristics (see also Glossary).

In September 2005, the BLM and the State of Utah, the Utah School and Institutional Trust Land Administration (SITLA), and the Utah Association of Counties (collectively "Utah") reached an agreement negotiated to settle a lawsuit originally brought in 1996 by Utah, challenging the BLM's authority to conduct new wilderness inventories. The settlement stipulated that the BLM's authority to designate new WSAs expired no later than October 21, 1993. The BLM, however, does have the authority to manage for characteristics associated with the concept of wilderness through the land-use planning process. The BLM's Land Use Planning Handbook (BLM 2005a) states that decisions on whether or not to protect wilderness characteristics are to be considered during planning. Refer to *Wilderness Characteristics* in the glossary.

3.9.2 Planning Area Profile

There are 29 areas in the Monticello PA, outside of existing WSAs that the BLM determined to have the wilderness characteristics of size, naturalness, and outstanding opportunities for solitude or primitive recreation. BLM found in the 1999 Inventory that there were approximately 485,525 acres within the Monticello PA that had wilderness characteristics.

In addition to the 485,525 acres found to have wilderness characteristics in the 1999 Utah Wilderness Inventory, additional lands in the Monticello PA have been reviewed for wilderness characteristics by BLM. These are lands currently proposed for wilderness as part of S.1170, America's Red Rock Wilderness Act of 2007, and are neither WSAs nor a part of the 1999 Utah

Wilderness Inventory (Note: The Act has been introduced in this year's Congress as S.1170.) The process used by the BLM to determine the non-WSA acreage with wilderness characteristics consisted of several steps. BLM used a combination of field visits, data layers including roads, vegetative treatments, (especially chaining), range improvements, and rights-of-way, aerial photography interpretation, and interdisciplinary review to reach a conclusion on those acreages that have wilderness characteristics. This process resulted in a determination that an additional 96,832 acres have the wilderness characteristics of size, naturalness, and outstanding opportunities for solitude or primitive recreation.

The processes described above resulted in 29 areas of non-WSA lands with wilderness characteristics totaling 582,360 acres (Table 3.19). These non-WSA lands with wilderness characteristics have been carried through this land use planning process to determine how their wilderness characteristics will be managed. Many of the inventoried lands were found to lack wilderness characteristics; these are discussed in staff reports available in the Monticello FO.

Table 3.19. Summary of Lands Evaluated for Wilderness Characteristics

Name of Lands	Total Acreage Evaluated	Non–WSA Lands with Wilderness Characteristics (Acres)	Non–WSA Lands without Wilderness Characteristics (Acres)	Adjacent Lands with Wilderness Characteristics
Allen Canyon	6,410	0	6,410	NA
Arch Canyon	13,600	50	24,700	Contiguous to Mule Canyon WSA
Bridger Jack Mesa	27,170	23,050	4,120	Contiguous to Bridger Jack Mesa WSA and to lands administratively endorsed for wilderness in Canyonlands National Park
Butler Wash	3,040	1,660	1,380	Contiguous to Butler Wash and South Needles WSA and to lands administratively endorsed for wilderness in Canyonlands National Park
Cheesebox Canyon	16,080	13,240	2,840	Contiguous to Cheesebox Canyon WSA and lands administratively endorsed for wilderness in Natural Bridges National Monument
Copper Point	4,420	0	4,420	NA
Comb Ridge	16,400	13,760	2,637	
Cross Canyon	2,100	1,350	745	Contiguous to Cross Canyon WSA

Table 3.19. Summary of Lands Evaluated for Wilderness Characteristics

Name of Lands	Total Acreage Evaluated	Non–WSA Lands with Wilderness Characteristics (Acres)	Non–WSA Lands without Wilderness Characteristics (Acres)	Adjacent Lands with Wilderness Characteristics
Dark Canyon	67,850	66,330	1,520	Contiguous to Dark Canyon WSA and to the Forest Service's Dark-Woodenshoe Canyon Wilderness and lands administratively endorsed for wilderness in Canyonlands National Park and Glen Canyon National Recreation Area
Fish and Owl Creeks	28,740	24,650	2,090	Contiguous to Fish Creek Canyon WSA
Fort Knocker Canyon	12,800	12,410	390	
Gooseneck	3,840	3,570	270	Non-WSA lands with wilderness characteristics shared with the Moab Field Office. Only those acreages in the Monticello Field Office are shown. Also contiguous to lands administratively endorsed for wilderness in Canyonlands National Park
Grand Gulch	58,010	55,240	2,770	Contiguous with Grand Gulch ISA Complex and lands administratively endorsed for wilderness in Glen Canyon National Recreation Area
Gravel and Long Canyons	37,100	36,890	167	
Hammond Canyon	4,700	4,700	0	
Harmony Flat	10,200	9,660	540	Contiguous with lands administratively endorsed for wilderness in Natural Bridges National Monument
Harts Point	57,796	24,740	31,582	Non-WSA lands with wilderness characteristics shared with the Moab Field Office. Only those acreages in the Monticello FO are shown.
Hatch/Lockhart	23,320	1,760	21,560	Non-WSA lands with wilderness characteristics shared with the Moab Field Office. Only those acreages in the Monticello FO are shown.

Table 3.19. Summary of Lands Evaluated for Wilderness Characteristics

Name of Lands	Total Acreage Evaluated	Non–WSA Lands with Wilderness Characteristics (Acres)	Non–WSA Lands without Wilderness Characteristics (Acres)	Adjacent Lands with Wilderness Characteristics
Indian Creek	25,230	23,280	1,950	Contiguous to Indian Creek WSA and to lands administratively endorsed for wilderness in Canyonlands National Park
Lime Creek	5,560	5,560	0	Contiguous to Road Canyon WSA
Mancos Mesa	73,900	61,570	11,710	Contiguous with Mancos Mesa WSA
Monument Canyon	18,180	0	18,180	NA
Nokai Dome	94,330	94,270	60	Contiguous with lands administratively endorsed for wilderness in Glen Canyon National Recreation Area
Red Rock Plateau	62,150	17,010	45,140	
Road Canyon	13,900	11,320	2,580	Contiguous to Road Canyon WSA
San Juan River	15,100	14,340	400	
Shay Mountain	15,020	6,710	8,310	
Sheep Canyon	4,700	4,000	702	Contiguous to lands administratively endorsed for wilderness in Glen Canyon National Recreation Area
Squaw & Papoose Canyon	3,750	3,570	182	Contiguous to Squaw and Papoose Canyon WSA
The Needle	10,740	0	10,740	NA
The Tabernacle	7,440	0	7,440	NA
Tin Cup Mesa	15,900	0	15,900	NA
Upper Red Canyon	25,080	24,920	160	
Valley of the Gods	14,560	13,670	890	
White Canyon	12,980	9,080	3,900	Contiguous to Dark Canyon WSA/ISA Complex
Totals	**805,686**	**582,360**	**236,385**	

[1] The names of these lands are conglomerates of many parcels and may not track to the names given by other groups or public

[2] These are GIS numbers and may not exactly track to previously published numbers

Non-WSA lands with wilderness characteristics analyzed in this document include about 582,360 acres of BLM-administered public land within the Monticello PA. Additional information concerning these lands is contained in Appendix O. Detailed information about non-WSA lands with wilderness characteristics is part of the administrative record at the Monticello Field Office and includes: 1)1999 Utah Wilderness Inventory; 2) 1999 Utah Wilderness Inventory Revision Document for the Monticello Field Office; 3) 1999 Utah Wilderness Inventory Case Files for the Monticello Field Office; 4) Reasonable Probability Determinations for the Monticello Field Office; and 5) Documentation of Wilderness Characteristics Review for the Monticello Field Office.

3.10 PALEONTOLOGICAL RESOURCES

3.10.1 RESOURCE OVERVIEW

Paleontology is a biological and geological scientific discipline involving the study of fossil materials. Paleontological resources, or fossils, include the body remains, traces, or imprints of plants or animals that have been preserved in the Earth's crust. Among paleontologists, fossils are generally considered to be scientifically significant if they are unique, unusual, or rare; diagnostically or stratigraphically important; or add to the existing body of knowledge in a specific area of the science. The BLM considers all vertebrate fossils to be scientifically significant. Invertebrate and plant fossils may be determined to be significant on a case-by-case basis.

Paleontological resources identified on public lands are considered by the BLM as constituting a fragile and nonrenewable scientific record of the history of life on earth, and are thus considered to represent an important and critical component of America’s natural heritage. Once damaged, destroyed, or improperly collected, their scientific and educational value may be reduced or lost forever. In addition to their scientific, educational, and recreational values, paleontological resources can be used to inform land managers about interrelationships between the biological and geological components of ecosystems over long periods of time.

Young alluvial deposits or deep soils may cover and obscure sedimentary bedrock, and any fossils that may occur in that bedrock would be unidentifiable or irretrievable prior to disturbance actions. In most of these cases, the fossil resources can not be quantified, but the potential for impacting paleontological resources should be addressed in the proposals.

The types of fossils preserved in a sedimentary rock sequence depend on the geologic age of the rocks in which they occur and the environment in which the sediments that comprise the rocks accumulated. Rocks that crop out (are exposed) at the surface of an area and can potentially yield fossils are the result of geologic (depositional, structural, and erosional) history**.** Geologic formations and sediments exposed at the surface in the Monticello PA range from Pennsylvanian to Recent in age. General geologic mapping of the Monticello PA is available as Hintze's (1975) Geological Highway Map, digitally by Hintze et al. (2000), and in published USGS 2 degree sheets (scale 1:250,000) by Haynes et al. (1972) and Hackman et al. (1973). More detailed descriptions of the geology of the Monticello PA are provided in the Mineral Potential Report.

In the Monticello PA, fossil-bearing sedimentary rocks range in age from Pennsylvanian to Quaternary and represent parts of the three great periods of Earth history during the Phanerozoic (*phaneros* = visible, *zoic* = life) eon: the Paleozoic, Mesozoic, and Cenozoic. Fossils preserved

in these deposits include invertebrate, vertebrate, plant, and trace fossils. Mesozoic age rocks are most abundant and the only Cenozoic rocks are Quaternary in age. Cenozoic rocks older than Quaternary age that may have been present have been removed by erosion. Vertebrate fossils from the Monticello PA include the body remains of fish, amphibians, reptiles (including dinosaurs), and mammals, as well as tracks and traces of terrestrial animals. These fossils occur in rocks of Pennsylvanian, Permian, Triassic, Jurassic, Cretaceous, and Quaternary age and include some specimens known from nowhere else.

Within the Monticello PA, scientifically significant or important and valuable vertebrate and non-vertebrate paleontological resources are most abundant in the Cedar Mountain, Burro Canyon, Morrison, and Chinle Formations (Classes 4 and 5), and are locally present but less abundant in the Mancos, Dakota, Summerville, Kayenta, Moenave, Moenkopi, Cutler, Rico, and Hermosa Formations (Class 3). Scientifically significant or important vertebrate and non-vertebrate fossils occur but are generally uncommon in Pleistocene-age surficial deposits—that is, the Bluff, Entrada, Curtis, Carmel, Navajo, and Wingate Formations, and in the White Rim Sandstone Member of the Cutler Formation (Class 2). Scientifically significant or important vertebrate and non-vertebrate fossils do not occur in relatively young (Holocene-age) surficial deposits (Class 2), or in igneous rocks such as the Abajo Mountain Intrusives, Minette Intrusives, and Explosion Breccia of volcanic origin (Class 1).

A search of the Utah Geological Survey (UGS) fossil database in Salt Lake City revealed a total of 311 fossil localities in the Monticello PA (Personal communication from M. Hayden to G. F. Winterfeld, Erathem-Vanir Geological, in 2003). Of these, 74 yield vertebrate fossils; 135 yield invertebrate fossils; 88 yield plant fossils; and 42 yield vertebrate trace fossils. Information from this database supplemented by published references and personal experience documents that vertebrate fossils (which the BLM considers of scientific significance) are known from 19 geologic units (formations or members).

3.10.2 CURRENT MANAGEMENT PRACTICES

The BLM has identified four objectives for the management of fossil resources on lands it administers. They are: 1) locating, evaluating, managing, and protecting fossil resources; 2) facilitating appropriate scientific, educational and recreational uses of fossils; 3) ensuring that proposed land uses do not inadvertently damage or destroy important fossil resources; and 4) fostering public awareness of the Nation's rich paleontological heritage. Uniform procedural guidance for management of paleontological resources on BLM lands is provided by the BLM's Paleontology Resources Management Manual and Handbook H-8279-1 (BLM 1998a).

Collection of fossils from BLM-administered lands in the Monticello PA is allowed with some restrictions, depending on the significance of the fossils and the place of collection. Under existing regulations, recreational collection of common invertebrate or plant fossils by the public is allowed in reasonable quantities using hand tools. Exceptions to this include except in developed recreation sites or areas or where otherwise prohibited and posted. The public is also allowed to collect petrified wood without a permit for personal, noncommercial purposes. Petrified wood is treated by the BLM as a mineral material rather than as a fossil. Individuals can collect up to 25 pounds plus one piece per person per day, with a maximum of 250 pounds in one calendar year. Current regulations do not allow any commercial collecting of paleontological resources, but a commercial permit may be obtained for the collection and sale of petrified wood.

Recreational collecting of vertebrate fossils, as well as noteworthy fossil invertebrates and plants, is prohibited on all BLM-administered lands. Vertebrate fossils are the remains or traces of animals with backbones such as fish, turtles, dinosaurs, mammals, reptiles, and birds, and include material such as fossil bones, teeth, tracks, coprolites, and burrows. Significant plant and invertebrate fossils are determined on a case-by-case basis.

Professional paleontologists conducting research or assessment and mitigation are primarily regulated through the permit process. Two types of paleontological resource use permits are issued. The basic permit is a survey and limited surface collection permit, issued for reconnaissance work and collection of surface finds, with a one-square-meter limit on surface disturbance. If disturbance during the paleontological work will exceed this limit, or will require mechanized equipment, the researcher must apply for an excavation permit. Prior to authorization of an excavation permit, BLM must prepare an environmental assessment of the proposed location. All fossils collected under a permit remain public property, must be placed in an approved repository, and never can be sold. Annually, the BLM issues one or two paleontological resource use permits specifically for the Monticello PA (Personal communication with Laurie Bryant, 2003). There are also approximately 12 statewide research permits allowing surface collecting/reconnaissance that would include the Monticello PA. In addition, the BLM issues approximately eight consulting permits annually in Utah, all of which are statewide and thus include the Monticello PA. The number of amateurs involved in collecting is unknown. The Monticello FO receives several inquiries each year regarding fossil collection. Certainly many important paleontological discoveries have been and will continue to be made by amateurs or those who accidentally encounter fossils, but the number of such discoveries is also unknown.

The BLM favors the development of museum exhibits and informational kiosks or similar developments at roadside turnouts over the interpretation of areas where fossils remain in the ground. These projects provide opportunities for learning and enjoyment. There may be substantial risk of damage or unauthorized collecting of fossils by the public in interpretive areas that are not staffed.

3.10.3 Resource Issues

Fossil theft and vandalism is a problem within the FO boundaries. Public interest in fossils and the commercial value of fossils have increased significantly in recent years. As public interest waxes and the prices of fossils rise, federal land managing agencies (including the BLM) are under increasing pressure to both protect scientifically significant fossil resources and to ensure their appropriate availability to the general public. Escalating commercial values of fossils also means that increasingly, fossils on federal lands are subject to theft and vandalism. These crimes reduce scientific and public access to scientifically significant and instructive fossils and destroy the contextual information critical for interpreting the fossils. As described in Title 43 CFR Subparts 8365.1-5 and 8360.0-7, willful disturbance, removal and destruction of scientific resources or natural objects on federal lands is illegal and there are penalties for such violations. Often, the most pronounced damage is the loss of the context and other significant scientific data, the worth of which is difficult to evaluate in monetary terms.

3.10.4 SENSITIVITY EVALUATION

The Monticello FO uses two systems to classify its lands with regard to paleontological resources: the Paleontology Condition System, which is in standard use, and the Probable Fossil Yield Potential, which has been informally adopted by some state BLM offices.

The Paleontology Condition System classifies areas according to their potential to contain vertebrate fossils, or noteworthy occurrences of invertebrate or plant fossils. According to the BLM Handbook 8270-1 (BLM 1998a, revised), this system uses the following classifications:

Condition 1: Areas that are known to contain vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils. Consideration of paleontological resources will be necessary if the Field Office review of available information indicates that such fossils are present in the area.

Condition 2: Areas with exposures of geological units or settings that have high potential to contain vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils. The presence of geologic units from which such fossils have been recovered elsewhere may require further assessment of these same units where they are exposed in the area of consideration.

Condition 3: Areas that are very unlikely to produce vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils based on their surficial geology, igneous or metamorphic rocks, extremely young alluvium (sediment deposited by flowing water), colluvium (a lose deposit of rock debris accumulated through the action of gravity) or eolian (carried by the wind)deposits, or the presence of deep soils. However, if possible, it should be noted at what depth bedrock may be expected in order to determine if fossiliferous deposits may be uncovered during surface-disturbing activities (BLM 1998a, revised).

The Probable Fossil Yield Potential is a planning tool involving the rating of geological units, usually at the formation or member level, according to the probability of yielding paleontological resources that are of concern to land managers. The classes include the following (personal communication from D. Hanson to G. F. Winterfeld, Erathem-Vanir Geological, 2003):

Class 1: Igneous and metamorphic (tuffs are excluded from this category) geologic units or units representing heavily disturbed preservational environments that are not likely to contain recognizable fossil remains.

Class 2: Sedimentary geologic units that are not likely to contain vertebrate fossils or scientifically significant nonvertebrate fossils.

Class 3: Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence. Also sedimentary units of unknown fossil potential.

Class 4: Geologic units that are Class 5 units (see below) that have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation.

Class 5: Highly fossiliferous geologic units that regularly and predictably produce vertebrate fossils and/or scientifically significant nonvertebrate fossils, and that are at risk of natural degradation and/or human-caused adverse impacts.

3.11 RECREATION

3.11.1 RESOURCE OVERVIEW

The Monticello PA (previously referred to as the San Juan Resource Area in the 1991 RMP [BLM 1991a]) administers an area that has gained international recognition for its extraordinary natural beauty and numerous recreational opportunities. In addition to the recreational amenities it manages, the Monticello PA is near several popular destinations managed by other federal and state land management agencies. These areas include Glen Canyon National Recreation Area (NRA), Monument Valley, Canyonlands NP, Goosenecks State Park, Hovenweep National Monument and Natural Bridges National Monument.

The Moab PA, internationally recognized for its recreation resources as well, borders the northern edge of the Monticello PA. As the popularity of the entire region has increased, seasonal visitation and demand for a variety of recreational opportunities in the Monticello PA has increased as well. These opportunities include: hiking, biking, boating, cultural resource viewing, camping, off-highway vehicle (OHV) use, rock climbing, horseback riding, hunting, wildlife viewing, sightseeing and scenic photography. Visitation in the Monticello PA occurs throughout the year, while the busy seasons occur in the spring and fall.

3.11.2 CURRENT MANAGEMENT PRACTICES

Although San Juan County is actively promoting itself as a recreational destination, BLM facilities and recreation staff remains limited. There have been major increases in recreational visitation and use over the last 15 years, and impacts to other resources derived from recreation have been identified.

3.11.2.1 RECREATION OPPORTUNITY SPECTRUM (ROS)

The ROS is a tool used by BLM recreation planners to identify existing outdoor recreational opportunities and management potential, based on a combination of three criteria: recreational activity, setting, and experience. Utilizing the ROS system, the range of recreational opportunities in the Monticello PA is divided into the six management classes described below (BLM 1991a). Please see Map 29 for the location of each of these current classes throughout the FO.

- Primitive (P) – These areas are characterized by a roadless, essentially unmodified natural environment. Approximately 245,723 acres are currently managed to be essentially free from evidence of human use. Activities allowed are those that would protect the primitive recreational activities, settings, and experiences.
- Semi-Primitive Non-Motorized (SPNM) – These areas are characterized by a roadless, predominantly unmodified environment. Approximately 550,537 acres are currently managed to provide a predominantly natural environment with limited evidence of human use. The recreational goal in these areas is to provide not more than 20 group-encounters a day.
- Semi-Primitive (Motorized) (SPM) – These areas are the same as Semi-Primitive, except that motorized use is permitted. Approximately 375,074 acres are currently managed similarly to P-class areas, but motorized boat use on the San Juan River is allowed.

- Roaded Natural (RN) – These areas are characterized by a generally natural environment, with evidence of natural resource modification and use that is in harmony with the natural environment. Approximately 725,510 acres are currently managed to maintain this generally natural environment.
- Rural (R) - These areas are characterized by a substantially modified natural environment. Approximately 14,286 acres are currently managed for unlimited access and high visitation, while still in harmony with the natural environment.
- Urban (U) – These areas are characterized by a user-intensive, developed, and modified resource setting. Approximately 2,371 acres are currently managed for high visitation and development.

3.11.2.2 THE SAN JUAN RESOURCE MANAGEMENT PLAN (RMP)

The 1991 San Juan RMP (BLM 1991a) for the Monticello FO is the current guiding document for recreation management throughout the San Juan Resource Area (SJRA). The management objectives are: "to develop recreation sites; to designate SRMAs and manage so as to protect recreational opportunities in accordance with RMP goals; to manage public lands to preserve most ROS P-Class areas and protect most ROS SPNM-class areas in accordance with RMP goals; to designate all of SJRA as open, closed or limited for ORV use, depending in part on ROS classes and on the need to recognize critical environmental values in specific areas" (BLM 1989).

3.11.2.3 OFF-HIGHWAY VEHICLE MANAGEMENT (OHV)

The San Juan RMP (BLM 1991a) defines the level of OHV opportunities, and the reasons for OHV closure areas. Currently there are 611,310 acres open to OHV use without restrictions, 540,260 acres designated as limited use with seasonal restrictions, 570,390 acres designated as limited to existing roads and trails, 218, 780 acres limited to designated roads and trails and 276,430 acres closed to OHV use in the Monticello PA. No maps or inventories were completed for the areas where travel is limited to existing roads and trails. Additionally, the Monticello FO has not completed a designation process for the areas where travel is limited to existing roads and trails.

Off-highway vehicle use is monitored intermittently in four areas in the planning area, including Fish Creek Canyon, Butler Wash, Bridger Jack Mesa and Indian Creek. Monitoring includes the determination of the number of tracks encountered along a transect, the type of tracks observed, and any vehicles observed. The monitoring report concludes with any recommended action or immediate on-the-ground action. Photo logs are also kept to document resource damage. All WSAs in the planning area are monitored for OHV intrusions.

Areas that have intense OHV use include Butler Wash, Comb Wash, Montezuma Creek, Indian Creek, and Hole in the Rock Trail. Demand for OHV activities is expected to continue to increase in the Monticello PA. This will place demands on the FO to provide for and monitor motorized users. This upcoming demand also has implications for OHV designation and for route marking.

There are active OHV groups, both local and national, that want to see improved management from the BLM in terms of OHV route development and opportunities. The BLM has received comments from the public asking for marked OHV trails and trailhead facilities and staging

areas. The BLM has also received numerous complaints about OHV use, misuse, and illegal trail building. There is a growing level of conflict between motorized and non-motorized users of the planning area (see Section 3.10.4.3 below).

The Monticello FO has received increased requests from commercial companies for special recreation permits (SRPs) related to OHV guiding and tours, as well as from groups that organize group events such as the San Juan ATV Safari and the Jeep Jamboree.

The Utah Division of State Parks and Recreation monitors OHV registration through the Utah Division of Motor Vehicles (DMV). The following data show a dramatic increase in OHV ownership in the State of Utah and San Juan County during the past five years (Note: OHV registrations include ATVs, non-street legal motorbikes, snowmobiles and dune buggies. Vehicles that are street legal, such as jeeps and trucks, are licensed, and are not considered OHVs for registration purposes).

Table 3.19. OHV Registrations 1998, 2002, 2003

	1998	2002	2003	% Increase
Statewide	77,361	160,583	167,174	216 %
San Juan County	342	914	961	281%

Source: Personal communication between Julie Nelson, DMV Analyst, and David Harris, SWCA Environmental Consultants, April 8, 2004.

An OHV Survey completed by the Institute for Outdoor Recreation and Tourism entitled Off-Highway Vehicle Four-Wheeler Survey (Reiter and Blahna 1998b), summarizes the use characteristics of visitors to the Moab Easter Jeep Safari. The results of this study can be extrapolated as a representation of all OHV users in the region, and is relevant also to the Monticello PA. Typical expectations of OHV users include scenery, naturalness, seeing a new area, and remoteness. Socializing within one's group was also identified as a high expectation of this user group. Typical users were not characterized as risk takers. The primary management priorities of this user group are to:

- protect natural resources;
- not close or restrict use on any existing routes;
- provide new trails;
- mark and sign popular routes;
- let existing trails get more difficult; and
- emphasize information and educational approaches to minimize impacts and to inform and educate OHV recreationists (Reiter and Blahna 1998a).

3.11.2.4 Special Recreation Permits (SRPs)

With 89 land-and river-based commercial outfitters in the Monticello PA for 2006, guiding and events are becoming an increasingly important part of the local San Juan County economy. However, permitting is a time-consuming activity for BLM staff because a NEPA environmental analysis must be completed before a permit can be issued. A Cost Recovery Program is in place for any NEPA proposal that is estimated to take more than 50 hours of BLM specialists' time. The types of SRPs issued by the Monticello FO are described in detail below.

3.11.2.4.1 Non-commercial Special Recreation Permits (SRPs) and Special Events

Special recreation permits are required for commercial and competitive recreational uses for groups and for OHV events involving 50 or more vehicles on BLM-administered public lands. SRPs may be required for recreational use on public lands by organized non-commercial groups of greater than one person, but permit issuance would be at the discretion of the FO Manager and based on site-specific conditions (personal communication between Brad Colin, Monticello FO, and David Harris, SWCA Environmental Consultants, June 22, 2007). Commercial outfitters are required to submit a schedule of use prior to the BLM issuing an SRP (BLM 2002b).

3.11.2.4.2 Commercial and Non-Commercial River Permitting

In addition to the permit stipulations stated above, additional stipulations apply to the San Juan River. In 2005, the BLM received 4,325 non-commercial permit applications for the San Juan River; of which 964 were approved. Due to the high and growing demand, the BLM has instituted a mandatory, assigned campsite system on the San Juan River at Slickhorn (sites A–E), Grand Gulch, Trimble, Oljato, and Steer Gulch campsites, which are the only campsites available at higher water levels. The BLM reserves dates at these nine campsites on a rotating basis for commercial use (BLM 2002b). Currently, eleven commercial permits have been issued for the San Juan River, and a moratorium on issuing additional commercial permits is in effect.

3.11.2.4.3 Fee Demonstration, Fee Collection, and Budget for Programs

Due to a lack of base budgetary support, the Monticello FO has come to rely on the Federal Lands Recreation Enhancement Act for needed funds. The Monticello FO collects fees for recreational use in several locations including the San Juan River, Cedar Mesa and fee collection sites at two campgrounds.

Services to the public are provided from these fee monies. These services include (but are not limited to) maintenance of campgrounds, boat ramps, and restroom facilities; staffing of the San Juan River Ranger Station and the Kane Gulch Ranger Station; and expenses related to the San Juan River and Cedar Mesa permit activities. Fees amounted to $259,330 in 2005. Fee, receipts vary greatly depending on water levels in the San Juan River and the amounts of drinking water in the canyons available for backpackers. Fees from the river program support both the river program and the Cedar Mesa program. While the Cedar Mesa program does collect fees, they are not enough to cover the expenses incurred for the management of the area.

3.11.2.5 Recreation Management Areas

BLM recreational management includes the designation two types of recreational management areas; Special Recreation Management Areas (SRMAs) and the Extensive Recreation Management Area (ERMA). SRMAs are areas with very specific recreational opportunities or needs that require intensive management. SRMAs typically receive more intensive use and require higher numbers of staff and/or facilities to manage. The ERMA encompass all those areas within the Monticello PA that are not managed as SRMAs. Detailed descriptions of the SRMAs and the ERMA in the Monticello PA are given below. Within the Monticello PA, three areas have been designated as SRMAs, including the San Juan River, Grand Gulch (which encompasses Cedar Mesa), and Canyon Basins. The Colorado River lies within the ERMA, but is not designated as part of the ERMA.

Another management technique is the designation of ACECs. ACECs are designated areas in the FO area where special management attention is needed to: 1) protect and prevent irreparable damage to important historic, cultural, and scenic values, fish or wildlife resources, or other natural systems or processes; or 2) to protect human life and safety from natural hazards. While ACECs typically are not associated directly with recreational management, in many cases the protection of ACEC resource values provides certain types of recreational opportunities generally relating to cultural, historic, scenic, or wildlife resources.

3.11.2.5.1 Special Recreation Management Areas (SRMAs)

3.11.2.5.1.1 San Juan River SRMA (SJRMA)

The San Juan River SRMA (SJRMA) encompasses approximately 15,000 acres on the north side of the San Juan River, from Montezuma Creek downstream to the boundary of the Grand Gulch Plateau SRMA, west of the town of Mexican Hat, Utah. The south side of the San Juan River is under the jurisdiction and administration of the Bureau of Indian Affairs (BIA) and the Navajo Nation.

Boating use on the San Juan River is very popular. A total of 1220 trips were recorded for 2005 with 45,059 user days. 2004 use was 1015 trips with 37,632 user days. Use varies widely depending on water flows in the river. 2005 was a record high water year. This intensive use necessitated the initiation of a lottery system for obtaining permits to control the number of visitors on the river. Many more private users apply than obtain permits, and many more companies would like to have commercial permits on the San Juan River. Pending the completion of a San Juan River Management Plan, commercial use is currently capped by the number of operators and by the number of launch dates.

The majority of float trips occur from March through September, though river use is open year-round. Launch sites include Sand Island and the Mexican Hat Boat Ramp while other sites are also used occasionally. Take-out locations are the Sand Island Boat Ramp, the Mexican Hat Boat Ramp, and Clay Hills.

There is no current river management plan for the San Juan River. Natural resources issues identified by staff in the Monticello FO are described below:

- A San Juan River Management Plan is needed.
- Expansion of invasive, non-native species along the riparian corridor and popular camping areas.
- High recreational use is making the protection of threatened and endangered species more difficult. Increase in recreation, especially in riparian areas and canyons, is impacting special status species, making protection more difficult. These species include the Yellow-billed cuckoo, the Southwestern willow flycatcher, the Gunnison Sage-grouse and the Mexican spotted owl (see Section 3.15 – Special Status Species).
- Increased visitation, and access to more information, has escalated the amount of looting and degradation of cultural sites. OHV riders both create and follow trails that pass directly through cultural sites. Secondary impacts include increased scouring and erosion of cultural resource sites as a result of vegetation loss from OHV use and dispersed camping related to OHV use.

- Siltation on the lower half of the river has changed the boating experience and may cause potential closure in 10-15 years.
- Water development in the upper San Juan River basin has created lower flows to lower river segments; boaters, especially those with larger commercial boats, are having problems getting through and are canceling launches.
- Launch ramps at the Sand Island Campground and at Mexican Hat Boat Launch are prone to flood damage.
- Management Agreements with the Navajo Nation and Glen Canyon NRA should be written (as of February 2004 these are underway).
- The boundaries of the SRMA need to be changed due to the "accretion" of land at approximately River Mile (minus) -9 to River Mile approximately (minus) -5, south of the private parcels located at the town of Bluff.

The 2001 Utah Rivers Study completed by the Institute for Outdoor Recreation and Tourism asked visitors to identify problems along the Upper and Lower San Juan River. Table 3.20 shows results of this study. However, it should also be noted that 98% of boaters on the upper San Juan and 99% on the lower San Juan said they were satisfied with their river trip experience.

The most popular trip origin and destination on the San Juan River is from Sand Island to Mexican Hat, with more than double the trips as any other stretch of the river. The majority of trips originate from Sand Island Campground.

Table 3.20. Issues Identified by Users on the San Juan River

Upper San Juan River	Lower San Juan River	Both Sections
Destruction of historic resources	Hard finding unoccupied campsites	Litter along the river
Graffiti or other vandalism	Not enough campsites along river	Evidence of cattle
Lack of information about river	Cattle droppings at campsites	Graffiti/Vandalism
Lack of water at launches/take-outs	Destruction of historic resources	Lack of water at launches
Vegetation and soil trampling at launches	Litter along river	
	Low flying aircraft	
	Lack of water at launches/take-outs	

Source: Blahna and Reiter 2001.

Developed sites within the San Juan SRMA include the Sand Island Campground with 24 sites, Sand Island Boat Launch, and Mexican Hat Boat Launch. The river take-out point at Clay Hills is on land administered by Glen Canyon NRA. There is little development at Clay Hills; a pit toilet, an unimproved dirt ramp, and a rough dirt access road.

3.11.2.5.1.2 Grand Gulch Plateau SRMA/Cedar Mesa

The Grand Gulch Plateau SRMA includes not only the Grand Gulch canyon system, but also Cedar Mesa and its canyon systems. The Cedar Mesa area of the Grand Gulch Plateau SRMA is an area of regional, national and international significance for recreation. It is located approximately 25 miles west of the town of Blanding, Utah and 10 miles north of the town of Mexican Hat, Utah. It is bordered on the north by the Manti-La Sal National Forest (NF), on the east by Butler Wash, on the west by Scenic Highway Route 276, and on the south by Highway 163 and the Glen Canyon NRA.

The major attractions within Cedar Mesa are its cultural resources including: lithic scatters, petroglyph and pictograph panels, pit houses and pit structures, Pueblo kivas, granaries, and cliff dwellings. Currently Cedar Mesa is being managed under the Grand Gulch Plateau Cultural and Recreation Area Management Plan (BLM 1993c). Due to increasing demand, a backcountry permit allocation system was adopted in l998 for Cedar Mesa hikers. Permits are required to hike the area and are obtained either at the Monticello FO or at the Kane Gulch Ranger Station on Cedar Mesa.

The Grand Gulch Plateau Cultural and Recreational Area Management Plan (BLM 1993c) established the following overall objectives for the Cedar Mesa area (including Grand Gulch):

- protect and preserve cultural resources;
- protect, preserve, and enhance the natural character, solitude, inspirational value and scenic quality;
- protect and preserve primitive and semi-primitive and non-motorized recreation opportunities; and
- increase awareness, appreciation, and stewardship of cultural and natural resources through education and interpretation.

Recreation resource management decisions specific to the Grand Gulch Plateau SRMA include:

- The Grand Gulch Plateau area was identified as an area to be managed to preserve Recreation Opportunity Spectrum (ROS) primitive (P) class and protect ROS semi-primitive non-motorized class (SPNM) areas (see Section 3.10.2.2 above for detailed ROS information).
- The following ROS classes were assigned within the Cultural and Recreation Management Area: primitive (P) class, semi-primitive non-motorized (SPNM) class, semi-primitive motorized (SPM) class, and roaded natural (RN) class (See Map 29 for a depiction of current ROS areas within the FO planning area).
- Five recreation sites were identified for development or improvement including: Kane Gulch Ranger Station Area, which was constructed in 2005 & 2006. Comb Wash Campground, which is funded for 2006; Arch Canyon Campground, Butler Wash Ruin, and Mule Canyon Ruin. All have been developed or being planned for development except for Arch Canyon (Arch Canyon will likely not be recommended for development in the current RMP revision).

The Kane Gulch Ranger Station, located at the main access point into Grand Gulch, is the primary administrative site for the management of the area. BLM employees and volunteers, who live and work there seasonally from mid-February to November, staff the ranger station. Several other buildings and a number of travel trailers are sited there. Developed recreation sites

within Grand Gulch Plateau SRMA include: the Kane Gulch Ranger Station, Bullet Canyon Trailhead, Government Trailhead, Collins Springs Trailhead, Arch Canyon Ruin, Comb Wash Campsite, Fish and Owl Canyon Trailheads, Moon House Trailhead, and the Butler Wash Ruin and Mule Canyon Ruin Interpretive Sites.

3.11.2.5.1.3 Canyon Basins SRMA

Canyon Basins SRMA encompasses approximately 214,000 acres. It is surrounded by Canyonlands National Park (NP) and Glen Canyon NRA on the west, Manti-La Sal NF on the south, and Hart's Point on the east. Located within the SRMA boundaries are the following ACECs: Indian Creek, Lavender Canyon, Bridger Jack Mesa, Shay Canyon, Butler Wash, and Dark Canyon. Other well-known recreation areas within the SRMA include Beef Basin, Shay Mesa, Dark Canyon Plateau, and Salt Creek Mesa.

The Indian Creek Recreation Corridor is a recognized attraction for rock climbing, while also providing opportunities for camping, backpacking, motorized vehicle use, and archeological site viewing. The Access Fund, a climbing lobbying group, has a very strong commitment to this area and recently, with private industry support, is revising a brochure on Indian Creek. An environmental assessment (EA), funded by the Nature Conservancy was signed in October 2005 for the Indian Creek Recreation Corridor. A private group, the Friends of Indian Creek Inc. was established in 2006 to assist the BLM with the implementation of the Indian Creek Recreation Corridor EA.

The rapidly increasing popularity of the area has severely increased the impact of humans on the corridor environment, and has created a demand for additional visitor services and facilities. Issues and concerns arising from the area's increase in popularity include: an increase in size and use of dispersed camping areas; management of human waste; preventing human-livestock conflicts; lack of adequate and safe parking; and protection of cultural sites within the immediate climbing area.

Existing facilities within the Canyon Basins SRMA include: Newspaper Rock Interpretive Site, Indian Creek (upstream from the Falls) Campsite (3 sites), and Hamburger Rock Campground (8 sites).

Dark Canyon ACEC is located in Canyon Basin SRMA. The Dark Canyon ACEC encompasses approximately 62,040 acres and has the same boundaries as the Dark Canyon Primitive Area. It includes Dark Canyon with its side canyons of Lost, Lean-To, Youngs, and Black Steer, and then Bowdie Canyon, Gypsum Canyon, and Fable Valley. This area was designated as a primitive area in December 1970 to protect its scenic, recreational, and other values and became an instant Wilderness Study Area in 1976. The lower portions of Dark Canyon (3 miles), Bowdie Canyon (2 miles), and Gypsum Canyon (3 miles) are within the G1en Canyon NRA and are areas proposed for wilderness designation. The upper portion of Dark Canyon is within the Manti-La Sal NF and was designated in 1984 as the Dark Canyon Wilderness Area, encompassing about 50,000 acres (BLM 1986a).

Beef Basin is located within the Canyon Basin SRMA. This area is popular with those seeking a backcountry driving experience, primitive camping and an opportunity to see ruins.

Since the implementation of mandatory permit system on Cedar Mesa, there is increasing private recreational use of Dark Canyon as well as increasing demand for permits from commercial

operators. If this trend continues, a permit system for Dark Canyon will likely be necessary. Commercial interest and the use of Dark Canyon is originating from FS, NPS, and BLM public lands. There is little current on-the-ground management by the BLM within the Dark Canyon ACEC.

3.11.2.5.2 EXTENSIVE RECREATION MANAGEMENT AREA (ERMA)

3.11.2.5.2.1 Colorado River

The Colorado River lies within the ERMA, but is not designated as part of the ERMA. The Monticello FO manages the portion of the Colorado River from the northernmost PA boundary at the Colorado River south to Canyonlands NP (approximately river mile 50 to river mile 31).

Guidance supports dispersed recreation use throughout the San Juan planning area, with permits required for commercial and private use in special areas where protection of resource values is needed. There is very little unpermitted day use of the river in Canyonlands NP because of the distance from put-ins and take-outs. Commercial use is expected to increase outside of the park (personal communication between Dave Wood, Canyonlands NP, and David Harris, SWCA Environmental Consultants, on March 30, 2004). A joint agreement between the BLM Monticello FO and Canyonlands NP to manage the Colorado River segment needs to be completed.

3.11.2.5.2.2 Hole in the Rock Trail

This trail is both an historic feature as well as a recreational opportunity. The trail was established in 1879 as a route between the settlements of Escalante and Bluff. Major use of the trail is by four-wheel drive vehicles for scenic driving. The trail segment within the Monticello PA is approximately 115 miles long.

The trail is open to OHV use. Sections of this trail lead into Glen Canyon NRA, and within the Glen Canyon NRA, vehicle use is open to licensed vehicles, but not unlicensed OHVs. There is increasing use and interest for both private and commercial use of the trail. These uses include cultural tours, OHV tours, bicycle tours, canyoneering, backpacking, and special uses such as OHV Safaris and adventure races. Many local residents have ancestors that traveled on this trail. These residents want to visit the area, and they have established The Hole in the Rock Foundation to protect their interests and work with the BLM on issues concerning this trail.

3.11.2.5.2.3 Old Spanish National Historic Trail

Approximately 20 miles of the Old Spanish National Historic Trail (a designated National Historic Trail running from New Mexico to California), lies within the Monticello PA, and except where crossing private land, the trail corridor is open for vehicle use. There are no BLM-administered facilities along the trail segment, and the BLM is currently not actively managing the trail. The BLM is currently cooperating with the National Park Service to complete a plan to manage the entire Trail.

3.11.2.5.2.4 Valley of the Gods

The Valley of the Gods is located in the southern portion of the Monticello PA. Recreational activities in Valley of the Gods include sightseeing, primitive camping, hiking, and biking. The

annual one-day Bluff Balloon Festival is held there in January. The area is well known for its scenic quality, with outstanding views of Cedar Mesa sandstone and other unique geologic formations. County Road 242 (a dirt, single-lane road) takes a 17-mile circuitous route through the valley, passing many features of interest.

3.11.2.5.2.5 Three Kiva Pueblo

Three Kiva is a pueblo site with a reconstructed kiva. Kivas are an important Southwestern architectural form. "Kiva" is a Hopi word used to refer to specialized round and rectangular rooms in Pueblos. Modern kivas are used for men's gathering and ceremonial purposes. Archeologists believe that ancient kivas were used for similar purposes. The site, near Montezuma Creek, has an interpretive sign as well as a ladder allowing visitors an opportunity to view a pueblo kiva.

3.11.2.5.2.6 Trail of the Ancients National Scenic Byway.

The Trail of the Ancients National Scenic Byway is a scenic drive providing an opportunity for viewing prehistoric and modern Native American cultures and remarkable desert scenery. This scenic byway runs through a portion of the Grand Gulch Plateau SRMA.

3.11.3 Trends in Outdoor Recreation Activities

According to staff in the Monticello FO, the following trends in recreation have been observed in the resource area:

- increased OHV use;
- increased commercial activity requests;
- increased Special Event requests;
- increased rock climbing;
- increased visitation of recreation and cultural sites due to increase in distribution of information via the Internet;
- increased demand for private and commercial river use;
- the displacement of campers out of areas with mandatory permit systems;
- increased overflow camping use by visitors that cannot find room in NPS campgrounds;
- increased visitor expectation that BLM’s information sources are comparable to that available on the Internet; and
- displacement of private visitors and commercial operators from the NPS lands around Moab; these visitors are moving into the Monticello area (Reiter and Blahna 1998a, 1998b).

The Recreation Management Information System (RMIS) documents visitor days for various activities throughout the FO area. Although these numbers are not completely accurate, they do reflect the proportionate use as well as the increase in use of the resource for recreation activities. The table below shows recreation use for the Fiscal years 2001, 2002 and 2003.

3.11.4 ISSUES AND CONCERNS

3.11.4.1 INCREASED RECREATION USE

SRMA boundaries need to be reevaluated based on increased visitor use, recreation opportunities and the resource involved. The current RMP does not identify the kinds of levels of land use that could sustain recreational values. There are no accurate numbers on private recreational use other than the permitted uses on the San Juan River and Cedar Mesa. At current staff levels, it is becoming difficult to keep up with SRP and NEPA workloads.

Table 3.21. Visitor Days 2001–2005

Activity	2002	2003	2004	2005	2002-2005 Increase or Decrease
Camping	36,103	51,266	85,759	84,560	48,457
Boating (non-motorized)	19,308	21,696	28,094	32,700	13,392
Hiking	12,169	15,244	21,652	20,832	8,663
Backpacking	8,817	11,389	14,986	10,391	1,574
Viewing Cultural Sites	4,098	4,321	8,132	7,516	3,418
OHV Use	1,833	6,610	11,292	12,060	10,227
Non-motorized events and activities	1,386	157	216	201	-1,185
Hunting	1,119	3,432	2,860	3,930	2,811
Driving for Pleasure	663	2,069	1,733	2,800	2,137
Mountain Biking	662	1,816	1,558	2,297	1,635
Pack Trips	493	813	1,107	2,396	1,903

Source: BLM recreation records located in Monticello FO.

3.11.4.2 RESOURCE CONFLICTS/IMPACTS

Various recreational activities create impacts to resources including riparian areas, vegetation, wildlife, vegetation, soils, grazing, oil and gas, and cultural resources. Resource conflicts occur when two uses compete for the same resource, such as recreational use in wildlife habitat. Specific areas where resource conflicts are occurring include:

- Recreation vs. Natural Resources – specifically at Indian Creek where camping impacts the riparian area, traffic impacts safety, and high use impacts human health and safety.
- Recreation vs. Cultural Resources – The Cedar Mesa area of Grand Gulch has a reputation for being a premier place to hike into Indian ruins and remote canyons. Although managed by permit, information available on the Internet and in guidebooks is leading hikers to sensitive cultural sites. The issue is how to protect cultural sites and still allow for visitation and education at Newspaper Rock, Butler Wash, Comb Wash, Cedar Mesa, and Montezuma Creek. This issue is particularly intense along the San Juan River and on Cedar Mesa.

3.11.4.3 USER CONFLICTS

As recreational use has increased throughout the Monticello PA, users have moved into areas historically used by other resource users, such as ranchers, and the oil and gas industry. Conflicts have developed among these user groups as long-term users resent encroachment of recreationists on the public lands. In turn, some recreation users see their use of the public land as the highest and best use, and feel that the established users have no place on that land. Another source of tension is among various recreation user groups.

When recreational use reaches a certain threshold, user groups start to resent the multi-use nature of public lands. For example, some hikers resent mountain bikers and motorized users on shared trails, while mountain bikers may seek some trails free from motorized use. Conflicts are known to exist between:

- recreation and grazing users;
- non-motorized recreation and motorized recreation users;
- rock-climbing and grazing (specifically in Indian Creek) users;
- commercial vs. private users (related to San Juan River users as well as backpackers throughout the resource area, especially in Dark Canyon); and
- river runners and OHV users.

3.11.4.4 PUBLIC HEALTH AND SAFETY

Human waste disposal is becoming an issue in the more popular slot canyons and dispersed camping areas, such as Indian Creek. Climbers and hikers, the primary users of this area, have written letters to the BLM asking the agency to address this problem. The availability of facilities is directly related to public health. Inadequate numbers of organized campgrounds and restroom facilities contribute to unhealthy levels of human waste in some areas, posing a health risk to visitors. Funding for maintenance of existing and needed facilities is also a serious issue.

Flooding is an issue for recreational use in the SJRA. Flash floods are a real and seasonal danger in narrow canyons and canyon crossings. Recent flooding in specific areas provides an example of the problem: portions of Newspaper Rock and Sand Island Campground were recently inundated by floodwaters. Sand Island campground is particularly prone to flood damage. Trails may also become inundated and non-functional. The BLM currently lacks the funding to address and rectify the damage that occurs from flooding.

3.11.4.5 OFF-HIGHWAY VEHICLES (OHVS)

3.11.4.5.1 OHV USE

The increase in the use of OHVs has created several issues for the Monticello FO. First, the speed of OHVs allows easier access than foot travel to remote parts of the area, making management of this activity and the area utilized more difficult, while also increasing the potential range of impacts. Secondly, the popularity of this activity continues to grow, and the addition of special events puts additional strain on resources. Planning for areas in which OHVs can be used continues to receive national and local attention. Specific issues identified by the BLM include:

- Although the current RMP identifies all public lands as open, limited, or closed, the Plan does not give specific management guidance within these designations.
- The OHV designations outlined in the SJRMP do not currently address the amount of recreational use now occurring or the potential of resource damage associated with this use.
- In the current RMP none of the OHV designations have been implemented. Maps depicting existing RMP decisions are out of print and not available to the public.
- Increased use creates the need for additional management and planning, which is not funded.

Part of this RMP revision process is to evaluate and update the OHV designations and develop a current map of the Monticello PA in order to ensure that the FO is in compliance with Executive Order 11644 as amended by Executive Order 11989 and also to ensure that the FO is following the National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands, January 2001.

3.11.4.5.2 OHV LEGAL ISSUES

There are numerous OHV-associated legal issues, which include: illegal explosive blasting used to open OHV trails into a WSA; the uncompleted designation of roads and trails within the FO area; the updating of travel maps; and San Juan County blading of OHV routes on BLM-administered public lands without BLM concurrence. There are OHV–cultural resources conflicts, expectations to provide services to the OHV community, legal questioning of the Indian Creek and Comb Wash emergency closures, and a private OHV user group that is producing OHV maps that the BLM cannot authorize and that the Canyonlands Natural History Association will not sell.

3.12 RIPARIAN RESOURCES

Riparian areas and wetlands are some of the most diverse and productive ecosystems in Utah, but on the landscape level they typically compose very little of the total land area. Riparian and wetland ecological systems comprise less than one percent of the 22 million acres of public lands administered by BLM in Utah. However the functions and habitat value provided by these areas are essential to both humans and wildlife. For humans, these values are recreational, scenic, livestock production, and hunting. Riparian areas are also typically tied to cultural and historical values. Additionally, the lifecycles and migration routes of many mammals, birds, amphibians, and fishes rely partially or wholly on riparian habitat. Riparian and wetland resources are among the first landscape features to show impacts from management activities and provide an indicator of overall watershed condition.

Riparian and wetland areas are vegetative or physical ecosystems that develop in association with surface or subsurface water (Leonard et al. 1997). Benefits of riparian/wetland ecosystems include:

- maintaining water quantity and quality;
- enhancing soil stability and reducing sediment loads;
- reducing destructive energies associated with flood events;
- providing for diverse plant and wildlife ecosystems, including special status species;
- economic value derived from sustainable uses (open space, hunting, livestock grazing and commercial recreation);

- migration corridors for wildlife; and
- thermal/shade protection for both humans and wildlife, which is especially important within the arid southwest.

3.12.1 RESOURCE OVERVIEW

BLM administers approximately 20,435 acres (1.2 percent) of riparian and wetland resources within the Monticello PA. Linear riparian distance in the Monticello PA totals 1,078 miles. Wetlands in the Monticello PA are primarily concentrated along these riparian zones. Some isolated springs do occur, and while these make up a very small percentage of wetland resources, they are critical to both wildlife and livestock.

Within most riparian/wetland systems in the arid southwest, the potential of a riparian/wetland ecosystem is strongly dependent upon the availability of water. The degree, timing and source of water availability, among other physical factors, contribute to a stream falling into one of three categories:

- Perennial- A stream that flows continuously. Perennial streams are generally associated with a water table in the localities through which they flow.
- Intermittent- A stream that flows only at certain times of the year when it receives water from springs or some surface source such as melting snow in mountainous areas.
- Ephemeral – A stream that flows only in direct response to precipitation, and whose channel is above the water table at all times.

Existing riparian vegetation communities in the Monticello PA were catalogued in 1990 using aerial photo interpretation with some ground-truthing. Identified species reflected the dominant vegetation in the community during the cataloguing. Existing riparian vegetation cover types and percent composition of riparian area during this time period are included below in Table 3.22.

Table 3.22. Riparian Community Acreages, 1990 Inventory, Monticello PA

Riparian Community	Percent Composition
Cottonwood	65.9%
Willow	<0.1%
Tamarisk*	30.2%
Grasses	0.3%
Oak	3.6%

*is an invasive, non-native species

3.12.2 RIPARIAN/WETLAND STUDIES

The BLM has developed Riparian Proper Functioning Condition (PFC) methodology for use by interdisciplinary teams of natural resources professionals (BLM 1993d). This methodology assesses riparian areas relative to what would be expected under natural conditions and limiting factors, i.e., political, social and economic constraints. Levels of functionality include functional, functional-at risk, nonfunctional and unknown. A preliminary summary of data on riparian functioning condition was prepared by Paul Curtis, Rangeland Conservationist, Monticello FO

(Table 3.23). These data were collected by private contract in 1994 and by BLM resource specialists from 1994 to present. Approximately 50 percent or less of the actual stream mileage was traversed during the collection of this data. Functioning condition is divided into five classes, which are defined below, with corresponding miles of riparian habitat in each class for the Monticello PA (BLM 1998b):

- **PFC:** Currently 639 miles (59 percent) of riparian/wetland areas in the Monticello PA are in PFC when adequate vegetation, landform, or woody debris is present to:
  - dissipate high-energy water flow;
  - filter sediment, capture bedload, and aid floodplain development;
  - improve floodwater retention and groundwater recharge;
  - develop root masses that stabilize streambanks;
  - develop diverse fluvial geomorphology (pool and channel complexes) to provide habitat for wildlife; and
  - support greater biodiversity.
- **Functioning at Risk, trend not apparent (FAR)**: Currently 240 miles (22 percent) of riparian/wetland habitat are in functional condition, but at least one soil, water, or vegetation attribute makes them susceptible to degradation following high flow events. The trend in these systems is not apparent. Management practices which may make them At Risk are commonly livestock grazing, presence of roads, OHV activities, and recreational activities and development.
- **Functioning at Risk, upward trend (FAR>):** Currently 43 miles (4 percent) of riparian/wetland habitat are in functional condition, but an existing soil, water, or vegetation attribute makes them susceptible to degradation following high flow events. However, the limiting attribute is improving, causing the system to trend upward. Some degradation could be natural. Management practices which may make them At Risk are commonly livestock grazing, presence of roads, OHV activities, and recreational activities and development.
- **Functioning at Risk, downward trend (FAR<):** Currently 149 miles (14 percent) of riparian/wetland habitat are in functional condition, but an existing soil, water, or vegetation attribute makes them susceptible to degradation following high flow events. The limiting attribute is not improving, causing the system to trend downward. Some could be natural degradation. Management practices which may make them At Risk are commonly livestock grazing, presence of roads, OHV activities, and recreational activities and development.
- **Non-Functioning (NF**): Currently seven miles (0.6 percent) of riparian/wetland habitat are clearly not providing adequate vegetation, landform, or large wood debris to dissipate stream energy associated with high flows, and thus are not reducing erosion, improving water quality, etc. Some degradation could be natural. Management practices which may make them At Risk are commonly livestock grazing, presence of roads, OHV activities, and recreational activities and development.

Table 3.23. Riparian Functioning Condition, Monticello PA

Drainage	Acres	Miles	Proper Functioning Condition		Functioning at Risk, trend not apparent		Functioning at Risk, trend improving		Functioning at Risk, trend declining		Not Functioning	
			Percent	Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent	Miles
Alkali Canyon	151.60	6.59		0	100%	6.59		0		0		0
Arch Canyon	222.53	8.22	100%	8.22		0		0		0		0
Armstrong	8.40	0.50	100%	0.50		0		0		0		0
Beef Basin	169.28	7.27	11%	0.80		0		0	89%	6.47		0
Big Canyon North	0	0	dry	0		0		0		0		0
Big Canyon South	189.54	8.57		0	100%	8.57		0		0		0
Big Indian	0	0	dry	0		0		0		0		0
Black Steer	0	0	dry	0		0		0		0		0
Blue Cyn-Red	0	0	dry	0		0		0		0		0
Bogus	0	0	dry	0		0		0		0		0
Bowdie	202.22	10.86	100%	10.86		0		0		0		0
Bradford	10.69	0.89	100%	0.89		0		0		0		0
Bridge Canyon	45.30	2.15	100%	2.15		0		0		0		0
Brushy Basin	137.10	7.53	100%	7.53		0		0		0		0
Bullet	47.68	3.46	100%	3.46		0		0		0		0
Butler	929.96	42.11	30%	12.63		0	40%	16.85	30%	12.63		0
Butler WashNorth	303.17	19.07		0	35%	6.67	65%	12.40		0		0
Castle	415.35	18.89	30%	5.67	18%	3.40		0	34%	6.41	18%	3.41
Cedar Cyn-Mancos	0	0	dry	0		0		0		0		0
Cheesebox	162.16	8.95	100%	8.95		0		0		0		0
Coal Bed	284.00	18.93	76%	14.39	24%	4.54		0		0		0

Table 3.23. Riparian Functioning Condition, Monticello PA

Drainage	Acres	Miles	Proper Functioning Condition		Functioning at Risk, trend not apparent		Functioning at Risk, trend improving		Functioning at Risk, trend declining		Not Functioning	
			Percent	Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent	Miles
Colorado	615.38	18.00	100%	18.00		0		0		0		0
Comb Wash	2201.57	36.07	7%	2.52	93%	33.55		0		0		0
Corral	0	0	dry	0		0		0		0		0
Cow Tank	0	0	dry	0		0		0		0		0
Cross Canyon	389.66	8.16	55%	4.49	45%	3.67		0		0		0
Dark Canyon	69.27	5.23	90%	4.70	10%	0.53		0		0		0
Davis	214.62	6.49	49%	3.18	51%	3.31		0		0		0
Deer Canyon	36.59	2.36	100%	2.36		0		0		0		0
Devils Canyon	164.82	6.40	100%	6.40		0		0		0		0
Dodge Canyon	20.43	1.00	100%	1.00		0		0		0		0
Dog Tanks	42.29	2.88	100%	2.88		0		0		0		0
Dripping & Step	53.83	3.15	100%	3.15		0		0		0		0
Dry Valley	0	0	dry	0		0		0		0		0
Dry Wash	314.07	15.80		0	40%	6.32		0	60%	9.48		0
East Canyon	160.64	12.40		0	50%	6.20	50%	6.20		0		0
Fable	318.72	11.43	80%	9.14	20%	2.29		0		0		0
Fish & Owl Creek	973.72	49.42	90%	44.48	10%	4.94		0		0		0
Forgotten	32.79	2.38	100%	2.38		0		0		0		0
Fortknocker	0	0	dry	0		0		0		0		0
Fry Canyon	62.27	2.02		0	100%	2.02		0		0		0
Grand Gulch	2238.39	101.50	100%	101.5		0		0		0		0
Gravel	0	0	dry	0		0		0		0		0

Table 3.23. Riparian Functioning Condition, Monticello PA

Drainage	Acres	Miles	Proper Functioning Condition		Functioning at Risk, trend not apparent		Functioning at Risk, trend improving		Functioning at Risk, trend declining		Not Functioning	
			Percent	Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent	Miles
Gypsum	93.09	9.30	100%	9.30		0		0		0		0
Hart Draw	604.98	26.42	38%	10.04	50%	13.21		0	12%	3.17		0
Hideout	0	0	dry	0		0	0	0	0	0		0
Horse Canyon	69.60	3.81		0	100%	3.81	0	0	0	0		0
Horsehead	60.62	3.00	100%	3.00		0	0	0	0	0		0
Indian Creek	1747.18	64.06	37%	23.70		0		0	63%	40.36		0
Johns Canyon	290.34	13.52	100%	13.52		0		0		0		0
Johnson Creek	93.75	3.98	50%	1.98		0	50%	2.00		0		0
Kane Gulch	48.32	2.60	100%	2.60		0		0		0		0
Knowles	38.11	2.60	100%	2.60		0		0		0		0
Lake Canyon	183.49	9.57	22%	2.11		0		0	45%	4.30	33%	3.16
Lavender	41.06	1.54		0	100%	1.54		0		0		0
Lean-To	49.11	3.13	100%	3.13		0		0		0		0
Lime Creek	707.80	40.00	50%	20.00	50%	20.00		0		0		0
Lockhart	55.60	4.00	40%	1.6	60%	2.4		0		0		0
Long Canyon	0	0	dry	0		0		0		0		0
Lost Canyon	0	0	dry	0		0		0		0		0
Mancos	0	0	dry	0		0		0		0		0
McCracken	194.90	4.65		0		0		0	100%	4.65		0
Mikes	113.70	7.70		0	100%	7.70		0		0		0
Moki Canyon	424.97	21.90	50%	10.95		0		0	50%	10.95		0
Montezuma	1101.24	30.51	12%	3.66	18%	5.49		0	70%	21.36		0
Monument	406.59	15.54		0	100%	15.54		0		0		0
Mule Canyon	268.44	12.80	65%	8.32	35%	4.48		0		0		0

Table 3.23. Riparian Functioning Condition, Monticello PA

Drainage	Acres	Miles	Proper Functioning Condition		Functioning at Risk, trend not apparent		Functioning at Risk, trend improving		Functioning at Risk, trend declining		Not Functioning	
			Percent	Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent	Miles
Navajo-Grey Mesa	12.98	0.70	100%	0.70		0		0		0		0
North Cottonwood	391.86	11.56	51%	5.90		0	49%	5.66		0		0
North Creek	4.31	1.73	100%	1.73		0		0		0		0
North Gulch	60.85	4.00	100%	4.00		0		0		0		0
Pearson Canyon	14.25	1.00	100%	1.00		0		0		0		0
Peters Canyon	16.94	1.22	100%	1.22		0		0		0		0
Point Lookout	168.72	10.08	100%	10.08		0		0		0		0
Recapture	1251.01	41.42	25%	8.00	75%	33.42		0		0		0
Red Canyon	0	0	dry	0		0		0		0		0
Road Canyon	726.19	41.21	29%	11.95		0		0	71%	29.26		0
Ruin	107.17	4.46	55%	2.45	45%	2.01		0		0		0
Salt Creek	0	0	dry	0		0		0		0		0
San Juan	4075.16	56.13	50%	28.07	50%	28.06		0		0		0
Seep Creek	2.31	0.21	100%	0.21		0		0		0		0
Slick Rock Grey Mesa	3.99	0.29	100%	0.29		0		0		0		0
Slickhorn	392.44	22.19	100%	22.19		0		0		0		0
South Canyon	3.02	0.27	50%	0.13	50%	0.14		0		0		0
South Cottonwood	2424.95	77.44	100%	77.44		0		0		0		0
Spring Creek	96.30	5.26		0	100%	5.26		0		0		0
Squaw Canyon	146.67	7.69	50%	3.84	50%	3.85		0		0		0

Table 3.23. Riparian Functioning Condition, Monticello PA

Drainage	Acres	Miles	Proper Functioning Condition		Functioning at Risk, trend not apparent		Functioning at Risk, trend improving		Functioning at Risk, trend declining		Not Functioning	
			Percent	Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent	Miles
Steer Gulch	0	0	dry	0		0		0		0		0
Steer Pasture	146.28	8.00	100%	8.00		0		0		0		0
Ute	48.15	3.37	100%	3.37		0		0		0		0
Westwater	131.30	5.37	100%	5.37		0		0		0		0
White Canyon	893.02	40.22	100%	40.22		0		0		0		0
Youngs	95.12	4.45	100%	4.45		0		0		0		0
TOTAL	**28993.9**	**1077.6**	**59.3%**	**639.35**	**22.2%**	**239.51**	**4.0%**	**43.11**	**13.8%**	**149.04**	**0.6%**	**6.57%**

Riparian/wetland exclosures have been constructed within 15 sites: Comb Wash (1), Indian Creek (3), Montezuma Creek (2, Nancy Patterson (1), Monument Canyon (1), Horsehead (1), and Cross Canyon (6), to either determine ecological site potentials or protect/improve natural functions. Riparian pastures have been established within the Montezuma Canyon allotment to provide special protection to sensitive riparian/wetland ecosystems. Grand Gulch and major portions of Fish and Owl, Mule, Road canyons, and Arch Canyon receive no livestock grazing.

3.12.3 RIPARIAN/WETLAND RESTORATION

Restoration of riparian/wetland ecosystems can involve efforts to manually, mechanically, chemically, or biologically alter or restore riparian/wetland resources or conditions for the benefit of the riparian/wetland ecosystem.

Invasive, non-native species (namely tamarisk, Russian olive, and Russian knapweed) are now common within most riparian/wetland ecosystems along major river ways in the Monticello PA. Some of the common riparian native species are Fremont Cottonwood, coyote willow, rushes, and sedges. Possibly the most devastating aspect of invasive, non-native species is the cumulative alteration to an unhealthy riparian ecosystem. Effects of invasive, non-native species include the following:

- invasive plants often dewater riparian sites with deeper tap roots to out-compete natives for availability of water in arid environments;
- tamarisk secretes salt and increase soil and water salinity, resulting in reduced seed establishment of native species, and reduced downstream water quality. Additionally, tamarisk has deeper roots than native willows, and it will out-compete those for water;
- invasive plants compete for sun and space along the narrow riparian habitats;
- invasive plants have large numbers of seeds and long seed establishment periods (very prolific in comparison to native species);
- invasive plants provide poor habitat, with subsequent reductions in biodiversity (significant decreases in numbers and types of associated biotic species including birds, bats, insects, amphibians, etc.);
- invasive plants promote entrenched systems with highly destructive flooding energies which remain un-dissipated within deep channels, resulting in high bank loss, sedimentation, and salinity; and
- invasive plants are typically less palatable to livestock and wildlife (e.g., willow versus tamarisk), putting native species at a competitive disadvantage, and often resulting in a reduced presence within the riparian community.

3.12.4 RESOURCE DEMAND AND FORECAST

Riparian/wetland ecosystems are strong attractors for both animal and human activities, especially in the arid southwest where summer temperatures often exceed 100 ºF. Demand for diverse riparian/wetland ecosystems is high and currently exceeding the average capacity of these systems in the planning area, with resulting decreases in sustainability, and proper functioning condition. The recreational demand within riparian/wetland is highest during critical spring growing seasons when seedling establishment and stand recruitment occurs, but recreation peaks again during fall seasons after extreme summer temperatures decline. Demands for water

resources with potential direct and indirect impacts to associated riparian/wetlands would likely increase in response to current and prolonged droughts. With decreasing quantity and quality of riparian/wetlands due to growing popularity, the demand for diverse wildlife habitat and refuge becomes even more critical as more species and habitats become sensitive or endangered.

3.12.4.1 RECREATION

The majority of developed BLM recreational campgrounds, trails and facilities are located in association with riparian/wetland ecosystems. Native cottonwoods are some of the most susceptible species with regard to functioning condition and long-term sustainability, but are also the most desirable native and diverse riparian/wetland ecosystem within Monticello PA. Recreational developments within riparian/wetlands increase competition for natural habitats, or eliminate habitats critical to riparian-dependent wildlife species.

Recreational demand for hiking, horse trails, and commercial recreation permits often concentrate uses along streams due to the available water source, thermal protection, and scenery. However, unconsolidated alluvial soils often located within riparian canyons have shown to be extremely susceptible to erosion and degradation by such uses.

3.12.4.2 GRAZING

Livestock production continues to be a source of income for some San Juan County residents, and these operations rely on public lands to provide forage for their livestock. Overgrazing can impact riparian resources through the introduction of invasive species, stream bank degradation, reduction in plant recruitment, and decrease in water quality.

3.12.4.3 INVASIVE SPECIES

Tamarisk (*Tamarix ramosissima*), Russian olive (*Elaeagnus angustifolia*), and cheatgrass (*Bromus tectorum*) have invaded waterways throughout the Monticello PA, drastically changing the composition of riparian vegetation communities. Cheatgrass is a highly competitive, non-native, and invasive grass that has displaced many native plant species across a sizeable portion of rangelands, and has invaded riparian areas and waterways. This grass provides little resource value because of its annual growth form, shallow root system, and protruding awns, and its flammability increases the risks of wildland fire. Populations of Russian knapweed (*Acroptilon repens*) and camelthorn (*Alhagi maurorum Medik*.) have also reached high levels in many river corridors. Strategies used to control tamarisk and other riparian invasive species appear in Section 3.17–Vegetation. The management and maintenance of native diverse ecosystems has become a larger issue in recent years. Vegetative conversions to invasive, non-native species from native species have occurred within riparian/wetlands with influence of management practices.

3.13 SOCIOECONOMICS

The socioeconomic context of this RMP/EIS refers to the social, cultural and economic settings of communities impacted by the implementation of the BLM's management actions. The following section provides a summary of the planning area's social history and current demographic and economic trend information as well as a description of the key industries that are may be affected by management action implementation.

3.13.1 COUNTY OVERVIEW

San Juan County is situated in southeastern Utah, bordering Colorado to the east and Arizona to the west. It is one of the most remote counties in the state. Located far from major transportation corridors and industrial centers, the small towns and communities within the county continue to maintain their rural character. The County comprises over five million acres and has approximately two people per square mile; it is one of the state's most sparsely populated counties. The federal government administers more than three million acres (61%) of public lands within the County. The BLM manages the majority of the county's federal land, with jurisdiction over more than two million acres (41.5%). Of the over two million acres of BLM lands, 1,785,127 acres are managed by the Monticello FO. The remaining 290,473 acres located in San Juan County are managed by the Moab FO. Native Americans have jurisdiction over 1.2 million acres (26%) of land in San Juan County. Only 8.2% of the land is privately owned. Table 3.24 shows the land composition of San Juan County.

Table 3.24. Land Jurisdiction in San Juan County

	Total Acres	% of County
Federal Lands	3,053,847	61.0
BLM Lands	2,075,600	41.5
FS	403,875	8.1
National Park	266,117	5.3
National Recreation Areas	262,244	5.2
USFS Wilderness Area	46,011	0.9
State Lands	263,287	5.3
Private*	411,077	8.2
American Indian	1,277,637	25.5
Total Acres Within the County	**5,005,848**	**100.0**

*May include some local government land.
Source: Utah Division of Travel Development 2004.

Unique to Utah, over half of the population of San Juan County is comprised of Native Americans. Where data is available, the Navajo Nation is discussed as a unique subset of the greater population.

The isolative and rural character of San Juan County is both a "blessing and a curse" to the county's residents, according to the San Juan County Community Development Department. The natural landscape provides outstanding opportunities for solitude and recreation. The County contains colorful sandstone canyons and deserts, timbered mountains, ancient Indian ruins, the Colorado, San Juan, and Green rivers, Lake Powell, National and State parks and monuments. On the other hand, the lack of economic diversity can be problematic for County residents. The current job market does not offer many opportunities and the wages earned rank among the lowest in the state (San Juan County 2002b).

3.13.2 HISTORICAL SOCIAL CONTEXT

The Monticello PA is an area rich in cultural and natural history. Past settlements and uses in the planning area by a variety of peoples have been as important as the ecological processes that have created and shaped the place that the BLM manages today. A brief review of the social and cultural history in the area will provide background information on the present-day social setting in the planning area.

Archaeological evidence suggests that San Juan County and the larger Four Corners Area was inhabited by Native Americans called Ancestral Pueblo People (Anasazi) between the years 1 and 1300 AD, with some evidence dating back as early as 1500 BC (BLM 2005i). The Ancestral Pueblo People successfully farmed the Four Corners Area for over a thousand years but evidence suggests they left the region by 1300 AD. Other Native Americans occupied the San Juan County area after the Ancestral Pueblo People, including the Utes, Paiute and Navajo. Remains of Native American dwellings and rock art throughout the Monticello PA provide glimpses into the history of the cultures that once inhabited the region.

Spanish explorers entered into the San Juan County area as early as 1765 looking for a route from Santa Fe, New Mexico to California. Traders and trappers later used the trail established by the explorers as a route to the valley of the Great Salt Lake. This trail, now known as the Old Spanish National Historic Trail, was the first known commercial route in Utah. The Trail entered San Juan County at the Utah/Colorado border, along the current US Highway 491 and went northward along the present day US Highway 191, crossing the Colorado River just outside of Moab, Utah (San Juan County 2002b).

In the late 1800s, cowboys, outlaws, gold-seekers, ranchers and farmers began arriving to the area. As the Anglo settlers began to homestead the San Juan County area and other lands throughout the west, conflicts between Native Americans and the new settlers arose. The conflicts resulted in the creation of reservations for the Ute and Navajo people. The Navajo Reservation was established in 1868 and encompasses the southern portion of San Juan County. The Ute Reservation at White Mesa was established in 1920 (San Juan County 2002b).

3.13.3 RECENT REGIONAL HISTORY

San Juan County's twentieth century is illustrative of a boom-and-bust economy. As people began to homestead the west at the recommendation of the federal government, many individuals were hopeful they could farm and ranch in the arid region. The grazing and farming took a toll on the landscape, making continued practices difficult. Agricultural success ebbed and flowed throughout the twentieth century and by the end of the century self-sufficient agricultural practices proved challenging. The 1990 census indicates that fewer than 50 people in San Juan County claim agriculture is the sole support for their livelihood (McPherson 1995).

Mining in San Juan County has also seen several booms and busts. Beginning in the late nineteenth century people seeking gold and silver entered the area, but the inability to "strike it rich" in the area prompted their departure. Copper became the next sought-after mineral and in 1918 the first copper mill began operating. Oil drilling operations were also occurring around this time, but did not prove fruitful for many operators. Mining operations slowed significantly by the mid-1920s and it was not until demand for uranium in World War II revived the mining industry. The Monticello Mill and the Rio Algom Mill were established in the County to process

uranium and vanadium (McPherson 1995). By the early 1980s, demand for uranium decreased and both of the mills had closed.

3.13.4 CURRENT DAY SOCIAL AND ECONOMIC CONTEXT

3.13.4.1 SOCIAL SETTING

Today, San Juan County is a collection of rural communities characterized by pastoral landscapes, open space, and small town qualities. The area's historical link to agricultural endeavors has shaped the communities' land-based values. Many of the area residents are of Mormon pioneer heritage, devoutly religious, and independent (San Juan County 2002b). The County's residents are interested in maintaining the rural lifestyle, coupled with strong family values, and a quality environment that has been so much a part of their past (San Juan County 1996).

Maintaining the rural character of San Juan County has been a struggle for area residents. Most agricultural producers are no longer able to support themselves on farming and ranching alone. And because federal, state, and tribal governments manage over 90 percent of the land, residents believe that much of the County's potential wealth is tied to its public lands. Therefore, communities are very interested in public land use management decisions.

San Juan County is a collection of diverse communities. Blanding and Monticello are the only incorporated towns and together contain the majority of the non-Reservation population of the County. Oljato, Aneth, Montezuma Creek, Navajo Mountain, and Halchita are all communities within the Navajo Reservation. White Mesa is associated with the Ute tribe. Schools are a large part of the identity in the County. Each community is described in Table 3.25.

Table 3.25. Communities in San Juan County

Community	Population	Structure	Characteristics
Blanding	3,162	Incorporated	Largest community in San Juan County. Higher education including College of Eastern Utah – San Juan branch, and Utah State University Education Facility. Edge of Cedars State Park, Dinosaur Museum.
Monticello	1,958	Incorporated	Serves as the County seat, home of government offices for San Juan County. Location of BLM Monticello FO, and the Monticello Ranger District of the United States Forest Service.
Monument Valley and Oljato	864	Unincorporated town; Navajo Chapter Headquarters; part of Navajo Nation	Communities function together. Monument Valley is a Navajo Tribal Park known for scenic beauty. Gouldings Lodge associated with the Park is the major employer for the community.

Table 3.25. Communities in San Juan County

Community	Population	Structure	Characteristics
Aneth	598	Unincorporated town; Navajo Chapter Headquarters; part of Navajo Nation	Home to Aneth oil field, a major producer of oil and gas in Western states. Location of Navajo boarding school.
Montezuma Creek	507	Unincorporated town; Part of Navajo Nation	Aneth oil field is close and provides jobs. Hovenweep National Monument is 20 miles northeast.
La Sal	400	Unincorporated town	Closely tied to Moab and Grand County. Settled originally for ranching, has experienced the boom and bust cycles of mining, and now most people work in Moab.
Navajo Mountain	379	Unincorporated town; Navajo Chapter Headquarters; part of Navajo Nation	Remote from anywhere in San Juan County
Mexican Hat and Halchita	358	Unincorporated town; Navajo Nation	Mexican Hat is on the north side of the San Juan River and Halchita is on the south side. Halchita is part of the Navajo Nation.
Bluff	320	Unincorporated town	On the bank of San Juan River. First Anglo-settled community in the County. Historic community with many Victorian homes still in use. Staging area for San Juan River trips. Many outfitters based in Bluff.
White Mesa	277	Unincorporated town, governed by Ute Council; Ute Reservation	Branch of Ute Mountain Tribe headquartered in Colorado. Sits between Blanding and Bluff.
Spanish Valley	181	Unincorporated town	Closely aligned with Moab and Grand County, although lies within San Juan County
Eastland	130	Unincorporated town	Settled as a farming community and is still surrounded by cultivated fields.
Halls Crossing	89	Unincorporated town	On the shores of Lake Powell. Employment is dependent on Lake activities.

Source: San Juan County 2002b.

3.13.4.2 ECONOMIC SETTING

This section describes existing economic conditions surrounding the Monticello PA and provides a baseline for assessing the potential impacts of the RMP alternatives. Based on the implementation of a particular alternative, the BLM can affect (directly or indirectly) the local economic conditions of the nearby communities. For example, local employment and income levels can be directly impacted by changing the way it manages natural resources or grazing allotments. The construction of new recreation trails or facilities, road maintenance, and other activities can also influence local socioeconomic conditions described in this section. The BLM can also indirectly influence local economic conditions by pursuing new management strategies that alter visitation levels, thus affecting total future spending by recreationists and other tourists (BLM 2004e). The demographic information and selected economic indicators of social well-being (poverty, unemployment, and per capita household income) are also presented in this section to help provide context and put local conditions in perspective relative to statewide conditions.

3.13.4.2.1 POPULATION

The Utah Department of Workforce Services reports that San Juan County has posted positive population growth numbers for every decade of the twentieth century. In 1900 the County had 1,023 residents and by 2000 the population grown to 14,413. During the twentieth century of growth the County did experience a number of population booms. Throughout the 1950s and the Cold War the demand for the County's uranium caused the population to double in just ten years. San Juan County's population boomed again in the 1970s as the nation's high energy prices made the development of the area's natural resources profitable (Workforce Services 2005). As mining jobs decreased in the 1980s out-migration of the population occurred.

The Governor's Office of Planning and Budget (GOPB) for the state of Utah projects that population in 2030 will reach 19,459. The population growth rate of San Juan County is slower than that of the state of Utah: approximately 1% annual growth in the County, versus 2.3% annual growth in the state. Long-term trends show steady growth: from 1970 to 2000 San Juan County grew by 4,680 people, a 48% increase in population. Much of the recent growth in San Juan County has been in southern Spanish Valley, adjacent to Moab; this area is located within the boundaries of the Moab Field Office. The 2004 population estimate data shows San Juan County has a total of 14,353 residents, slightly below that 2000 Census data (Workforce Services 2005).

The median age for the County is 25.5, similar to the state median age of 27.1. Table 3.26 shows population characteristics in San Juan County. 43% of the population is under 20 years old, a 4% decrease since 1990.

The 2000 Census indicated that American Indian/Alaskan Native made up 1.33% of the Utah population. In San Juan County the American Indian/Alaskan population is more than half of the total population at 55.7% (Table 3.27). Population on the Navajo Nation has grown steadily over the last two decades. In 1980 population on the reservation was 4,554, 5,252 in 1990 and 6,280 in 2000. The Navajo Reservation has experienced strong growth in its middle-aged population and slow growth in its youth population; this growth is contrary to many Native American groups (GOPB 2002). In 2000, nearly half of the population on the Reservation was between 20

and 65 years old (U.S. Census Bureau 2000). Table 3.27 shows steady increase in overall San Juan County population according to race and ethnicity.

Table 3.26. Population by Category, 1990 and 2000

	1990	% of Total	2000	% of Total	% Chg, 1990–2000	% Chg per Year, 1990–2000
Population	12,621		14,413		14	1.4
Male	6,245	49	7,190	50	15	1.5
Female	6,376	51	7,223	50	13	1.3
Under 20 years	5,898	47	6,176	43	5	.5
65 years and over	890	7	1,214	8	36	3.6
Median Age			25.5			

Source: Sonoran Institute 2003.

Table 3.27. San Juan County Population by Race and Ethnicity

	1990		2000	
	Total Population	Percent of Total	Total Population	Percent of Total
RACE				
White	5,501	43.6	5,876	40.8
Black	11	0.1	18	0.1
American Indian/Alaskan Native	6,859	54.3	8,026	55.7
Asian	14	0.1	25	0.2
Hawaiian/Pacific Islander	26	0.2	5	0.0
Other	210	1.7	245	1.7
Two or more races	NA	0.0	218	1.5
Total	**12,621**	**100.0**	**14,413**	**100.0**
ETHNICITY				
Hispanic	440	3.5	540	3.7
Non-Hispanic	12,181	96.5	13,873	96.3
Total	**12,621**	**100.0**	**14,195**	**100.0**

NOTE: Population is broken out by both race and ethnicity because Hispanics can be of any race.
Source: GOPB 2002.

3.13.4.2.2 UNEMPLOYMENT

Unemployment levels are frequently used as an indicator for economic strength of the local economy and social well-being of its population. Table 3.28 presents the size of the labor force and average annual unemployment rates in San Juan County. State of Utah unemployment information is given for comparative purposes.

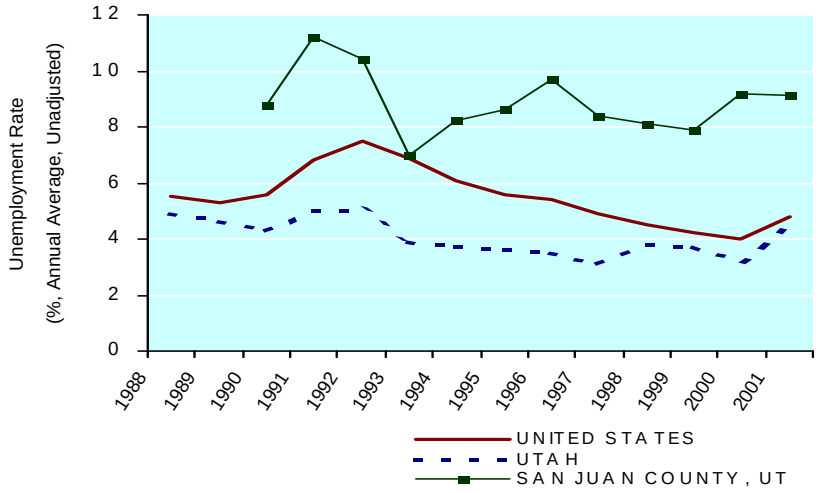
Table 3.28. Unemployment Rates

	1990		2000		2004 (projected)	
	Labor Force	Unemployment Rate	Labor Force	Unemployment Rate	Labor Force	Unemployment rate
San Juan County	4,032	7.4%	4,754	9.2%	4,682	11.0%
State of Utah	814,000	4.3%	1,143,200	3.3%	1,208,400	4.7%

Source: Workforce Services 2005.

Unemployment in San Juan County is higher than the state or national average. In 2004 the unemployment rate in San Juan County was 11.0%, compared to 4.7% for the state and 5.3% for the nation. Employment grew by roughly 1.8% from 2000 to 2004, but the rise in jobs did very little to decrease the rising unemployment rate. Slow job growth and high unemployment levels are symptomatic of an economic community that is working to stabilize itself (Workforce Services 2005). Figure 3.5 shows the fluctuation in unemployment patterns in the County.

Over the past two decades, the Navajo Reservation has consistently experienced unemployment rates higher than the state average. In 1988, the unemployment rate in Utah was approximately 5.5%; in San Juan County it was approximately 8%, and on the Reservation it was almost 40%. This rate decreased to just above 30% in 2000 (U.S. Census Bureau 2000).



Source: Sonoran Institute 2003.

Figure 3.5. Unemployment.

3.13.4.2.3 PER-CAPITA PERSONAL INCOME[3]

Personal income is another indicator of social well-being, as income can be directly related to an individual's or a community's quality of life. Table 3.29 shows per capita personal income (i.e., total personal income divided by population) in San Juan County and in Utah. Per capita personal income in the County has been consistently lower than the state average. In 2003 San Juan County had the lowest per capita income in the state.

Table 3.29. Per-Capita Personal Income

Area	1980	1990	2000	2003
San Juan County	$5,841	$8,955	$12,881	$14,363
Navajo Reservation	$4,500 (approx)	$5,300[1] (approx)	$6,200 (approx)	--
State of Utah	$8,510	$14,913	$23,878	$25,407

Source: U.S. Department of Commerce 2005; GOPB 2003.

[1] Data from 1999.

-- = no data available.

3.13.4.2.4 POVERTY

The poverty rate of an area is an estimate of the percentage of the area's total population living at or below the poverty threshold established by the U.S. Census Bureau. Table 3.30 presents poverty rates in San Juan County, with statewide figures included for comparative purposes.

Table 3.30. Poverty Rates

Area	1989	2003
San Juan County	36.4%	22.6%
State of Utah	11.8%	10.0%

Source: U.S. Census Bureau 2005.

Poverty rates for San Juan County are significant higher than the state average. Although the rate decreased significantly from 36.4% in 1989 to 22.6% in 2003, it is more than double the state's overall rate. The race with the highest poverty rate in San Juan County is the "American Indian and Alaskan Native," with 3,809 (48%) of the total race under the poverty level in 1999 (Sonoran Institute 2005).

3.13.4.2.5 HOUSING

According to the 2000 Census, San Juan County has a total of 5,449 housing units, 75% of which are occupied. Of these units, 13.5% are for seasonal and recreational use, and 20% are renter-

[3] Personal income is the income that is received by persons from all sources. It is calculated as the sum of wage and salary disbursements, supplements to wages and salaries, proprietors' income with inventory valuation and capital consumption adjustments, rental income of persons with capital consumption adjustment, personal dividend income, personal interest income, and personal current transfer receipts, less contributions for government social insurance. This measure of income is calculated as the personal income of the residents of a given area divided by the resident population of the area. In computing per capita personal income, BEA uses the Census Bureau's annual midyear population estimates (U.S. Department of Commerce 2005).

occupied. Average household size is 3.57 residents, just above the state's average. The median value of owner-occupied housing in 2000 was $68,400, up from $52,833 in 1990. Table 3.31 shows housing population trends in San Juan County.

Table 3.31. Population by Household Type in San Juan County, 2000

	County	% of Total	State	% of Total
Total Housing Units	5,449		768,594	
Total Occupied Housing Units	4,089	75.0	701,281	91.2
Seasonal, Recreational, or Occ Use	733	13.5	29,685	3.9
Vacant Housing Units	1,360	25.0	67,313	8.8
Homeowner Vacancy Rate (%)	2.1%		2.1%	
Rental Vacancy Rate (%)	12.8%		6.5%	
Housing Tenure				
Total Occupied Housing Units	4,089		701,281	
Owner-occupied Housing Units	3,242	79.3	501,547	71.5
Renter-occupied Housing Units	847	20.7	199,734	28.5
Avg Household Size - Owner Occupied	3.57		3.3	
Avg Household Size - Renter Occupied	3.07		2.8	

Source: Sonoran Institute 2003.

Yet another indicator of economic strength is the amount of new residential building permits granted for a particular area. An increase or decrease in the amount of building permits granted reflects the growth of a community and allows planners and local governments to plan for the amount of necessary infrastructure (i.e., roads, water, sewer, and power).

Residential building permits for San Juan County have increased tremendously from five permits issued in 1991 to 76 permits in 1998. The amount of building permits has dropped slightly since then. There was a small rise in the number of permits issued for new dwelling units in 2004 as the County issued 61 permits, up from 55 in 2003. Residential construction in the unincorporated areas of San Juan County has consistently exceeded that within the cities of Blanding and Monticello. For example, in 2004 five permits were issued for dwelling units in Blanding, three permits were issued for Monticello and 53 permits were issued for unincorporated areas in the County (Workforce Services 2005).

It should be noted that residential growth has been particularly strong in the Spanish Valley area, just south of Moab, Utah. Most of the growth occurring in this San Juan County area is affected primarily by the land management decisions of the Moab FO's RMP, whose office covers the northern third of San Juan County. For general housing conditions in the Spanish Valley area please see the Moab RMP.

3.13.4.2.6 EMPLOYMENT

Local and regional employment levels could be affected directly or indirectly by the implementation of the updated RMP. The following information reflects trends in employment since the 1970s.

In 2000, 5,618 jobs were identified in San Juan County. Wage and salary employment included approximately 79% of the total market while the remaining 21% was from proprietorships, including sole ownerships, partnerships and tax-exempt cooperatives. The Services and Professional Sector is the largest employment sector in the county comprising 46% of the market. The Government sector accounts 30% of the total employment. The remaining jobs are in Farm and Agriculture Services, Mining and Manufacturing. Note that the Services and Professional sector includes services, retail trade, finance industries, transportation and public utilities, and wholesale trade (Table 3.32).

Table 3.32. Employment by Industry – Changes from 1970 to 2000 – SIC Codes

	1970		2000		New Employment	
	Jobs	% of Total	Jobs	% of Total	Jobs	% of Total
Total Employment	2,818		5,618		2,800	
Wage and Salary Employment	2,272	80.6	4,413	78.6	2,141	76.5
Proprietors' Employment	546	19.4	1,205	21.4	659	23.5
Farm and Agricultural Services	414	14.7	N/A	N/A	N/A	N/A
Farm	398	14.1	318	5.7	-80	NA
Agricultural Services	16	0.6	N/A	N/A	N/A	N/A
Mining	423	15.0	313	5.6	-110	NA
Manufacturing (incl. forest products)	147	5.2	220	3.9	73	2.6
Services and Professional						
Transportation and Public Utilities	125	4.4	181	3.2	56	2.0
Wholesale Trade	N/A	N/A	101	1.8	N/A	N/A
Retail Trade	335	11.9	763	13.6	428	15.3
Finance, Insurance and Real Estate	N/A	N/A	N/A	N/A	N/A	N/A
Services (Health, Legal, Business, Others)	378	13.4	1,509	26.9	1,131	40.4
Construction	147	5.2	303	5.4	156	5.6
Government	791	28.1	1,678	29.9	887	31.7

Agriculture Services include soil preparation services, crop services, etc. It also includes forestry services, such as reforestation services, and fishing, hunting, and trapping. Manufacturing includes paper, lumber and wood products manufacturing.

SIC = Standard Industrial Classification System (SIC) used to categorize employment trends over time

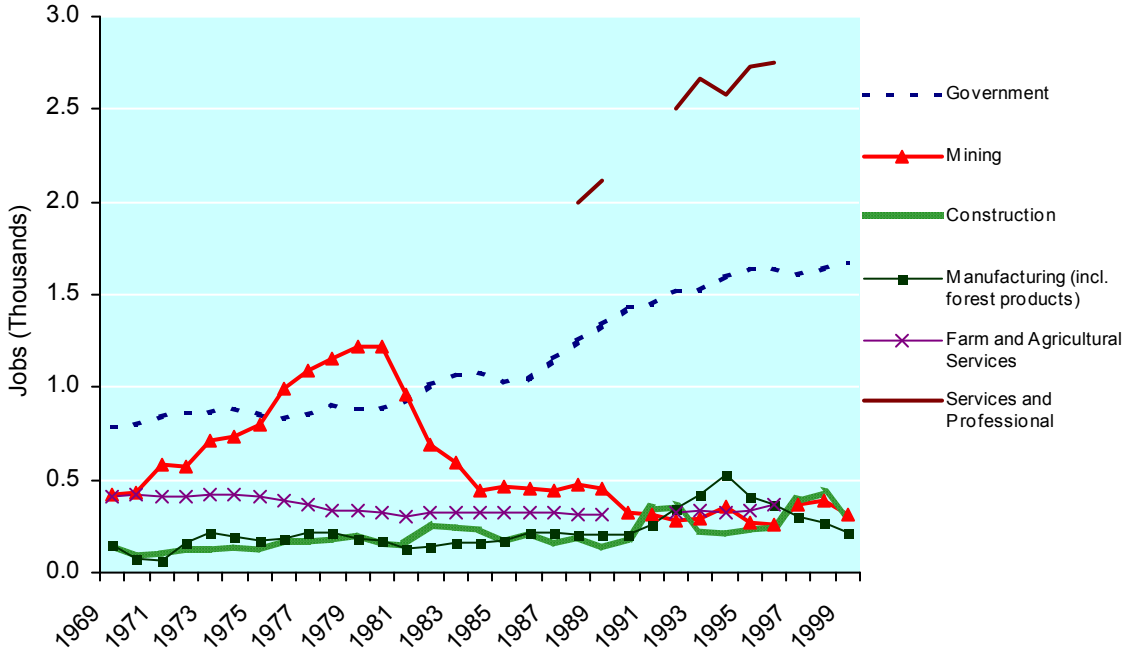
Source: Sonoran Institute 2003.

Characteristic of the rest of the state as well as the country, San Juan County has seen a large increase in the Services and Professional sector in the last two decades. The decrease in mining and farming operations, and the growth in the tourism as well as the overall growth in population can be largely accredited for the increase. The Services and Professional sector is expected to see continued growth.

Shift in Regional Economic Activity

Perhaps more important to understanding the economy of San Juan County are trends in economic activity. Between 1970 and 2000, the San Juan County economy experienced a dramatic shift in job base. As shown in the graph below, the economy shifted away from mining in the 1980s. Discussions with the community identify this curve as the "mining bust." Ed Scherick, San Juan County Planner, in a memo to the BLM on February 10, 2004 states that "the real reason for the bust was due to the shift towards a cheaper free market. This market went to cheaper sources to purchase the product because of time and costly delays created by environmental regulation and lawsuits. Agencies also placed more and more restrictions on exploration and development on leaseholders until they reached a point of collapse."

As jobs were lost in mining and farming, jobs in trade and services increased dramatically (see Table 3.32). Despite the lack of data for the Service and Professional sector, Table 3.32 shows a general recognizable trend in this sector as an increase in jobs in trade and services over the last 15 years. The trade and service sector employees a large amount of people to support the tourism industry around Lake Powell; however, many of these jobs are seasonal in nature, with most lasting from April to mid October. Figure 3.6 illustrates the shift in employment sectors over time in San Juan County.



SIC= Standard Industrial Classification System used to categorize employment trends over time.
Source: Sonoran Institute 2003.

Figure 3.6. Job Base (by SIC code) in San Juan County, 1969–1999.

The shift in service related jobs over the last decade illustrates the County's growing tourism industry. While this shift has added new jobs and revenue for the County, many residents are somewhat apprehensive about dependence on such an industry. Community residents are

interested in maintaining a diverse economic base that includes grazing and agriculture, mineral extraction, oil and gas development, recreation and tourism (San Juan County 1996).

Direct BLM Contributions to Area Economic Activity

Under the federal Payment-in-Lieu-of-Taxes (PILT) Program, payments from the BLM and other federal agencies assist in financing the operations of local governments containing tax-exempt public lands. The annual PILT payments serve as an offset payment to the local governments because, unlike privately owned lands, taxes are not collected from federal lands. Payment amounts are based on a complex formula that considers among other things revenue sharing from the previous year, county population, and acreage of a county in federal ownership. The PILT payments may be used for any governmental purpose including improving schools, road, water, and other infrastructure systems.

Since nearly 61 percent of San Juan County is federally owned land, PILT payments are important to the area. PILT payments to San Juan County have continually increased in recent years. Table 3.33 shows PILT Payments to San Juan County between FY 2001 and FY 2005.

Table 3.33. PILT Payments to San Juan County

Year	Total PILT Payment
2001	$637,790
2002	$666,505
2003	$769,099
2004	$790,844
2005	$807,435
2006	$822,532

Source: USDI 2005.

3.13.4.2.7 Local Economic Activity Affected by BLM Management

Recreation and Tourism

The natural landscape in San Juan County has drawn visitors from all over the world. Visitors to the planning area are involved in a multitude of outdoor activities, including mountain biking, hiking, boating, camping, climbing, OHV driving and general recreation. These activities occur in this area because of the large expanses of vast and relatively undeveloped lands and because of the unique geologic and scenic beauty the area has to offer. Since the later part of the twentieth century, the tourism industry has become an increasingly important revenue generator for the County. Although many people feel that the County should maintain a diverse economy that does not depend too heavily on tourism, the economic value of the tourism industry is recognized as an important source of revenue (San Juan County 2002b). More information on the recreation and tourist destinations within the Monticello PA can be found in Section 3.10 – Recreation.

Visitation data can be used to illustrate tourism and recreation trend in the Monticello planning area. Visitation to the area, outside of BLM lands, follows the traveler-spending trend, as it increased throughout the 1990's and has leveled off in the new century. Table 3.34 shows

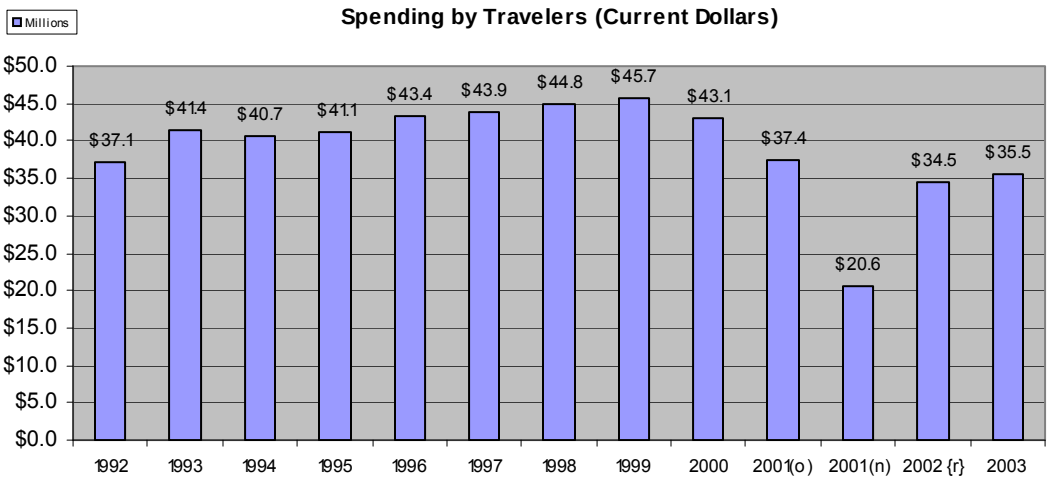
visitation numbers for several locations in San Juan County that can be used as indicators for visitation to the area.

Table 3.34. Visitation to Local Attractions in 2003

Count Location	Visitors
US 491 UT/CO Border	784,750
SR 163 UT/AZ Border	730,800
Glen Canyon N.R.A.	1,842,942
Monument Valley	218,000
Canyonlands National Park	386,985
Goosenecks State Park	57,098
Rainbow Bridge National Monument	98,865
Hovenweep National Monument	25,134
Natural Bridges National Monument	118,965

Source: Utah Division of Travel Development 2004.

Tourism is considered a resource-based industry, because the visitors who come to the County recreate on public lands and rivers. These same visitors contribute to the tax base of the County, which helps stimulate the local economy. Tourist spending, visitation to locations in close proximity, as well as tax collections from tourist activity are indicators of tourism in San Juan County and its importance to the overall economy. Traveler spending in San Juan County grew slowly and consistently throughout the 1990s. In 1990, traveler spending was slightly under $33 million. Spending peaked in 1999, at over $45.7 million and decreased to $35.5 million in 2003. Figure 3.7 shows traveler spending from 1990 to 2003.



Source: Utah Division of Travel Development 2004.

Figure 3.7. Tourist spending San Juan County, 1992–2003.

The Utah Division of Travel Development reports that travelers spent $35.5 million dollars in San Juan County in 2003 and 1,083 jobs in the County were travel and tourism related. Total tourism-related tax revenues for 2003 were estimated at $744,000, down from $879,000 in 2000 (see Table 3.36). It is important to note that many tourists spend their money in and around the city of Moab in Grand County, before traveling to San Juan County to recreate.

San Juan County ranked twelfth out of 29 counties in the state for gross taxable room rents at 7.2 million in 2003. Gross taxable room rents increased steadily from 1996 to 1999 and have dropped continually since 2000. San Juan County is also twelfth in collection of transient room tax: $218,400 in 2000. This number reached its peak in 1999 and has slowly dropped since then. San Juan County does not collect restaurant or car rental taxes (Utah Division of Travel Development 2004). Table 3.35 shows the contribution of tourism to the local economy.

Table 3.35. Tourism-Related Tax Trends in San Juan County

County Indicator	1996	2000	2003
Spending and Employment			
Spending by Traveler (millions)	$43.4	$43.1	$35.5
Travel and Tourism Related Employment (jobs)	800	816	1,083
Tourism Tax Revenues (000s)			
Local Tax Revenue from Traveler Spending	$902	$897	$744.2
Gross Taxable Room Rents	$8,065	$8,243	$7,278
Transient Room Tax	$241.9	$247.3	$218.4
Restaurant Tax	--	--	--
Car Rental Tax	--	--	--
Gross Taxable Retail Sales (millions)	**$84.0**	**$89.3**	**$85.2**

Source: Utah Division of Travel Development 2004.

Budget and Fee Collection for Programs

Due to a lack of base budgetary support, the Monticello FO has come to rely on the Federal Lands Recreation Enhancement Act, generally called the Fee Demonstration program, for needed funds. The Monticello FO collects fees for recreational use in several locations including the San Juan River, Cedar Mesa and fee collection sites at three campgrounds.

Services to the public are provided from these fee monies, such as maintenance of campgrounds, boat ramps, and restroom facilities; staffing of the San Juan River Ranger Station and the Kane Gulch Ranger station; and expenses related to the San Juan River and Cedar Mesa permit activities.

Table 3.36 below shows the Base Funding for the Recreation Program in 2003, and visitation and revenues from the Fee Demonstration projects.

Table 3.36. Base Funding for Recreation and Fee Demonstration Projects

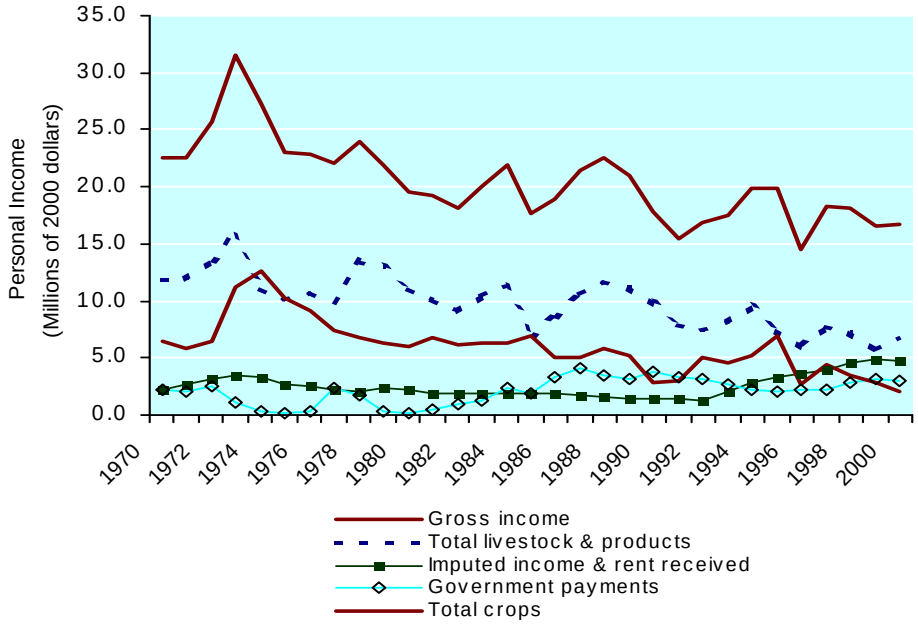
	2002 Visitation	2002 Revenues	2003 Visitation	2003 Revenues
San Juan River	13,048	$105,822	13,690	$116,591
Cedar Mesa	8,065	$65,236	8,283	$62,435
Monticello – Other	81,269	0	75,338	$39,487
Recreation - Base Funding				$98,000
Total	**102,382**	**$171,058**	**97,311**	**$316,513**

Source: BLM 2005c.

Agriculture and Grazing

The agriculture industry has declined in the last three decades. Several factors contributed to the decline, including drought, market prices, and world politics. In 1970, total net income from farming and ranching in San Juan County was $8.8 million. By 1985, that number had dropped to $-0.8 million and in 2000, to an all-time low of $-2.1 million. Negative net income means that production expenses were higher than gross income. In San Juan County, 41% of gross income is from livestock and products, and 12% of gross income is from crop production.

The remainder of income is from government payments and rents received. Figure 3.8 shows the decrease in personal income from farming and ranching.



Source: BLM 2004e.

Figure 3.8. Income from agriculture, 1970 to 2000.

The composition of livestock and crop production has also shifted in the last decade. In 1970, 52% of gross farm income was from livestock, while 28% was from crops. Gross income from crops has dropped by 16% since 1970. Currently, San Juan County's main agricultural contributors are wheat, pinto beans, safflower, and cattle (San Juan 1996).

While the income generated from farming and ranching has decreased significantly in past decades, the number of farms has actually increased. In 1982 the number of farms was 214 and in 2002 the number grew to 231. A significant number of farms in San Juan County are 1,000 acres or more and the average farm size has jumped from 1,696 acres in 1982 to 6,747 acres in 2002. Table 3.37 shows the trends agricultural data for San Juan County.

Table 3.37. San Juan County Agricultural Data

	1982	1987	1992	1997	2002
Farms (Number)	214	218	206	231	231
Land in Farms (Acres)	362,921	340,449	324,921	1,673,079	1,558,661
Average Size of Farm	1,696	1,562	1,577	7,243	6,747
Farms by Size					
1 to 9 Acres	17	12	10	8	16
10 to 49 Acres	17	22	24	21	38
50 to 179 Acres	22	27	26	36	43
180 to 499 Acres	30	29	29	39	32
500 to 999 Acres	31	29	30	29	19
1,000 Acres or More	97	99	87	98	83
Market Value of Ag Products Sold	8,367	9,370	8,990	9,097	7,516
Operators by Principal Occupation-Farming	120	123	112	115	140
Operators by Principal Occupation-Other	94	95	94	116	91

Source: Workforce Services 2005.

The BLM provides livestock grazing opportunities on public lands for local ranchers through the administration of livestock grazing. These permits generate local income and employment benefits to ranchers and their employees as well as other economic benefits to the County, including sales, income tax revenue, and indirect expenditures made by ranchers to local service or industry. Changes in Monticello FO grazing practices could potentially affect the local economy.

Livestock grazing allotments occur on approximately 99% of all BLM lands located within the Monticello FO boundary. An estimated 17,300 acres outside of grazing allotments are allocated to wildlife use and another 288 acres are administrative horse pasture. Within boundary allotments, 137,440 acres (6.1%) are unavailable for livestock grazing for resource protection.

Of the lands within grazing allotments, 1,761,351 acres (78%) are BLM lands. Of the 74 allotments currently permitted within the Monticello PA boundaries, cattle graze 61 allotments and cattle and horses graze 13 allotments. A total of 78,796 animal unit months (AUMs) are currently authorized (active). Of these, 77,365 AUMs (98 %) are used by cattle and 1,431(2%)

are used by horses. An additional 7,299 AUMs are allowed through exchange of use (other ownership). For more information on current grazing conditions, please see Section 3.7 – Livestock Grazing.

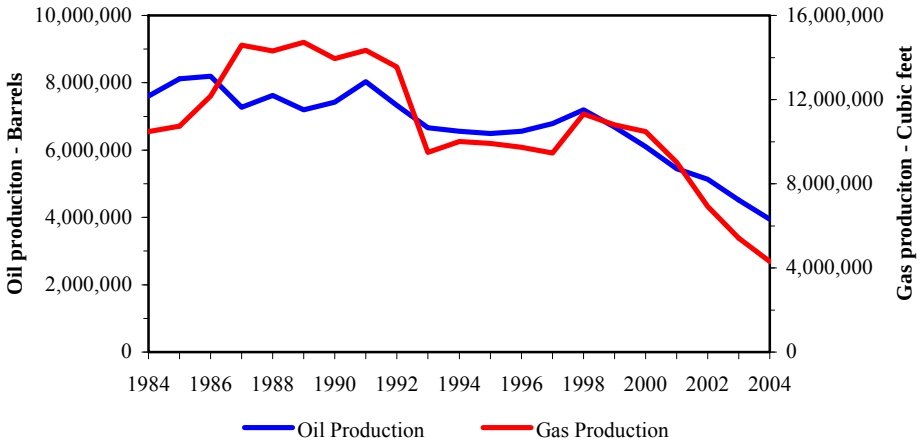
Mineral Resources

The contribution of mineral extraction to the San Juan County economy has fluctuated throughout the previous century. Since the demand for uranium decreased in the in the early 1980's, mineral extraction has contributed minimally to the local economy and local job base. In 2004, mining jobs contributed only four percent of non-farm jobs (163 out of 3,936 non-farm jobs) in the County (Workforce Services 2005). Oil and gas production within the Monticello planning area has generally been declining since 1984, but has decreased more rapidly since 1998 (See Figure 3.9). As of March 2005, there have been 3,267 wells drilled in the Monticello PA, of which 2,132 wells have been plugged and abandoned. Of the remaining 1,135 active wells, 508 are currently producing oil and gas. Approximately, 41 percent of the wells drilled in San Juan County during the period of 1991-2004 were dry (BLM 2005h).

The economic benefit to San Juan County of oil and gas activities comes primarily in the form of mineral lease payments and royalties from the state of Utah to the County. The state of Utah collects payments from a variety of sources, including lease and royalty payments made to the BLM and to the Minerals Management Service of the Department of the Interior. Royalties are based on the sale of oil and gas and increase or decrease based on quantity of production and prices. Approximately one-half of the payments received by these agencies are remitted to the state of Utah, which in turn distributes about one-half to the counties. The state of Utah payments to the counties are based very closely on actual leasing and production activities within each county.

According to the Mineral Management Service, in the 2000 fiscal year, San Juan County reported a total of $5,955,862 in sales volume for gas, and $633,808 in sales volume for oil. Royalty values to the state of Utah were $1,848,180 and $1,638,434, respectively. The amount disbursed to the state was $924,590 for gas and $819,217 for oil (USDI 2000). Oil and gas production has been steadily declining since 1990. In 1990 San Juan County produced 7,774,204 barrels of oil and 29,580,534 thousand cubic feet (MCF) of gas. In 2004 the County produced 3,986,802 barrels of oil and 17,392,707 MCF of gas. Figure 3.9 illustrates oil and gas production trends in San Juan County.

A potential benefit to San Juan County from oil and gas and mineral production is in the jobs created, both in direct production activities and associated services. Many of the current oil and gas activities are located on the Utah/Colorado border and some of those employed live in western Colorado. The Lisbon Valley Copper Mine, located on Moab FO lands, has just begun production and is expected to employ approximately 145 people and produces more than 12,500 tons of ore per day (BLM 2004e). The operation of the mine is anticipated to have positive direct and indirect economic effects on San Juan and Grand Counties. The White Mesa Mill employs approximately 40 people and most are living in or around the town of Blanding.



Source: BLM2005d.

Figure 3.9. Production from oil and gas wells in the Monticello FO.

The Utah Permanent Community Impact Fund Board (CIB) provides loans and grants to agencies within the state that may be socially or economically impacted by mineral resource development on federal lands. In 2005 San Juan County received $2,536,232 in loans and grants from the CIB. From fiscal year 2001 – 2005 the County received $3,027,588 (Department of Community and Culture 2005). The source of CIB's funding is a portion of the federal mineral lease royalties returned to the State of Utah by the federal government. The money from the CIB to fund various infrastructure projects is not directly related to the amount of production per county, but rather on applicant eligibility determined by the Board.

A recent increase in the price of uranium has led to a surge of filings for uranium claims within the Monticello PA. According to the Mineral Potential Report, the price of uranium was $29.00 per pound in May of 2005 (BLM 2005b). While the thousands of claims filed in 2004 and 2005 do not necessarily predict a resurgence of a uranium boom in the area, exploratory holes are being drilled and the potential for impacts to socioeconomics could result from uranium extraction on BLM lands.

3.13.4.3 Tribal Interests

The high acreage of Navajo lands is a significant factor in the social and economic conditions of the County, as in the case of San Juan County's unique tax laws regarding the Reservation. Oil and gas companies as well as other Anglo businesses on the reservation are taxed by the county; however, the personal property of tribal members (homes, vehicles) on the reservation do not contribute to the county's tax base. The reservation receives revenue from oil and gas lease fees on its land; however, it is not eligible to receive royalties generated from oil and gas production. The Navajo Tribe Utilities Authority (NTUA) provides infrastructure services such as sewer and water on the reservation, as opposed to the county services. San Juan County also does not provide law enforcement on the reservation, however, the County search and rescue is used by the reservation.

Over the last 10 years, the Navajo Nation has gone from living in scattered units to living in more consolidated centers, such as Aneth, Montezuma Creek, and Shiprock, New Mexico. This shift has made it easier to make essential services more available to tribal members. However, not all Navajos have made this shift. More traditional people and the elderly have been more reluctant to change their living circumstances.

The Navajo Nation currently depends less on grazing of sheep and the sale of sheep products than in the past, and more on wage work. A large percentage of available jobs are government jobs, and many people travel off the Reservation for this work. Crafts have been an important way for Navajos to augment wage income, and most of the resources needed are found on public lands. These resources include firewood, pinyon nuts, willow for baskets, cottonwood root for carving, and plants to make paint pigment. Continued use of these lands and its resources are important in sustaining this aspect of Navajo livelihood.

According to the public scoping meetings and consultation with Tribal leaders, access to sacred sites, gathering of traditionally used plants and minerals, tribal consultation, and the protection of cultural resources (including places, burials, and plants) are issues requiring attention by the Monticello FO as land management decisions are made (SWCA 2004).

3.13.5 Environmental Justice

3.13.5.1 Background and Regulatory Guidance

"Environmental justice" refers to the fair and equitable treatment of individuals regardless of race, ethnicity, or income level, in the development and implementation of environmental management policies and actions. In February 1994, President Clinton issued Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority and Low Income Populations." The objective of this EO is to require each federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of it programs, policies, and activities on minority and low income populations (EO 12898 1994).

Convened under the auspices of the EO, the Interagency Working Group defines Black/African American, Hispanic, Asian and Pacific Islander, American Indian, Eskimo, Aleut and other non-white persons as minority populations. Low-income populations are defined as persons living below the poverty level based on total income of $13,359 for a family household of four based on the 2000 census. Minority populations are identified as either: (1) the minority population of the affected area exceeds 50 percent, or (2) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate geographic area (BLM 2002c).

3.13.5.2 Minority and Low-Income Populations

Land use management decisions within the Monticello planning area have the potential to directly or indirectly affect the County's minority and low-income populations.

Unique to Utah, populations in San Juan County typically known as "minority" comprise more than half of the population in San Juan County. San Juan County ranks first in the state for Native American/Alaskan Native population. San Juan County is home to 27 percent of the state's Native American population and at 55.7 percent of the County's total population, Native

Americans are not the minority. In Utah, 93.8 percent of the entire population identify themselves as white and 1.3 percent of the population identify themselves as Native American/Alaskan Native (GOPB 2002). Therefore, when considered state or region-wide, Native Americans are considered a minority race. Despite the population data that indicates non-minority status within San Juan County, Native Americans are considered a minority group for the purposes of achieving environmental justice during this RMP process.

As mentioned earlier within the context of "poverty" as an economic indicator for the economic well-being, persons in San Juan County living below the poverty line in 2003 was higher than the state average (22.6 percent vs. 10 percent). While San Juan County poverty trends show a decrease over time they remain higher than the state average. In 2003 the poverty level established by the by the Census Bureau for a family of four was $18,810 and in that year 31 percent or 4,443 people in San Juan County were living below the poverty level (U.S. Census Bureau 2006). In terms of race, the Native American population has the highest poverty level in the County at 48 percent or 3,809 individuals.

3.13.5.3 Additional Environmental Justice Issues

Potential land management decisions pertaining to woodlands in the Monticello PA could disproportionately affect the area's low-income and minority population. Navajo tribal members have been gathering wood in the Cedar Mesa area and using the resource as their primary heat source in the winter months. Unmanaged woodland harvesting has damaged surface cultural resource sites and created a network of unauthorized roads and trails that degrade visual quality, and which also may increase soil erosion and sedimentation, and affect overall watershed quality. Through the development of the RMP, it is anticipated that an organized and systematic plan will be developed to allow the Navajo Tribe to remove fuelwood and minimize future damage to the area.

Native Americans also want to be able to collect live cottonwood, however, this species is valuable for wildlife (T&E species) habitat, riparian function, and overall watershed health. It currently is at risk of being replaced by invasive species including tamarisk. The access and gathering of other plants traditionally used by tribes is an issue within the Monticello PA. Plants important to Native American's traditional cultural practices include: willows, sage, yarrow and squirrel tail (SWCA 2004).

3.14 Soils and Water

3.14.1 Resource Overview

Watershed incorporates several separate resources (soil, water, etc) and takes into consideration the interaction between them and their effect on conditions and processes occurring on the landscape, culminating with their impact on surface water quality. To assess these impacts, the resources that are discussed in this section are soils and surface water.

3.14.2 Watersheds and General Topography

The Monticello PA lies within portions of nine separate hydrologic subbasins (Table 3.38) located within the Upper Colorado hydrologic region (Region 14). The majority of the planning area is contained within the San Juan subbasin, though the northern portion of the planning area

is largely within the Kane Springs subbasin. Subbasin boundaries are shown on Map 42, and are described in Table 3.38.

Table 3.38. Subbasins within the Monticello PA

4th Order HUC	Subbasin Name
14030005	Upper Colorado – Dolores – Kane Springs
14070001	Upper Colorado – Dirty Devil – Upper Lake Powell
14080201	Lower San Juan – Four Corners
14080202	Lower San Juan – McElmo
14080203	Lower San Juan – Montezuma
14080205	Lower San Juan – Lower San Juan

The planning area is also within an administrative area designated by the Utah Division of Water Resources (UDWRe) called the Southeast Colorado River Basin. The boundaries of this area are a mix of political and geographic features, and almost completely overlap the Moab and Monticello planning areas.

The topography of the Monticello PA is defined largely by high mountains, steep escarpments, and incised canyons. The boundaries of the planning area itself are defined by the Colorado border to the east, the San Juan River and Navajo Indian Reservation to the south, and the Colorado River to the west. The northern boundary of the Monticello PA approximately follows the elevational divide along Hatch Point, and the Lower Lisbon Valley. Elevations vary from 3,700 feet above mean sea level (amsl) in the southwest near Lake Powell, to approximately 7,500 feet amsl near the base of the Abajo Mountains.

The Abajo Mountains themselves lie within the Manti-La Sal National Forest and are the highest topographic features in the planning area. Dry Valley extends north from the Abajo Mountains. The region west of the Abajo Mountains consists of a deeply incised plateau, and includes the Canyonlands National Park. The southern portion of the planning area that extends from the Abajo Mountains to the San Juan River is characterized by similar terrain, though less steep, and an overall loss in elevation to about 4,500 feet amsl at the River.

3.14.3 GEOLOGY

The geology of the Monticello PA is characterized primarily by the relatively flat stratigraphic sequence of sedimentary units dating from the Cretaceous, Jurassic, Triassic, and Permian and Pennsylvanian periods. The older Permian and Triassic rocks, which include the Cutler Group and the Moenkopi formation and the Chinle Formation, dominate the area between the Abajo Mountains and the Colorado River. This area is known as the Monument Upwarp, a late Cretaceous uplift that resulted in the erosional removal of the younger strata from the underlying rock. The remainder of the Monticello PA is still dominated by younger sedimentary units of Cretaceous and Jurassic age, which includes the Dakota and Morrison Formations and the Glen Canyon Group.

3.14.4 SOILS

Soils are the medium for plant growth, and soils provide nourishment for nearly all terrestrial organisms. Soils in the Monticello PA have developed in residuum (residual material from parent rock), colluvium (rock debris accumulated by gravity at the base of a cliff), alluvium (clay, silt, sand or gravel deposited by a stream or moving water), eolian sands (sands deposited by wind), and loess (yellowish brown loamy material deposited by wind). They are derived primarily from the sedimentary geologic deposits that occur throughout the Monticello PA. Some soils are derived from igneous parent materials that occur around the Abajo Mountains.

3.14.4.1 SOIL DATA

Soil mapping for the Monticello PA was prepared using the Soil Survey Geographic database (SSURGO) for Utah. NRCS Soil surveys for the Monticello PA include:

- San Juan Area 1962
- San Juan County, Central Part 1993
- Canyonlands Area 1991

3.14.4.2 SOIL CLASSIFICATION

Aridisols (dry soils), Mollisols (soils with a dark surface horizon), Entisols (geologically young soils), and Alfisols (forested soils) comprise the Monticello PA soil orders. Soils are classified or grouped into similar categories based on physical and chemical properties. A soil order is the broadest soil taxonomic grouping. The next, more refined soil taxonomic level is the suborder. The finest level of classification is the series or phase. For the purposes of this discussion soils are summarized by order and suborder. Within the Monticello PA there are generally 5 major soil orders represented and seven suborders. These are described and their acres summarized in Table 3.39.

Table 3.39. Soil Orders and Suborders, Monticello PA

Soil Order Soil Suborder	Acreage	Description
Aridisols (Dry soils)		
Argids	292,574 acres	Aridisols with clay accumulation in one or more subsurface horizons.
Orthids	354,966 acres	Aridisols without any exceptional characteristics.
Entisols (Developmentally young soils)		
Fluvents	26,170 acres	Entisols formed in a fluvial environment, such as a floodplain.
Orthents	926,129 acres	Entisols are recently developed soils without any exceptional characteristics. Orthents are typically formed in coluvial and aeolian deposits. These soils are the most widespread in the Monticello PA.

Table 3.39. Soil Orders and Suborders, Monticello PA

Soil Order Soil Suborder	Acreage	Description
Mollisols (Soils that have dark surface horizons due to organic matter accumulation)		
Borolls	10,464 acres	Mollisols formed under cooler temperatures.
Ustolls	18,258 acres	Dry Mollisols (precipitation occurs more frequently than in Xerolls).
Xerolls	29,909 acres	The driest Mollisols (precipitation occurs less frequently than in Ustolls).
Other Lands		
Rock Outcrop/ Rubblelands/ Water	354,966 acres	Includes all of these. No soil development is present on these lands; water makes up a small percentage of this acreage.

BLM 2001a.

3.14.4.3 Sensitive Soils

Soils in the resource area are composed of a wide variety of soil types and characteristics. Sensitive soils are those soils that have one or more limiting characteristics that would make them difficult to reclaim, if they were disturbed. Limiting soil chemical features include sodium, soluble salts, carbonates, and gypsum. Limiting soil physical characteristics include soils that are susceptible to wind and/or water erosion, and soils that are protected by biological soil crusts.

3.14.4.3.1 Erodible Soils

Wind erodible soils were determined from each mapping unit's wind erodibility group (WEG), which ranges from 1 (highest erodibility) to 8 (lowest erodibility). Soils with a WEG of 1-2 are highly erodible; soils with a WEG of 3, 4, and 4L are moderately erodible. Wind erosion strips the surface horizon of soil and nutrients necessary for seed germination and plant recruitment. Wind erosion can also result in the formation and expansion of sand dunes. Aeolian deposition can bury and kill biological soil crusts by prohibiting photosynthesis in cyanobacteria, lichens and mosses. In the Monticello PA, moderately and highly wind erodible soils occur over 986,765 acres and 65 acres, respectively (Map 40).

Water erosion causes the formation of rills and gullies, and can contribute to the sedimentation of streams and reservoirs. Two variables were factored into determining a soil's erodibility: the soil's erodibility constant (the "k" factor) and slope. Water erodible soils were divided into three classes: slightly, moderately, and highly erodible. The table below summarizes the erodibilty constants and slope parameters used to determine the level of erodibility.

Slightly water erodible soils totaled 1,789,629 acres, moderately water erodible soils totaled 8,659 acres, highly water erodible soils totaled 206,451 acres, and (Map 39).

Table 3.40. Soil Erodibility Factors

Erodibility	k Factor	Slope
High	>0.37 0.20 – 0.36	>10% > 30%
Moderate	0.20 – 0.36 <0.20	>10 to ≤30% > 30%
Slight	<0.20 any k-factor	10 to 30% < 10%

3.14.4.3.2 SALINE AND SODIC SOILS

Soil salinity can have significant impacts on soil erosion and reclamation potential. Erosion of saline soils can also have significant impacts on the water quality of downstream watersheds. Soil map units with (saline soils) exhibit electrical conductivity levels of eight decisiemens per meter (dS/m) or greater are shown in Map 37. Sodic soils are those soils with sodium adsorption ratios (SAR) greater than 13:1. The soil survey maps do not indicate that saline or sodic soils occur on BLM lands within the Monticello PA, but they are expected to occur within San Juan County (Maps 37 and 38).

3.14.4.3.3 RECLAMATION-SENSITIVE SOILS

Reclamation sensitive soils are those soils with one or more of the following characteristics that would make them difficult to revegetate if disturbance occurred on them:

- pH ≥ 9.0
- SAR ≥ 13:1
- Salinity ≥ 8 dS/m

As stated above, saline and sodic soils are not likely to occur within the Monticello PA, but there are some strongly alkaline soils present within the planning area. Due to the characteristics listed above, reclamation sensitive soils would be difficult to revegetate, due to their limiting soil chemical properties. The Monticello PA contains 286,736 acres of reclamation-sensitive soils (Maps 34, 37, and 38).

3.14.4.3.4 BIOLOGICAL SOIL CRUSTS

Many of the biotic communities found in the Monticello PA have evolved with the presence of biological soil crusts. Biological soil crusts include mats or filaments of cyanobacteria, lichens, and mosses. These crusts play a major role in reducing water and wind erosion and in preventing the establishment of invasive annual grasses (BLM 2001b).

The presence of biological crusts in arid and semi-arid lands have a significant influence on reducing soil erosion by both wind and water, fixing atmospheric nitrogen, retaining soil moisture, and providing a living organic surface mulch. They can be used as an indicator of rangelands' ecological health. Development of biological crusts is strongly influenced by soil texture, soil chemistry, and successional colonization by crustal organisms. The SSURGO data and NRCS soil surveys do not contain information on the amounts or types of biological crusts

that may occur in each soil mapping unit. However, extensive research on soil biological crusts has been done in nearby areas such as Canyonlands National Park and the Grand Staircase Escalante National Monument (see USGS 2007; Bowker et al. 2006).

3.14.5 SURFACE WATER SUPPLY AND USE

Surface water supply comes from larger regional rivers (Colorado and San Juan rivers), and those intermittent and perennial streams in the Monticello PA that originate in the Abajo Mountains. Runoff occurs from snowmelt and from brief intense storms that generally occur in late summer. Most of the surface runoff occurs from snowmelt during the months of April, May, and June. Stream segments farther away from the mountains, or with headwaters originating at lower elevations, are less likely to be perennial and more dependent on summer precipitation. Diverted surface water in the FO planning area is used for agricultural, municipal, industrial, and recreational purposes.

Major creeks, rivers, and lakes are summarized in Table 3.41. Average annual streamflows for some of the creeks and rivers are included in Table 3.42.

Table 3.41. Major Waterbodies Within the Monticello Planning Area

Subbasin	Major Waterbodies
Upper Colorado – Dolores – Kane Springs	Colorado River, Indian Creek
Upper Colorado – Dirty Devil – Upper Lake Powell	Colorado River, Lake Powell
Lower San Juan – Four Corners	San Juan River, Butler Wash, Comb Wash, Recapture Creek, Recapture Reservoir, Blanding City Reservoirs
Lower San Juan – Montezuma	Vega Creek, Verdure Creek, Montezuma Creek, Keller Reservoir, Lloyd's Lake
Lower San Juan – Lower San Juan	San Juan River, Lime Creek, Lake Powell

Table 3.42. Annual Mean Streamflow of Selected Waterbodies

Major Waterbodies	Flow Regime	Avg. Annual Streamflow (cfs) [1]	Period of Record
Colorado River	Perennial	12,500	1928-1982
Indian Creek	Perennial	4.2	1950-1990
Montezuma Creek	Intermittent	11.8	1986-1992
Recapture Creek	Intermittent	1.3	1966-2001
San Juan River	Perennial	2,300	1915-2001

[1] Based on published USGS data (USGS 2006).

The largest use of surface water is for agricultural irrigation for approximately 5,100 acres of land, diverting an average of 17,000 acre-feet annually. Of this diversion, approximately 9,700 acre-feet are depleted through evapotranspiration with the rest returning to the hydrologic system as runoff or infiltration. These numbers are based on data compiled for a region roughly equivalent to the planning area for the year 1996 (UDWRe 2000).

Municipal and industrial (M&I) surface water use in San Juan County accounted for diversions of approximately 3,500 acre-feet in 1996 (UDWRe 2000). Industrial water uses in San Juan County account for approximately 30 percent of the M&I diversions and include mining and mineral processing, lumber processing, construction and rock products, and meat processing.

Intermittent and perennial surface water flow also provides the basis for wet and open areas and supports riparian vegetation. BLM surface water developments include stock ponds, erosion control structures, rainfall catchments, guzzlers for wildlife, and spring developments.

There is no irrigated agriculture associated with BLM lands within the Monticello PA, with the exception of minor acreage being farmed in trespass.

3.14.6 Municipal Watersheds

Some municipalities within the planning area rely on surface water as part of their water supply, with some parts of the watershed administered by BLM. Most of the culinary water supplied by Blanding is surface water from Indian, Johnson, and Recapture creeks, and all of the culinary water supplied by Mexican Hat is surface water from the San Juan River. Culinary or potable water supplied by Bluff, Eastland, Monticello, and the San Juan Special Services District all originates as groundwater derived from springs or wells.

Forty-five parcels within the planning area have been withdrawn by BLM for public water preservation. These lands total approximately 3,800 acres, and are summarized in Table 3.43.

Table 3.43. Summary of BLM Public Water Reserve Lands

Parcel	Acres
Alkali Canyon (2)	82.64
	78.75
Arch Canyon	85.64
Cigarette Spring Cave	155.14
Collins Spring (2)	87.35
	103.61
Cottonwood Wash (3)	38.03
	39.28
	35.46
Cross Canyon (3)	40.50
	39.31
	40.10
Dark Canyon	41.04
Dry Wash	43.90
East Canyon Wash (2)	35.43
	83.74
Irish Green Spring (3)	120.70
	38.51
	40.15

Table 3.43. Summary of BLM Public Water Reserve Lands

Parcel	Acres
Lime Creek (4)	72.42
	40.21
	38.59
	40.79
Mike's Canyon (2)	151.45
	243.93
Peter's Canyon	41.30
Picket Fork	159.75
Prehistoric Cave Spring	155.84
Recapture Creek (3)	20.38
	43.70
	37.15
Red House Spring	239.56
Ruin Canyon (2)	73.22
	222.76
San Juan River (2)	41.10
	35.11
Sweet Alice Spring	40.24
Tank Wash	20.27
The Needles	186.10
The Tank	124.09
Turner Water Canyon (2)	156.44
	40.53
Wild Cow Point (2)	44.58
	138.61
Woodenshoe Buttes	157.50
Total	**3,794.9**

3.14.7 Surface Water Quality

The U.S. Geological Survey (USGS), BLM, and the Utah Department of Environmental Quality (UDEQ) implement surface water quality sampling programs within the Monticello PA. The USGS sampling program regularly monitors only the major rivers within the planning area including the Colorado and San Juan rivers. The USGS monitoring program has been continuously conducted for over sixty years. The UDEQ and BLM sampling programs support state water quality assessments and are more extensive, including many of the smaller creeks, springs, and lakes. The UDEQ sampling program was started in 1997 as the basis for Utah's water quality assessment required under Section 305(b) of the Clean Water Act, and the Section 303(d) list of impaired water bodies.

Impaired water bodies within the Monticello PA were limited to the Kane Springs and Lower San Juan subbasins. Within the Kane Springs subbasin, Indian Creek was identified as impaired with respect to pH. Within the Lower San Juan subbasin, Johnson Creek and North Creek are impaired with respect to pH, and Cottonwood Wash is impaired due to radionucleides (gross alpha) due to historical mining and mine tailings in the area. Within the Lower San Juan subbasin, Recapture Reservoir is impaired with respect to dissolved oxygen.

A full list of streams and water bodies located within the Monticello PA and listed on Utah's 303(d) list are included as Table 3.44, and shown in Map 41.

Table 3.44. Waterbodies on Utah's 303(d) List of Impaired Waters

HUC Code	Name	Stressor
14030005	Indian Creek from Newspaper Rock north boundary to headwaters	pH
14080201	Johnson Creek from Recapture Creek to headwaters	pH
14080201	Cottonwood Wash from Westwater to FS Boundary	Gross alpha[4]
14080201	Cottonwood Wash within FS Boundary	Gross alpha
14080203	North Creek from Montezuma Creek to headwaters	pH
14080201	Recapture Reservoir	Dissolved Oxygen

Source: UDEQ 2000a, UDEQ 2002.

Excess salinity is the major surface water quality problem in the planning area, and is of national significance under the Colorado River Basin Salinity Control Act of 1974. Salinity contributions occur from naturally occurring saline springs, from saline groundwater interception by streams, and from erosion of saline soils. During low flow periods, salt contribution comes from seeps, springs, and groundwater flow; during high flow periods, erosion of saline soils becomes a major contributor to salinity problems.

Based on the UDEQ sampling program, problem watersheds within the Monticello PA have been identified and are summarized in Table 3.45. Two parameters can be used to describe salinity impacts from each watershed: total dissolved solids, which are reflective of saline groundwater contribution as well as erosion of saline soils; and total suspended solids, which are an indicator or erosion potential of a watershed. Other stream systems within the Monticello PA may also have problems, but the data is not currently available to make this assessment.

[4] Gross Alpha is a radioactive contaminant sometimes found in water within or adjacent to historic mining districts.

Table 3.45. Watersheds with Potential High Salinity Contributions

Subbasin/Stream System Sampling Locations	**Avg. Total Dissolved Solids (mg/L)**	**Avg. Total Suspended Solids (mg/L)**	**Percent of Time TDS Limit Exceeded[1]**	**Percent of Time TSS Limit Exceeded[2]**	**Approximate Percent of Watershed on BLM Lands**
Lower San Juan/ Lime Creek					**90**
Lime Creek (Mouth)	2,750	20	92	8	
Four Corners/ Comb Wash					**80**
Comb Wash (Mouth)	1,300	900	44	56	
Comb Wash (Middle)	1,970	190	50	8	
Arch Creek	690	280	0	19	
Fish Creek	1,910	20	69	8	
Four Corners/ Cottonwood Creek					**45**
Cottonwood Creek (Mouth)	340	3,240	0	60	
Cottonwood Creek (Middle)	330	1,010	0	38	
Cottonwood Creek (Headwaters)	320	560	0	50	
Allen Canyon Creek	340	100	0	17	
Hammond Canyon Creek	310	250	0	25	
Four Corners/ Recapture Creek					**45**
Recapture Creek (Mouth)	1,440	1,840	45	64	
Bulldog Canyon Creek	410	180	0	15	
Montezuma/ Montezuma Creek					**40**
Montezuma Creek (Mouth)	1,400	1,750	64	100	
Montezuma Creek (Headwaters)	780	310	0	20	
Kane Springs/ Salt Creek					**25**
Salt Creek (Mouth)	4,350	10	100	0	
Salt Creek (Middle)	720	30	5	6	
Kane Springs/ Indian Creek					**55**
Indian Creek (Headwaters)	210	890	0	25	
N Cottonwood Creek	320	140	0	35	

Source: USEPA 2003d.

[1] Exceedance over 1,200 mg/L.

[2] Exceedance over 90 mg/L.

3.15 SPECIAL DESIGNATIONS

For the purposes of this analysis, Special Designations fall into three categories: Areas of Critical Environmental Concern (ACECs), Wild and Scenic Rivers (WSR), and Wilderness Study Areas (WSAs). (There is no designated wilderness within the Monticello PA). Special designations are applied to areas when they have certain resources or characteristics that require special management. Detailed descriptions of each of these areas and the criteria for proposing them are given below.

3.15.1 AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)

3.15.1.1 INTRODUCTION

FLPMA defines an ACEC as an area "within the public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards." Private lands and lands administered by other agencies are not included in the boundaries of ACECs.

FLPMA states that the BLM will give priority to the designation and protection of ACECs in the development and revision of land use plans (43 USC Sec. 1712(c)).

Regulations at 43 CFR 1610.7-2 require that for an area to be considered as a potential ACEC, both of the following criteria shall be met: 1) Relevance – There shall be present a significant historic, cultural or scenic value; a fish or wildlife resource or other natural system or process; or a natural hazard; and 2) Importance – the above described value, resource, system, process, or natural hazard shall have substantial significance and values. This generally requires qualities of more than local significance and special worth, consequences, meaning, distinctiveness, or cause for concern.

ACECs differ from some other special management designations in that designation by itself does not automatically prohibit or restrict other uses in the area. The special management attention is designed specifically for the relevant and important values, and therefore varies from area to area. The one exception is that a mining plan of operation is required for any proposed mining activity that would create surface disturbance greater than casual use within a designated ACEC (43 CFR 3809 Regulations).

The first step in the ACEC designation process is a call for nominations during public scoping for the RMP. The BLM, other federal and state agencies, special-interest groups, or members of the public may formally nominate an area for ACEC designation. The nominations are reviewed by a BLM interdisciplinary team to determine if the criteria of relevance and importance have been met. In addition, existing ACECs are subject to reconsideration when plans are revised.

If the relevance and importance criteria are met, the area is considered as a potential ACEC to be considered for ACEC designation during the RMP planning process or during the RMP amendment process. The signing of the Record of Decision (ROD) of the proposed RMP or RMP amendment by the BLM State Director officially designates an ACEC. Following ACEC designation, special management identified in the RMP or RMP amendment is implemented.

3.15.1.2 REGIONAL OVERVIEW

The Monticello PA has ten existing ACECs that were reconsidered during the RMP process for relevance and importance values along with a total of nine new internal and external nominations. Several of the new nominations overlapped existing ACECs. The determination rationale for all existing ACECs and new nominations, including those that did not meet relevance and importance criteria, are outlined in Appendix H – Special Designations, Relevance and Importance Criteria Evaluations.

3.15.1.3 EXISTING ACECS

With the approval of the San Juan RMP (BLM 1991a), BLM designated 10 ACECs, comprising approximately 513,452 acres, in the Monticello PA. These areas are recognized as requiring special management attention for the protection of cultural sites, scenic qualities, recreational opportunities, vegetation, or wildlife resources. With the exception of the Grand Gulch Plateau Cultural and Recreation Management Plan (BLM 1993c), separate management plans have not been developed for these ACECs. Instead, the special management conditions (from the 1991 San Juan RMP), direct how the existing ACECs are managed. When a project is allowed to proceed within an ACEC, these established management conditions must be followed, and are incorporated directly into the management prescription for the proposed project. The 10 existing ACECs are summarized in Table 3.46. Please see Map 43 for their locations.

Table 3.46. Monticello PA ACECs from 1991 RMP (Existing ACECs)

Existing ACECs	Value(s)	1991 RMP Acreage[1]	Existing ACEC Mapped Acreage per ArcView[2]
Alkali Ridge ACEC	Cultural	35,890	39,202
Bridger Jack Mesa ACEC	Near-relict vegetation	5,290	6,260
Butler Wash ACEC	Scenic	13,870	17,463
Cedar Mesa ACEC	Cultural, Scenic	323,760	295,335
Dark Canyon ACEC	Scenic	62,040	61,659
Hovenweep ACEC	Cultural, Habitat Management	1,500	1,798
Indian Creek ACEC	Scenic	8,640	8,509
Lavender Mesa ACEC	Relict vegetation	640	649
Scenic Highway Corridor ACEC	Scenic	78,390	79,017
Shay Canyon ACEC	Cultural, & Special Emphasis Area	1,770	3,560
Total		**531,790**	**513,452**

[1]Acreage listed in 1991 San Juan RMP (BLM 1991a).

[2]Acreage for current existing ACECs determined by ArcView program. Difference represents mapping/GIS discrepancy.

3.15.1.4 POTENTIAL ACECS

After analyzing both currently existing and nominated areas based on relevance and importance criteria for the purpose of ensuring "that the most environmentally important and fragile lands will be given … early attention and protection." (Senate Report 94-583, on FLPMA), and to protect important resources from irreparable damage, the BLM identified eleven potential ACECs, totaling 535,936 acres within the boundaries of the Monticello PA (Table 3.47–3.49; Map 44). It should be noted that some of these are existing ACECs, and some are new nominations for designation as ACECs. In addition, some of these potential ACECs are reconfigurations of existing and nominated areas.

Portions of potential and/or existing ACECs are within existing WSAs. Table 3.48 shows the acreage of WSA that is within an ACEC. Those ACECs that are not listed have no acres of WSA within the ACEC.

For detailed information on the Monticello FO ACEC process please refer to ACEC Evaluations, Appendix H.

Table 3.47. Summary Table of Potential ACECs

Area Name	Value(s)	Acreage
Alkali Ridge	Cultural	39,202
Bridger Jack Mesa	Near-relict vegetation	6,225
Butler Wash North	Scenic	17,463
Cedar Mesa	Cultural and Scenic, with Special Emphasis Areas – Grand Gulch, Valley of the Gods, and Arch Canyon, and Pine/Step Canyon area	344,262
Dark Canyon	Scenic, Cultural and Wildlife	61,659
Hovenweep	Cultural with Special Wildlife Habitat	2,438
Indian Creek / Lockhart Basin	Scenic	56,293[1]
Lavender Mesa	Relict-vegetation	649
Shay Canyon	Cultural	119
San Juan River	Scenic, Cultural, Wildlife and Natural System	7,626
Valley of the Gods	Scenic	-- [2]
Total		535,936

[1] Indian Creek: 8,509 acres, included within Lockhart Basin total.

[2] Valley of the Gods: 34,771 acres, included in Cedar Mesa total.

Table 3.48. ACEC Acreage within Wilderness Study Areas (WSAs), by ACEC

Potential ACEC	Total ACEC Acreage	WSA(s) within the ACEC	Acreage of WSA within the ACEC	Percent of ACEC within WSA
Bridger Jack Mesa	6,225	Bridger Jack Mesa	6,225	100%
Butler Wash	17,463	Butler Wash, South Needles	17,248	99%
Cedar Mesa	344,262	Fish Creek Canyon, Bullet Canyon, Pine Canyon, Shieks Flat, Grand Gulch ISA, Mule Canyon, Road Canyon	196,349	57%
Dark Canyon	61,659	Dark Canyon ISA	61,326	99%
Indian Creek	8,509	Indian Creek	4,602	54%
Lockhart Basin	47,784	Indian Creek	1,821	4%
Scenic Highway Corridor	79,017	Cheese Box Canyon, Fish Creek Canyon, Pine Canyon, Shieks Flat, Grand Gulch ISA, Mule Canyon, Road Canyon	9,929	8%

Table 3.49. Description and Relevance and Importance Summary of Potential ACECs

Description	Summary of Relevance and Importance
Alkali Ridge Existing ACEC – 39,202 acres	
Alkali Ridge lies between Alkali Canyon and Montezuma Canyon in the eastern portion of the resource area. This area is one of the best-known and influential examples of scientific archeological investigation in the Southwestern United States. The area contains the Alkali Ridge National Historic Landmark (2,340 acres).	The cultural resources located in this area are regionally and nationally significant and include a large number of high density cultural sites of the Basketmaker and Pueblo cultures. This area contains numerous large structural sites that have revealed evidence of the full range of prehistoric pueblo occupation from Basketmaker II to Pueblo III (500-1300 AD) and represent the defining morphological site type for the prehistoric Pueblo II cultural period (900-1150 AD).
Bridger Jack Mesa Existing ACEC – 6,225 acres	
Bridger Jack Mesa is located in the Indian Creek Corridor on the west side of Scenic Highway 211. Bridger Jack Mesa ACEC covers a large mesa top consisting of pinyon-juniper woodland and sagebrush-grass parks. The mesa is public land except for approximately 420 acres of state land.	This area contains near-relict plant community unaltered by human intervention. The cliffs surrounding the mesa top form a natural boundary providing a relatively isolated area that has not been grazed since 1957. Bridger Jack Mesa provides a natural exclosure control area to study the recovery of pinyon-juniper woodland and sagebrush-grass communities from livestock grazing. It is important as a baseline for the study and comparison of pinyon-juniper woodlands and sagebrush-grass community management in other parts of the Colorado Plateau and is, therefore, more than locally significant.

Table 3.49. Description and Relevance and Importance Summary of Potential ACECs

Description	Summary of Relevance and Importance
Butler Wash Existing ACEC – 17,463 acres	
Butler Wash North ACEC is located south of and adjacent to Canyonlands National Park, and includes Butler Wash, and several forks of Salt Creek. The southern part of the ACEC flat areas drop abruptly into the heads of the various forks of Salt Creek.	The scenic values of this area are a continuation of the remarkable rock formations, spires, domes and buttes seen in the adjacent Needles District of Canyonlands National Park. They are important to regional, national, and international visitors who travel to Canyonlands NP and backpack into the remote, natural areas adjacent to the park. Salt Creek is one such area. Gray, cream, coral and red sandstones band the walls of the canyons of Salt Creek.
Cedar Mesa Existing ACEC – 295,335 (Includes 4,240 acres in Grand Gulch, and 34,771 in Valley of the Gods)	
Cedar Mesa ACEC is located on the southern boundary of the field office bounded by Comb Wash on the east, Highway 163 and Glen Canyon NRA on the south and State Highway 276 on the west. This ACEC encompasses the Grand Gulch Archeological District and the Grand Gulch Primitive Area.	Cultural resources in the Cedar Mesa/Grand Gulch area are of regional, national, and worldwide significance because of the wealth of intact Basketmaker and Pueblo cliff dwellings in excellent condition. Arch Canyon, in particular, has a ruin of unique architectural elements that are one-of-a-kind in this area. Arch Canyon also has designated critical habitat for the Mexican spotted owl, potential habitat for the Southwestern willow flycatcher, and riparian habitat essential for amphibians and neo-tropical migratory birds. Sensitive fish species such as the flannelmouth sucker are present in the canyon.
Dark Canyon Existing ACEC – 62,659 acres	
Dark Canyon ACEC is located on the western boundary of the field office adjacent to Glen Canyon NRA on the west, and on the east the Dark Canyon Wilderness Area (45,000 acres) of the Manti-La Sal NF Dark Canyon ACEC is surrounded by National Forest and National Park Service lands. This area is primitive, roadless and undeveloped in nature. It is limited to access due to the canyon rims that form a natural boundary that protect its natural scenery and wildlife values. The area includes Dark, Gypsum, and Fable Valley and several smaller side canyons all of which are part of the Colorado River drainage.	Dark Canyon is one of the deepest canyon systems in the region. The remote location, dramatic rugged terrain, and undeveloped naturalness of the area contribute to the high scenic value and make this a destination for primitive backcountry exploration by national and international travelers. The canyon has unobstructed and expansive views including 1,200 foot vertical cliffs, rimrock, outcrops and spires, pour-offs and potholes, and color contrasts between soil and rock, flowing water, and diverse vegetation. The proximity to Glen Canyon NRA, the Colorado River, Canyonlands NP, and the Manti-La Sal National Forest contribute to Dark Canyon as a visitation destination for primitive backcountry experience. Dark Canyon is within designated critical habitat for the Mexican spotted owl. It is also important habitat for willow flycatchers, peregrine falcon and other raptors. There is a large variety of wildlife present in the area including ringtail cats, desert bighorn sheep, bobcats, black bear, deer, elk, and mountain lions.

Table 3.49. Description and Relevance and Importance Summary of Potential ACECs

Description	Summary of Relevance and Importance
Hovenweep Existing ACEC – 1798 acres + 620 acres[1]	
Hovenweep ACEC is located on the eastern boundary of the field office and is adjacent to the Square Tower Unit in Hovenweep National Monument (National Park Service).	Hovenweep ACEC contains cultural resources in the same vicinity and of the same types as Canyons of the Ancients National Monument and Hovenweep National Monument and adds cohesiveness to the management of the cultural resources of the two National Monuments. It has two special emphasis areas, Cajon Pond and a visual protection zone (880 acres) for the unobstructed viewing of cultural sites. Cajon Pond, a constructed reservoir covers approximately 10 acres and provides important riparian habitat for migrating waterfowl and other wildlife in a desert, semi-arid climate that has very little surface water present.
Indian Creek Existing ACEC – 8,509 acres	
Indian Creek ACEC is located in the northern area of the FO, east of and adjacent to Canyonlands NP / Needles District. The Indian Creek ACEC buffers the scenic view from Needles Overlook across BLM land into Canyonlands NP. The area includes the lower end of Indian Creek and Rustler Canyon.	The Indian Creek ACEC is noted for its incised, meandering canyons which wind through dark red mudstones, forming many rounded spires, and "hoo-doos" (boulders atop eroded rock that look like mushrooms). These various formations continue uninterrupted into Canyonlands NP, which contains some of the most unique landforms in the world. Visitors from around the world come to view this area from overlooks across BLM land and NPS Canyonlands NP.
Lavender Mesa Existing ACEC – 649 acres	
Lavender Mesa ACEC covers the top of Lavender Mesa, which is located in the Indian Creek corridor of the FO. Lavender Mesa is isolated and inaccessible to man and herbivores by ground routes, even small mammals such as rabbits and mice appear to be absent. The mesa top supports a relict plant community environment. Most of the mesa is pinyon-juniper woodland with the exception of a small 20-acre sagebrush-grass park.	The vegetative community present on the top of Lavender Mesa is unique because it has developed without the influence of grazing animals and most other mammals. The area is ecologically relevant because it presents an isolated, relict plant community that remains unaltered by human or animal intervention. The vegetative community is important as a baseline for comparative studies of pinyon-juniper woodland and sagebrush-grass communities in other parts of the Colorado Plateau.
Shay Canyon Potential ACEC – 119 acres	
Shay Canyon ACEC is located in the southern portion of the Indian Creek corridor and is adjacent to the northern boundary of the Manti-La Sal National Forest. It includes sections of the upper Indian Creek drainage with a Special Emphasis Area for the protection of aquatic and riparian habitat, delineated as a 275-foot corridor along upper Indian Creek.	Cultural resources in this area represent the interface between two prehistoric cultural groups: Anasazi and Fremont. This interface is represented in the unique motifs in the rock art. The area provides an opportunity for cultural scientific research, and paleontology study. Dinosaur tracks in the bottom of the Shay Canyon streambed are a unique visual reminder of the area's distant geologic and natural past. This area is heavily traveled area by visitors to the Needles District of Canyonlands National Park as Route 211 is the only way into and out of the park.

Table 3.49. Description and Relevance and Importance Summary of Potential ACECs

Description	Summary of Relevance and Importance
Lockhart Basin Potential ACEC – 56,293 acres	
The Lockhart Basin ACEC nomination area is bounded on the north by the Colorado River, on the east by the cliffs of Hatch Point [the Moab and Monticello FOs boundary], and on the west by Canyonlands National Park. The southern boundary contours from the eastern rims to south of Indian Creek Existing ACEC and west to the boundary of Canyonlands National Park. This ACEC nomination includes lower Indian Creek, Rustler, Horsethief, and Lockhart Canyons and is nominated to protect scenic values as viewed from the numerous rims above the eastern ACEC nominated boundary, and looking into Canyonlands National Park.	The visual resources of the Lockhart Basin ACEC are some of the most impressive of the entire Colorado Plateau, and are of local, national, and international significance. The overlooks from the Needles Overlook provide an extensive viewshed of miles of vistas looking deep into Canyonlands NP. The unique characteristics of landforms, the National Park, the relative pristine nature of the land, the sensitivity of visitors to scenic resources, and the ability of the visitor to view the area from many vantage points make this an extraordinary and important visual resource. The cultural inventory areas within Lockhart Basin indicate multi-cultural occupations, unique to the canyonlands area of Utah.
Valley of the Gods Potential ACEC – 34,771 acres	
Valley of the Gods lies north of US Highway 163 extending north to the south cliff line of Cedar Mesa. The Valley of the Gods is currently a Special Emphasis Area within the existing Cedar Mesa ACEC.	Valley of the Gods provides significant vistas to those who travel the roads surrounding the area. The Valley of the Gods is important to regional, national and international visitors who view and photograph the scenery. Panoramic views can be seen from the highways bordering the area and from the Valley of the Gods Loop (graded gravel and clay, 17 miles) Road. The eroded, wind-sculpted spires and buttes, and long rock fins resemble animals or "gods". Seven Sailors, Rooster Butte, Setting Hen Butte, Pyramid Peak, Castle Butte, and Bell Butte are found here. The West Fork of Lime Creek, Lime Creek, and the northwest portion of Lime Ridge are included in t area.
San Juan River Potential ACEC – 7,626 acres	
The San Juan River ACEC nomination is located along the river from west of Bluff, Utah to the boundary of Glen Canyon NRS, with the Navajo Nation on the southern portion of the river center-line. A portion of the nominated area lies within the San Juan River SRMA.	The scenery along the San Juan River includes tilted formations as the river crosses Comb Ridge, steep vertical cliffs hundreds of feet high with walls of interbedded sandstone and limestone, and the 1,200-foot high walls of the Goosenecks. The Goosenecks are one of the best examples of entrenched meanders in the United States. Riparian areas with various hues of green border the watercourse and contrast with red sandstone, presenting a diverse and varied scenic viewing area. Hanging gardens occur in ledges of Navajo Sandstone. The rock art along the San Juan River is unsurpassed, recognized as "Type Sites" for their specific rock art motifs. Cultural sites are present along the river banks and within the tributaries of the San Juan River. The San Juan River has a unique endemic fish population and designated habitat for the endangered Colorado pikeminnow

Table 3.49. Description and Relevance and Importance Summary of Potential ACECs

Description	Summary of Relevance and Importance
	and the razorback sucker, as well as the state sensitive flannelmouth sucker. Bighorn sheep inhabit the rocky precipices of the lower river. The river corridor is used by migrating Southwestern willow flycatcher (a T&E species), and yellow-billed cuckoo (a candidate species). The San Juan River supports riparian habitat for several other species of wildlife , including amphibians, neo-tropical birds, and waterfowl.

[1]Since the designation of this ACEC in the 1991 San Juan RMP (BLM 1991a), BLM has acquired an additional parcel of land, approximately 620+ acres, that is adjacent on the east of the BLM Hovenweep ACEC and a state section, and is also on the western boundary of the Canyon of the Ancients NM (COANM) in Colorado. It is proposed that this parcel of approximately 620+ acres be added to the current BLM Hovenweep ACEC. The additional acreage will fill in a previously privately owned parcel between the two national monuments and contribute to consistent management of the cultural value.

3.15.2 Wild and Scenic Rivers

3.15.2.1 Introduction

The Wild and Scenic Rivers Act, 1968 established legislation for a National Wild and Scenic Rivers System (NWSRS) to protect and preserve designated rivers throughout the nation in their free-flowing condition, as well as their immediate environments. The Act contains policy for managing designated rivers, and created processes for designating additional rivers into the National System. Section 5(d) of the Act directs federal agencies to consider the potential for national wild, scenic and recreational river areas in all land and water development planning. A wild and scenic river review is being conducted as part of the current BLM Monticello FO Resource Management Plan (RMP) process.

The first phase of the wild and scenic river (WSR) review is to inventory all potentially-eligible rivers within the FO area to determine which of those rivers are eligible for consideration in the NWSRS. In order to be eligible, rivers must be free-flowing and possess at least one (1) outstandingly remarkable value (ORV). The ORVs are evaluated in the context of regional and/or national significance, and must be river-related. A tentative classification of each river/segment found eligible is then made based on the current level of human development associated with that river/segment.

The second phase of the WSR review occurs as all eligible rivers are taken through the land use planning process of the RMP to determine their "suitability" for designation into the NWSRS. Suitability is discussed in Chapter Four of the DEIS. One RMP planning alternative will consider all eligible river(s)/segments as suitable, another alternative will consider no eligible river(s)/segments as suitable, and other alternatives will consider some river(s)/segments as suitable and other river(s)/ segments not suitable. "Suitability" determinations will be made in the ROD for the Resource Management Plan.

Those river(s)/segments found suitable are then managed under specified guidelines to protect the free-flowing nature of the river(s)/segment, and to protect the identified outstandingly remarkable values (ORVs) and tentative classification.

Finally, the "suitable" river/segment determinations are reported to Congress. There is no specific time requirement for the completion of this phase; however, it is assumed that reporting will be done some time following completion of the RMP. Only the U.S. Congress or the Secretary of the Interior, upon request by the State, can designate a river into the NWSRS.

3.14.2.2 ELIGIBLE SEGMENTS

Approximately 1,300 miles of watercourses within the Monticello PA were inventoried and determined to be free-flowing. Each river segment was evaluated on the basis of having at least one river-related outstandingly remarkable value (ORV) considered rare, unique and/or exemplary, with each ORV being at least regionally significant, and having perennial or intermittent flows. Within the Monticello PA, 12 segments totaling approximately 93 miles on six rivers were found to meet these criteria (see Map 46). A table listing all of the 167 river segments evaluated in 2003-2004 by the ID Team for potential Wild and Scenic River eligibility is available in the *Preliminary Eligibility Determination of Wild and Scenic Rivers* (BLM 2003d). A tentative classification of *Wild*, *Scenic*, or *Recreational* was determined for each eligible river/segment based on the level of human development associated with each river/segment.

- A *Wild* river is free of impoundments, with shorelines or watersheds essentially primitive, and with unpolluted waters.
- A *Scenic* river may have some development, and may be accessible in places by roads.
- A *Recreational* river is considered as a river or segment of river accessible by road (or railroad), may have more extensive development along its shoreline, and may have undergone some impoundment or diversion in the past.

Table 3.50 lists and describes the ORVs of each of the 12 eligible river segments that will be further reviewed for suitability.

Detailed descriptions of the ORVs and the eligibility determinations can be found in the Monticello FO Final Eligibility Report (BLM 2004c). The tentative Classification for each river segment is included in the table, as well as descriptions of the Outstandingly Remarkable Values. Individual worksheets showing evaluation for Tentative Classifications of each river segment are found in Appendix H – Special Designations.

Table 3.50. Individual Eligible Wild and Scenic River(s) Segments (See Map 46)

Segment Description with approximate river miles	Length In Miles (Total River Miles/BLM River Miles)	Outstandingly Remarkable Values ORVs	Tentative Classification (See Appendix)
COLORADO RIVER Perennial river The north/west side of this section of the Colorado River is managed by the BLM Moab Field Office; the south/east side of the same section of river is managed by the BLM Monticello Office. The boundary of the two resource areas is the centerline of the Colorado River.			
Segment # 1: Northern FO boundary near River Mile 50.5 on the east side of the river [1 mile north of Potash land] south to private land near River Mile 48.5	6.2 total miles/ 2.2 BLM miles	Scenic Fish Recreation Wildlife Cultural Ecological	Recreational
Segment #2: State lands near River Mile 44 to approx. River Mile 38.5	6.8 total miles/ 5.5 BLM miles	Scenic Fish Recreation Wildlife Cultural Ecological	Scenic
Segment #3: River Mile 37.5 west of State school section to boundary of Canyonlands NP near River Mile 31	6.5 total miles/ 6.5 BLM miles	Scenic Fish Recreation Wildlife Cultural Ecological	Scenic
INDIAN CREEK Perennial stream from National Forest boundary to Shay Canyon, and Intermittent stream from Shay Canyon to Donnelly Canyon			
Manti-La Sal National Forest Boundary to Donnelley Canyon	6.5 total miles/ 4.8 BLM miles	Cultural	Recreational
FABLE VALLEY Perennial stream			
Source to Mouth	6.8 total miles/ 6.8 BLM miles	Wildlife Ecological	Scenic
DARK CANYON Perennial stream			
Youngs Canyon to Glen Canyon National Recreational Area	13.6 total miles/ 6.4 BLM miles	Scenic Recreation Wildlife	Wild

Table 3.50. Individual Eligible Wild and Scenic River(s) Segments (See Map 46)

Segment Description with approximate river miles	Length In Miles (Total River Miles/BLM River Miles)	Outstandingly Remarkable Values ORVs	Tentative Classification (See Appendix)
SAN JUAN RIVER Perennial river The north side of the San Juan is under BLM Monticello FO management. The south side falls under the jurisdiction and administration of the Navajo Nation. The boundary between Navajo Nation and the Monticello FO is the centerline of the San Juan River.			
Segment # 1: West Montezuma Creek to private land just before "avulsed" parcel of Navajo Nation land at St. Christopher's Mission	15.3 total miles/ 8.5 BLM miles	Fish Wildlife Cultural/Historic	Recreational
Segment #2: West of "accreted" land at town of Bluff, UT River Mile (minus) -1 to River Mile 9	10 total miles/ 10 BLM miles	Fish Recreation Wildlife Cultural/Historic Ecological	Recreational
Segment #3: River Mile 9 to near River Mile 23, above the Mexican Hat formation	13.3 total miles/ 13.3 BLM miles	Scenic Fish Recreation Geologic Wildlife Ecological	Wild
Segment #4: River Mile 23 to near River Mile 28	5.3 total miles/ 4.2 BLM miles	Scenic Fish Recreation Wildlife Ecological	Recreational
Segment #5: River Mile 28 to boundary of Glen Canyon NRA near River Mile 45	17.3 total miles/ 17.3 BLM miles	Scenic Fish Recreation Geologic Wildlife Ecological	Wild
ARCH CANYON Perennial stream in some reaches, Intermittent stream in others.			
Manti-La Sal National Forest Boundary to ½ mile west of its confluence with Comb Wash	7.7 total miles/ 6.9 BLM miles	Fish Recreation Wildlife Cultural Ecological	Recreational

3.15.3 LANDS STUDIED FOR CONGRESSIONAL WILDERNESS DESIGNATION UNDER FLPMA SECTION 603

3.15.3.1 BACKGROUND AND HISTORY

In 1964, Congress passed the Wilderness Act, establishing a national system of lands for the purpose of preserving a representative sample of ecosystems in a natural condition for benefit of future generations. Until 1976, lands considered for and designated as wilderness were managed by the U.S. Forest Service, the Fish and Wildlife Service, or the National Park Service. With the passage of the FLPMA in 1976, Congress directed the BLM to inventory; study, and recommend which public lands under its administration should be designated as wilderness.

In 1979, the BLM began an inventory of 23 million acres of public land in Utah and determined that 95 areas (approximately 3.3 million acres) possessed wilderness character. These lands are called wilderness study areas (WSAs) or instant study areas (ISAs) if they had previously been identified as outstanding natural areas or primitive areas. For the next several years, these areas were studied to determine which would be recommended to Congress for designation as wilderness. In October 1991, the Secretary of the Interior recommended that Congress designate 69 areas, totaling about two million acres as wilderness. To date, with few exceptions, Congress has not acted on that recommendation.

WSAs are roadless, natural in appearance, provide outstanding opportunities for solitude or primitive and unconfined recreation, and may have supplemental values (such as ecological, geological, or other features of scientific, educational, scenic, or historical value).

3.15.3.2 PLANNING AREA PROFILE

There are 18 WSAs or ISAs in the Monticello PA (Table 3.51 and Map 47). As depicted on the table, some of the WSAs are combined with the Grand Gulch and Dark Canyon ISAs to create 2 ISA complexes. Within the area managed by the Monticello FO, there is also an area totaling 2,160 acres contiguous to the Butler Wash WSA (and included in the Butler Wash WSA acreage), that was studied as a boundary variation during the wilderness review mandated by Congress in FLPMA Sections 603(a) and (b). These lands were addressed in the Utah BLM Statewide Wilderness Final EIS (November, 1990) and were recommended for congressional wilderness designation in the Utah Statewide Wilderness Study Reports (October, 1991). This recommendation was forwarded by the President of the United States to Congress in 1993.

All the lands studied during the FLPMA Section 603 wilderness review will continue to be managed in a manner that does not impair their suitability for congressional designation in accordance with FLPMA Section 603(c). Subject to valid existing rights, actions may be allowed on a case-by-case basis only where BLM determines that the lands' wilderness suitability would not be impaired. All of these areas are designated and protected under the authority of Section 603 of FLPMA, are managed according to the *Interim Management Policy and Guidelines for Lands Under Wilderness Review (IMP)* (BLM 1995), to preserve their wilderness values until Congress either designates them wilderness or releases them for other uses. Only Congress can designate a WSA/ISA as wilderness or release it from the protective mandate of Section 603 of FLPMA, and the status of these areas will not change as a result of this resource management planning process.

Table 3.51. BLM WSAs/ISAs in the Monticello PA – Acreages

Name	San Juan Resource Area[1] RMP	Utah BLM State Wide Wilderness Final EIS[2 3]	Utah Statewide Wilderness Study Report[4]
Dark Canyon Instant Study Area (ISA)[5]	62,040	68,030	68,030
Grand Gulch ISA[6]	37,810[7]	105,520	105,520
Indian Creek WSA	6,870	6,870	6,870
Bridger Jack Mesa WSA	5,290	5,290	5,290
Butler Wash WSA	24,190	24,190	24,190
South Needles WSA	160	160	160
Middle Point WSA[5]	5,990		
Mancos Mesa WSA	51,440	51,440	51,440
Pine Canyon WSA[6]	10,890		
Cheesebox Canyon WSA	15,410	15,410	15,410
Bullet Canyon WSA[6]	8,520		
Slickhorn Canyon WSA[6]	45,390		
Road Canyon WSA	52,420	52,420	52,420
Fish Creek WSA	46,440	46,440	46,440
Mule Canyon WSA	5,990	5,990	5,990
Sheiks Flat WSA[5]	3,140		
Squaw Canyon WSA	6,580		6,676[8]
Cross Canyon WSA	1,000		1,008[9]
Totals	**387,410**	**381,760**	**389,444**

[1]In this column, except as noted, all acreage figures are from San Juan RMP (BLM 1991a).

[2] In this column, except as noted, all acreage figures are from Utah BLM State Wide Wilderness Final EIS (BLM 1990).

[3]Squaw/Papoose Canyon and Cross Canyon WSAs were not studied in the Utah BLM State Wide Wilderness Final EIS (BLM 1990) as they were studied in the San Juan / San Miguel Planning Area Wilderness EIS (BLM [Colorado] 1990).

[4] In this column, except as noted, all acreage figures are from Utah Statewide Wilderness Study Report (BLM 1991c).

[5] The Dark Canyon ISA combines with the Middle Point WSA to form the Dark Canyon ISA Complex, with a total of 68,030 acres.

[6]The Grand Gulch ISA combines with the Pine Canyon, Bullet Canyon, Slickhorn, and Sheiks Flat WSAs to form the Grand Gulch ISA Complex, with a total of 105,520 acres.

[7] The statewide wilderness EIS uses 37,580 acres for the Grand Gulch ISA. Acreage calculations for the San Juan RMP (BLM 1991a) from the master title plats revealed the actual total to be 37,807, which is rounded to 37,810. The difference between the two figures amounts to 0.6 percent.

[8]Total acres of this study area are 11,287, of which 4,611 acres are in Colorado.

[9] Total acres of this study area are 12,588, of which 11,580 acres are in Colorado.

The only decisions that will be made for these areas in this plan revision will be: 1) visual resource management (VRM) class designations in keeping with Bureau policy (VRM Class I); 2) off highway vehicle management designations in keeping with the IMP (i.e., "closed," "limited to designated roads and trails," or "limited to existing roads and trails"), and 3) route designations where ways are either conditionally open (as long as suitability for Congressional wilderness designation is not impaired) or closed to vehicle use.

Although WSAs are by definition roadless, several of the WSAs do include inventoried ways (Table 3.52). During the 1979-1980 Utah Wilderness Inventory, it was necessary to divide routes used by motorized vehicles into "roads" and "ways." To be considered a road, three criteria had to be met: (1) constructed; (2) maintained by mechanical means; and (3) regular and continuous use. All other motorized routes were defined as ways, which could be left open to motorized travel as long as their use did not "impair" the suitability of the area for wilderness designation. There are no known impairments in the WSAs in the Monticello FO.

Table 3.52. List of Inventoried Ways by WSA

WSA Name	Inventoried Ways (miles)
Grand Gulch ISA	15.5
Pine Canyon WSA	2.5
Bullet Canyon WSA	6.0
Slickhorn Canyon WSA	13.25
Sheiks Flat WSA	0
Road Canyon WSA	7.0
Fish Creek WSA	19.8
Mule Canyon WSA	0.3
Mancos Mesa WSA	25.0
Cheese Box Canyon WSA	4.6
Indian Creek WSA	0
Bridger Jack Mesa WSA	0
Dark Canyon Instant Study Area (ISA)	6.0
Middle Point WSA	1.0
Butler Wash WSA	0
South Needles WSA	0
Squaw Canyon WSA	0
Cross Canyon WSA	0
Total	**100.95**

The BLM does not make decisions establishing scenic byways.

Scenic Byways:

Indian Creek Corridor Scenic Byway: SR-211 (Junction with US-191 fourteen miles north of Monticello) to its terminus at the Needles District of Canyonlands National Park.

Bicentennial – Trail of the Ancients National Scenic Byway: SR-95 from south of Blanding goes west across the Colorado River at Glen Canyon National Park (with a loop through Natural Bridges National Monument). A section also travels south from Blanding to the town of Bluff and then east to Montezuma Creek, and eventually into Colorado.

Monument Valley to Bluff Scenic Byway: US-163 from the Utah / Arizona border to the town of Bluff.

Scenic Backways:

Lockhart Basin Road Scenic Backway: From Moab, on the Kane Creek Blvd at the intersection of US-191, to Hurrah Pass and onto the Lockhart Basin Road in the Monticello PA and it ends at SR-211 near Indian Creek.

Elk Ridge Road Scenic Backway: Begins 25 miles west of Blanding at the junction of SR-25 and SR-275; it turns onto Forest Road 088 (through the Manti-LaSal National Forest) and ends 48 miles later at the junction of SR-211.

Abajo Loop Scenic Backway: West from Monticello on Forest Road (FR) 105 to the junction of FR 079, and ends 35 miles later in the town of Blanding.

Trail of the Ancients Scenic Backway: Follows SR-261 including the Moki Dugway, from SR-95 to SR-163; and intersects SR-316 to the Goosenecks State Park. The Valley of the Gods road intersects SR-261 below the dugway for a 17 mile dirt and gravel loop drive.

3.16 Special Status Species

For BLM management purposes, special status species include those plant and wildlife species listed as endangered, threatened, proposed, and/or candidate under the Endangered Species Act, as well as those plant species listed or proposed as sensitive by the BLM. Special status arises from habitat degradation and direct disturbance to individuals, often combined with inherently restricted species' distributions. Periodic review of the special status species list allows for additions and/or removals depending on the status of populations, habitat, and potential threats. Evaluation of environmental characteristics in the area of a proposed project is the first step in BLM protocol for special status species protection. If factors such as geology, soils, vegetation community type, elevation, or aspect are likely to support a known special status species, a qualified specialist must complete a survey. If the survey is contracted, a BLM specialist must approve the results. If a federally listed, proposed, or candidate species could potentially be affected by a proposed action, a Biological Assessment is prepared. The BLM must manage these species to prevent further habitat degradation or population loss. Recovery plans, special management area designations, and special management conditions are used to protect special status species. BLM's Standards and Guidelines for Healthy Rangelands also provide habitat protection.

A total of 11 federally listed species and 58 BLM Sensitive Species were identified as having the potential to occur within the Monticello PA (see Table 3.53 and 3.54). It should be noted that some of the TES species may occur on lands managed by agencies or organizations other than the BLM.

3.16.1 Special Status Species Habitat

The diversity of habitat in the Monticello PA is reflected in the diversity of animal life that occurs within its borders. The Monticello FO, Utah Division of Wildlife Resources (UDWR), or the U.S. Fish and Wildlife Service (USFWS), have identified the following federally protected

threatened, endangered, candidate, or nonessential, experimental population species, and sensitive species that could potentially occur within the Monticello PA.

3.16.2 FEDERALLY THREATENED AND ENDANGERED SPECIES

Table 3.53 provides a listing of the 11 federally threatened, endangered and candidate species potentially occurring in the Monticello PA. A narrative description of each species follows the table.

Table 3.53. Federally Threatened, Endangered and Candidate Species Potentially Occurring in the Monticello PA

Scientific Name **Common Name**	**Habitat**	**Status**	**Area of Potential and/or Known Occurrence**
	Plants		
Carex specuicola Navajo sedge	Seasonally wet, seeps, springs, hanging gardens in Navajo sandstone. 3,770-5,980'. Blooms late June-July.	Threatened	Endemic to San Juan County, UT and Coconino County, AZ
	Wildlife		
Mustela nigripes Black-footed ferret	Prairie dog towns associated with open grassland and prairies.	Endangered	May occur throughout eastern Utah, only known population occurs in the Uinta Basin. Historically known in San Juan County.
Haliaeetus leucocephalus Bald eagle	Roosts and nests in tall trees near bodies of water.	Threatened	Throughout Utah.
Gymnogypes californianus California condor	Colonies roost in snags, tall open-branched trees, or cliffs, often near important foraging grounds.	Endangered	Experimental, nonessential population known rarely throughout Utah
Empidonax traillii extimus Southwestern willow flycatcher	Low scrub, thickets, or groves of small trees, often near watercourses.	Endangered	Throughout southern Utah.
Strix occidentalis lucida (Mexican) spotted owl	Steep rocky canyons.	Threatened	Southern and eastern parts of Utah.
Coccyzus americanus occidentalis (Western) yellow-billed cuckoo	Riparian habitats.	Candidate	Throughout Utah.

Table 3.53. Federally Threatened, Endangered and Candidate Species Potentially Occurring in the Monticello PA

Scientific Name **Common Name**	**Habitat**	**Status**	**Area of Potential and/or Known Occurrence**
	Fish		
Gila elegans Bonytail	Eddies, pools, and backwaters near swift current in large rivers.	Endangered	Mainstem of the Colorado and Green Rivers.
Ptychochelius lucius Colorado pikeminnow	Adults can be found in habitats ranging from deep turbid rapids to flooded lowlands. Young prefer slow-moving backwaters.	Endangered	Mainstem of the Colorado, Green, and San Juan Rivers.
Gila cypha Humpback chub	Large rivers and deep canyons.	Endangered	Mainstem of the Colorado and Green Rivers
Xyrauchen texanus Razorback sucker	Slow backwater habitats and impoundments.	Endangered	Within the Green, Colorado, and San Juan River systems.

Navajo Sedge (*Carex specuicola)*

This species is federally listed as threatened. It occurs seasonally in wet, seeps, springs, hanging gardens on sandy to silty soils derived from Navajo sandstone (Natureserve 2005). Navajo sedge is endemic to San Juan County, UT and Coconino County, AZ at elevations from 3,770 to 5,980 feet. There are no known populations in the Monticello PA (e-mail from Paul Curtis, Monticello BLM to Susan Kammerdiener, SWCA, January 26, 2006). This species blooms from late June through July. Existing threats to this species include grazing and groundwater pumping (Natureserve 2005).

Black-footed Ferret (*Mustela nigripes*)

The black-footed ferret is listed as an endangered species. It is considered the rarest mammal in North America but was once common throughout the Great Plains. All native populations have been extirpated. Successful captive breeding programs and reintroduction efforts are returning small populations to their native ranges. Prairie dog burrows provide potential retreats for ferrets and have been shown to be directly lined to fluctuations in the prairie dog population. Their diet consists of 90% prairie dogs and with recent declines in prairie-dog numbers, reintroduced populations are at risk. Within the Monticello PA, no known populations occur, but historical native ranges exist and reintroductions are being examined by state (UDWR) and federal agencies (personal communication between Tammy Wallace, BLM and Thomas Sharp, SWCA, 2003).

Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle is listed as a threatened species. Utah's wintering bald eagle population is typically found near rivers, lakes, and marshes where unfrozen, open waters offer the opportunity to prey on fish and waterfowl (Stalmaster 1987). The eagles begin to arrive in November and

migrate north by March. Utah also hosts a small population of desert bald eagles that can be found in desert valleys, far from any water. These eagles feed primarily on carrion. Within the Monticello PA, bald eagles are typically found wintering and roosting around Recapture Reservoir and along the San Juan and Colorado Rivers. There are no known bald eagles that nest within the Monticello PA (personal communication between Tammy Wallace, BLM, and Thomas Sharp, SWCA, 2003).

Mexican Spotted Owl (*Strix occidentalis lucida*)

The Mexican spotted owl (MSO) is listed as a threatened species. MSO habitat includes high canopy closure, high stand density, multi-layered canopies of uneven-age stands, steep slopes, and canyons with rocky cliffs. Within the Colorado Plateau, owls are known to nest in steep-walled canyon complexes and rocky canyon habitat within desert scrub vegetation. MSOs lay eggs in late March and April with an incubation period of approximately 30 days and most eggs hatch by the end of May. Most owlets fledge in June and are fully independent by early October. The MSO exists in small isolated subpopulations and is threatened by habitat loss and disturbance from recreation, overgrazing, road development, catastrophic fire, timber harvest, and mineral development (USFWS 1995). The Monticello PA contains two MSO protected activity centers. Protected activity centers are areas (at least 600 acres in size) around a known nest or roost site in which minimal management is permitted. Owls may be in other areas within the field office boundaries or near the borders. There is also USFWS designated critical habitat for this species within the Monticello PA (see Map 86). The USFWS designates critical habitat for threatened or endangered species to protect occupied habitat and to protect suitable but unoccupied habitat to allow for expansion of populations and recovery of the species. The BLM is required not to directly or indirectly alter the value of critical habitat for both the survival and recovery of MSO.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

The Southwestern willow flycatcher (SWF) is listed as an endangered species. SWF utilizes and breeds in patchy to dense riparian habitats along streams and wetlands near or adjacent to surface water or saturated soils. These dense patches are often interspersed with small openings, open water, and/or shorter/sparser vegetation, creating a mosaic habitat pattern. Historically, nests were constructed in native willow species but currently the SWF will utilize both native and exotic species, such as tamarisk and Russian olive, which provide desired habitat requirements (USFWS 2002e). SWFs begin laying eggs as early as May but typically in mid-June. Young typically fledge the nest between June and mid-August (Sogge et al. 1997). Population declines are attributed to numerous, complex, and interrelated factors such as habitat loss and modification, expansion of invasive, non-native plants into breeding habitat, brood parasitism by cowbirds, vulnerability of small population numbers, and winter and migration stress. SWF have been documented migrating along the San Juan River, Comb Wash, and the Cross Canyon area. Recent mist netting studies in Cross Canyon have shown that they are potentially nesting in the area as well. There is also potentially suitable habitat in larger riparian areas throughout the Monticello PA (see Maps 54 and 84).

Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)

The Yellow-billed cuckoo is listed as a candidate species that has been listed due to loss of riparian habitat from agricultural use, water use, road development and urban development. The yellow-billed cuckoo is a neotropical migrant that utilizes riparian valleys throughout the state. Yellow-billed cuckoos have been documented only during migration along the San Juan River. There is also potentially suitable habitat in the larger riparian areas throughout the Monticello PA (see Map 54).

California Condor (*Gymnogypes californianus*)

The California condor, a species on the federal list, has been sighted statewide since they were recently released as a nonessential, experimental population in northern Arizona in the later 1990s. California condors prefer mountainous country at low and moderate elevations, especially rocky and brushy areas near cliffs. Colonies roost in snags, tall open-branched trees, or cliffs, often near important foraging grounds. Condors eat carrion, usually feeding on large items such as dead sheep, cattle, and deer.

Bonytail (*Gila elegans*)

The bonytail is listed as an endangered species and has drastically declined in numbers since the 1960's. The reasons for the decline included flow depletion, dams, mining impacts and resulting siltation, and the introduction of exotic fish. It is a large cyprinid fish and little is known about its biological and diet requirements. Historically it was once widespread throughout the Colorado River Basin. Today it is thought to be found in large river reaches of the Colorado and Green Rivers (USFWS 2002a). Recruitment in the natural environment is apparently nonexistent or extremely low. Bonytails seem to prefer big-river or mainstreams with eddies and pools rather than swift current. The Monticello PA contains both populations and designated critical habitat for this species (see Map 86).

Colorado Pikeminnow (*Ptychocheilus lucius*)

The Colorado pikeminnow is listed as an endangered species and is the largest cyprinid fish in North America. Natural populations of the Colorado pikeminnow are restricted to the upper Colorado River Basin in Wyoming, Colorado, Utah, and New Mexico (USFWS 2002c). The main stem of the Colorado River from Palisade, Colorado to Lake Powell has known population within this region. A small reproducing population exists in the San Juan River. According to the Colorado pikeminnow recovery goals (USFWS 2002c) these fish can be found in the San Juan River from Shiprock, New Mexico to the inflow of Lake Powell. Flow regulations, migration barriers, habitat loss/alteration, and introduced non-native fish have all been identified as causes for population decline. The Colorado pikeminnow is adapted to seasonally variable flow, high silt loads, and turbulence. The Monticello PA contains both populations and designated critical habitat for this species (see Map 86).

Razorback Sucker (*Xyrauchen texanus*)

The razorback sucker is listed as an endangered species and is a large catostomid fish endemic to the Colorado River basin. The Green River has the only known spawning areas for the razorback sucker (USFWS 2002d). Populations have been identified in the Colorado River from Rifle Colorado to Lee's Ferry Arizona and also in the San Juan River from Shiprock, New Mexico to the inflow of Lake Powell. Populations are being re-established through stocking. The natural

population of these fish is mostly aged adults with little or no recruitment. These fish prefer low-gradient, flat-water reaches of rivers. The Monticello PA contains both populations and USFWS designated Critical Habitat for this species (see Map 86).

Humpback Chub (*Gila cypha*)

The humpback chub is listed as an endangered species and is a big-river cyprinid. Populations of humpback chub have been identified in the Upper Colorado River Basin with the highest concentrations found in the Black Rocks and Westwater Canyon reaches of the Colorado River near the Colorado/Utah state line (USFWS 2002b). The presence of juvenile populations suggests spawning may occur in the Upper Colorado River at Black Rock, Westwater Canyon, Cataract Canyon, and Desolation/Gray Canyon. Flow alterations have been identified as a significant cause of decline. The habitat types in which the humpback chub is found include waters with fast currents, deep pools and boulder habitat; as well at the relatively quiet mouth of the Little Colorado River (USFWS 1990a). The Monticello PA contains both populations and USFWS designated Critical Habitat for this species (see Map 86).

There are no listed threatened, endangered, or candidate amphibian, reptilian or mollusk species with the Monticello PA.

3.16.3 BLM Sensitive Species

The BLM maintains a list of sensitive species that may occur on managed lands. The BLM Utah State Director's Sensitive Species List includes those that are federally listed species, those identified by BLM, and those listed as state sensitive by the State of Utah. In 2002, the USFWS developed a list of Birds of Conservation Concern (BCC) that identifies migratory and non-migratory avian species that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973. Partners in Flight (PIF) Priority Species are those species recognized by Utah Partners in Flight as birds most in need of conservation and are described in further detail in the Utah Partners in Flight Avian Conservation Strategy (Parrish et. al. 2002). The following tables list the species that potentially, or are known to occur within the Monticello PA and are either on the BLM Utah State Director's Sensitive Species List, the UDWR's State Sensitive Species List, the USFWS's Birds of Conservation Concern, or the UDWR's Partners in Flight Priority Species.

3.16.3.1 Special Status Wildlife Species

Thirty-seven BLM sensitive fish and wildlife species are known to occur in the Monticello PA and are listed in Table 3.54.

Table 3.54. Special Status Wildlife Species Potentially Occurring in the Monticello PA

Scientific Name Common Name	Habitat	Status/List	Area of Potential and/or Known Occurrence
Idionycteris phyllotis Allen's big-eared bat	Rocky and riparian areas in woodland and scrubland regions, roosts in caves or rock crevices.	BLM and Utah	Throughout southern Utah.
Nyctinomops macrotis Big free-tailed bat	Rocky and woodland habitats, roosts in caves, mines, old buildings, and rock crevices.	BLM and Utah	Throughout southern Utah.
Myotis thysanodes Fringed myotis	Desert and woodland areas, roosts in caves, mines, and buildings.	BLM and Utah	Throughout southern Utah.
Cynomys gunnisoni Gunnison's prairie-dog	Grasslands, semidesert and montane shrublands.	BLM and Utah	Extreme southeastern Utah.
Vulpes macrotis Kit fox	Desert, semi-arid landscapes.	BLM and Utah	West desert and south of the Cisco Desert.
Microtus mogollonensis Mogollon vole	Dry meadows.	BLM and Utah	Southern part of San Juan County.
Perognathus flavus Silky pocket mouse	Semidesert arid grasslands with rocky or loamy soils	BLM and Utah	Extreme southeast corner of San Juan County.
Euderma maculatum Spotted bat	Found in a variety of habitats, ranging from deserts to forested mountains; roost and hibernate in caves and rock crevices.	BLM and Utah	Throughout Utah.
Corynorhinus townsendii Townsend's big-eared bat	Occur in many types of habitat, but is often found near forested areas; roosts and hibernates in caves, mines, and buildings.	BLM and Utah	Throughout Utah.
Buteo regalis Ferruginous hawk	Flat and rolling terrain in grassland or shrub steppe; nests on elevated cliffs, buttes, or creek banks.	BLM, Utah, BCC, and PIF	Throughout Utah.
Pelecanus erythrorhyanchos American white pelican	Along lakes, ponds, creeks, and rivers.	BLM, Utah, and PIF	Throughout Utah.
Dolichonyx oryzivorus Bobolink	Riparian or wetland areas.	BLM, Utah, and PIF	Throughout Utah.
Athene cunicularia Burrowing owl	Open grassland and prairies.	BLM and Utah	Throughout Utah.

Table 3.54. Special Status Wildlife Species Potentially Occurring in the Monticello PA

Scientific Name Common Name	Habitat	Status/List	Area of Potential and/or Known Occurrence
Melanerpes lewis Lewis's woodpecker	Burned-over Douglas-fir, mixed conifer, pinyon-juniper, riparian, and oak woodlands, but is also found in the fringes of pine and juniper stands, and deciduous forests, especially riparian cottonwoods.	BLM, Utah, and PIF	High and mid-elevation mountain ranges of Utah.
Accipiter gentiles Northern goshawk	Mature mountain forest and riparian zone habitats.	BLM and Utah	High and mid-elevation mountain ranges of Utah.
Peregrinus falconus Peregrine falcon	Steep, rocky canyons near riparian or wetland areas.	BLM and BCC	Throughout Utah.
Buteo swainsonii Swainson's hawk	Plains and grasslands.	BCC	Throughout Utah
Falco mexicanus Prairie falcon	Plains and wooded areas.	BCC	Throughout Utah
Asio flammeus Short-eared owl	Grasslands, shrublands, and other open habitats.	BLM and Utah	Throughout Utah.
Picoides tridactylus Three-toed woodpecker	Engelmann spruce, sub-alpine fir, Douglas fir, grand fir, ponderosa pine, tamarack, aspen, and lodgepole pine forests.	BLM, Utah, and PIF	High and mid-elevation mountain ranges of Utah.
Spizella breweri Brewer's sparrow	Sage and desert scrub.	PIF and BCC	Throughout Utah
Dendroica nigrescens Black-throated gray warbler	Dry western deciduous or coniferous scrub.	PIF and BCC	Throughout Utah
Selasphorus platycercus Broad-tailed hummingbird	Mountains of Rocky Mountain region and lowland riparian	PIF and BCC	Throughout Utah
Vireo vicinior Gray vireo	Pinyon and/or juniper woodland	PIF and BCC	Throughout Utah
Lanius ludovicianus Loggerhead shrike	Sage and desert scrub	BCC	Throughout Utah
Gymnorhinus cyancephalus Pinyon jay	Sage and desert scrub and pinyon and/or juniper woodlands	BCC	Throughout Utah
Amphispiza belli nevadensis Sage sparrow	Shrub steppe habitat	PIF and BCC	Throughout Utah
Vermivora virginae Virginia's warbler	Mountain shrub and pinyon-juniper habitat	PIF and BCC	Throughout Utah

Table 3.54. Special Status Wildlife Species Potentially Occurring in the Monticello PA

Scientific Name Common Name	Habitat	Status/List	Area of Potential and/or Known Occurrence
Centrocercus minimus Gunnison Sage-grouse	Sagebrush and sagebrush/grassland habitats (see Map 54).	BLM, PIF, BCC	Populations known in the northeastern portion of the Mont FO.
Bufo microscaphus Arizona toad	Lowland riparian habitat.	BLM and Utah	Currently not found in San Juan County. Found in Southern portion of Utah.
Sauromalus ater Common chuckwalla	Predominantly found near cliffs, boulders, or rocky slopes, where they use rocks as basking sites and rock crevices for shelter.	BLM and Utah	Along the Colorado River in Southern Utah.
Xantusia vigilis Desert night lizard	Extremely secretive, spending much of its time hiding under Joshua tree limbs and similar cover.	BLM and Utah	Throughout Southeastern Utah.
Opheodrys vernalis Smooth greensnake	Meadows and stream margins	BLM and Utah	Abajo mountains
Catostomus discobolus Bluehead sucker	Fast flowing water in high gradient reaches of mountain rivers.	BLM and Utah	Tributaries of the Colorado and Green rivers.
Gila robusta Roundtail chub	Large rivers, and is most often found in murky pools near strong currents.	BLM and Utah	Mainstem and tributaries of the Colorado and Green rivers.
Catostomus latipinnis Flannelmouth sucker	Large rivers, where they are often found in deep pools of slow-flowing, low gradient reaches.	BLM and Utah	Mainstem and tributaries of the Colorado and Green rivers.
Oreohelix Yavapai Yavapai mountainsnail	Aspens and in rocky habitat.	BLM and Utah	Abajo and Navajo Mountains

3.16.3.2 Special Status Plant Species

Twenty-one BLM sensitive plant species are known to occur in the Monticello PA and are listed in Table 3.55.

Table 3.55. Special Status Plant Species With The Potential To Occur In The Monticello PA, San Juan County, Utah

Scientific Name **Common Name**	**Habitat**	**Status** **(with date if only on one list)**	**Area of Potential and/or Known Occurrence**
Allium geyeri var. *chatterleyi* Chatterley's onion	Moist pinyon-juniper and sagebrush sites.	Sensitive (2002)	San Juan County (Abajo Mountains endemic)
Asclepias cutleri Cutler milkweed	Sand dunes.	Sensitive (1991)	San Juan County
Astragalus cronquistii Cronquist milkvetch	Cutler formation (Comb Wash), Morrison formation (Aneth), Mancos shale in Colorado.	Sensitive	San Juan County
Astragalus preussii var. *cutleri* Copper Canyon milkvetch	Warm desert shrub. 3,805'. Copper Canyon.	Sensitive (1991)	San Juan County endemic
Cymopterus acaulis var. *parvus* Skull Valley spring-parsley	Deposits of wind-blown sand.	Sensitive (2002)	San Juan County
Cymopterus beckii Pinnate (Beck's) spring-parsley	Sandy soil of Navajo sandstone origin. Crevices and ledges of slickrock. Mid-high elevation in Abajo Mountains.	Sensitive	San Juan County–Eight occurrences
Dalea favescens var. *epica* Hole-in-the-Rock prairie clover	Sandstone bedrock and sand in blackbrush and mixed desert shrub. 4,690–5,000'.	Sensitive	(1991, San Juan County) Southwest San Juan County and east Garfield endemic
Echinocereus triglochidiatus var. *inermis* Spineless hedgehog cactus	Blackbrush, ephedra, sagebrush, pinyon-juniper mountain brush, aspen communities. 3,200–8,400'.	Sensitive (1991)	San Juan County. Spineless variety is a neotype from San Juan County
Epilobium nevadense Nevada willowherb	Talus slopes, crevices.	Sensitive (2002)	San Juan County (Washington, Iron, and Millard counties)
Erigeron kachinensis Kachina daisy	Seasonally wet seeps, hanging gardens on sandstone outcrops.	Sensitive	San Juan County Colorado Plateau endemic (Natural Bridges National Monument Dark Canyon and Elk Ridge)
Eriogonum racemosum var. *nobilis* Redroot buckwheat	Sagebrush and pinyon-juniper. 5,000'.	Sensitive (2002)	San Juan County

Table 3.55. Special Status Plant Species With The Potential To Occur In The Monticello PA, San Juan County, Utah

Scientific Name **Common Name**	**Habitat**	**Status** **(with date if only on one list)**	**Area of Potential and/or Known Occurrence**
Gilia latifolia var. *imperialis* Cataract Canyon gilia	Mixed warm and cool desert shrub communities. 3,280–5,215'.	Sensitive (2002)	San Juan County (type from Cataract Canyon) Utah Endemic
Habenaria zothecina Alcove bog orchid	Moist streambanks, seeps, hanging gardens, in mixed desert shrub, pinyon-juniper, and oakbrush. 4,360–8,690'.	Sensitive (2002)	San Juan County, Grand County (type) Utah endemic
Lomatium latilobum Canyonlands lomatium (C. biscuitroot, or C. desert-parsley)	Slot canyons between Entrada sandstone 'fins' formed from expanded fractures and erosion. Sandy soil or crevices in sandstone. (Sand Flat and Mill Creek it's found in Navajo sandstone that weathers like Entrada.) Prefers the sheltered, cool habitat on all slopes and aspects.	Sensitive	San Juan County, Grand County (Wilson Mesa) Southeastern Utah (and adj. Mesa County Colorado) endemic. Thirteen occurrences
Ostrya knowltonii Western hophornbeam	A small tree at bases of monoliths, hanging gardens of sandstone. 4,000–5,600'.	Sensitive (1991)	San Juan County
Pediomelum aromaticum var. *tuhyi* Paradox breadroot	Pinyon -juniper and mixed desert shrub. 5,020'.	Sensitive (2002)	San Juan County (This variety differs from more widespread variety by size of flowers.)
Perityle specuicola Alcove rock-daisy	Drier crevices in seasonally wet hanging gardens, alcove communities at 4,000'. Navajo and Windgate sandstone and Rico Formation, but habitat not substrate specific.	Sensitive	San Juan County, Grand County (type north of Moab). Narrowly endemic to Colorado Plateau (from confluence of Colorado River with the Dolores and Dark Canyon)
Phacelia howelliana Howell scorpionweed	Salt and warm desert shrub, pinyon-juniper. 3,690–5,000'.	Sensitive (1991)	San Juan County (type from Bluff). Colorado Plateau endemic
Phacelia indecora Bluff phacelia	Salt desert shrub. 4,500'.	Sensitive (2002)	San Juan County (type from Bluff) Endemic
Proatriplex pleiantha Mancos shadscale	Salt desert shrub in Morrison Formation.	Sensitive (1991)	San Juan County (southeast) Navajo Basin endemic

Table 3.55. Special Status Plant Species With The Potential To Occur In The Monticello PA, San Juan County, Utah

Scientific Name Common Name	Habitat	Status (with date if only on one list)	Area of Potential and/or Known Occurrence
Sphaeralcea janeae Jane's Globemallow	Sandy soils weathered white rim and Organ Rock members of Cutler Formation. salt desert shrub. 4,000–4,600'.	Sensitive (2002)	San Juan County (type near White Rim road), Grand County (questionable) Canyonlands endemic

Sources: BLM 2002d; Atwood et al. 1991.

3.17 TRAVEL MANAGEMENT

3.17.1 OVERVIEW

In the past, travel management has focused on motor vehicle use; however, travel management encompasses all forms of transportation, including mechanized vehicles such as bicycles, motorcycles, four-wheeled all-terrain vehicles (ATVs), cars, and trucks. Off-highway vehicles (OHVs) (also known as off-road vehicles) include ATVs, off-highway motorcycles, and snowmobiles. These are vehicles capable of, or designated for, travel on or immediately over land, water, or other natural terrain.

3.17.2 CURRENT MANAGEMENT PRACTICES

The San Juan RMP (BLM 1991a) included designations for Open, Closed, and Limited OHV areas. Under the Limited category there were two sub-categories: 1) limited to existing roads and trails, and 2) limited to designated roads and trails (see Table 3.56 below). Over the subsequent decade, the actual on-the-ground implementation of designations either by mapping or signing of routes was never completed.

Table 3.56. Current OHV Designation and Acreage

Monticello PA Lands (1,783,123)	1991 BLM San Juan Resource Area RMP
OHV Designation Categories	Number of Acres [1]
Open	611,310
Limited – to designated	218,780
Limited use-seasonal	540,260
Limited – to existing	570,390
Closed	276,430

[1]Acres may be additive because of overlap.75

In the current RMP process, state and national guidance for OHV use and travel planning in the sub-categories under the Limited designation has changed. Designating Open, Closed, and Limited areas for OHV use continues to be mandated, but under the Limited category only the "limited to designated roads and trails" sub-category is recommended.

Designation of routes under the Limited category provides a purposefully designed and clearly delineated travel network, reduces route proliferation, and facilitates travel management and law enforcement.

3.17.3 ISSUES

The increase in the use of OHVs has created numerous issues within the Monticello PA. The speed and increasing capability of OHVs allows easier access to remote parts of the Monticello PA, making management of this activity more difficult, and increasing the potential range of adverse impacts to natural resources. Cross-country OHV use, in particular, is creating additional resource damage and is an important issue for the Monticello FO. Also, the popularity of OHV-related activities continues to grow, both in private use and in through special events, which exacerbates the management and resource impacts issues. With the increase in popularity, measures are needed to avoid on-site and offsite impacts to current and future land uses are resources. Issues include noise and air pollution, erodible soils, stream sedimentation, non-point source water pollution, listed and sensitive wildlife species habitats, and historic and archaeological sites.

Another important issue pertaining to travel and access throughout the FO as well as the west in general is Revised Statute (RS) 2477 from the Mining Act of 1866. The act granted a public right-of-way across public lands *that were not otherwise reserved or set aside for other public uses* to guarantee access as land transferred to state or private ownership (ADNR 2005). Although Congress repealed RS 2477 in 1976, any valid existing rights-of-way were honored, or "grandfathered" in. This has led to decades of dispute over which routes were legitimate highways as of 1976.

3.17.4 VEHICULAR ROUTES

Within the Monticello PA, 6,452 miles of B, C and D class roads and trails (including all ownership and all agencies) have been constructed or identified. To clarify, B class roads are regularly maintained; surfaces areas that can be natural, paved, or gravel and are funded by the state for maintenance purposes. C class roads are considered city streets; while D class roads are comprised of all natural surfaces, not funded by the state and not on a regular maintenance schedule. Approximately 2,481 miles of D class roads and trails are located throughout the Monticello PA. These routes provide access for uses such as grazing, wood cutting and mineral development. However, recreational opportunities provide the primary use of these roads and trails.

3.17.4.1 HIGH USE AREAS

Within the Monticello PA, specialists have identified seven areas where OHV designations need to be addressed due to a variety of resource use conflicts. These conflicts have the potential to bring harm to users as well as the resources potentially impacted. At the very least, user conflicts may potentially degrade user satisfaction. These areas include Indian Creek, Dry Valley Summit,

Montezuma Recapture Drainages, Butler-Comb-Lime, Cedar Mesa, Southwest Canyons, and Dark Canyon-Beef Basin. For additional details on user conflicts, see Section 3.10 – Recreation.

3.17.4.2 Scenic Byways and Backways

BLM Backcountry Byways are components of the National Scenic Byway system. The program was established by the U.S. Department of Transportation in 1991. Roads may be recognized as scenic by-ways based on their archaeological, cultural, historic, natural, recreational, and scenic qualities. There are no designated BLM Backcountry Byways in the Monticello PA.

Backways in Utah are primarily on BLM land; however a few are on state and FS lands. Utah backways were named on June 2, 1989 as part of Utah's Byway and Backway program. All of these roads were a product of a statewide juried/vote process by leaders in regional communities. Since 1989, no Utah Backways have been designated; however, some have been removed for safety reasons (personal communications with Margaret Godfrey, Utah State Byway Coordinator, on January 26, 2006). Descriptions of the Scenic Byways and Backways found within the Monticello PA are given below.

3.17.4.2.1 Scenic Byways

Indian Creek Corridor Scenic Byway

SR-211 (Junction with US-191 fourteen miles north of Monticello) to its terminus at the Needles District of Canyonlands National Park.

Bicentennial – Trail of the Ancients National Scenic Byway

SR-95 from south of Blanding goes west across the Colorado River at Glen Canyon National Park (with a loop through Natural Bridges National Monument). A section also travels south from Blanding to the town of Bluff and then east to Montezuma Creek, and eventually into Colorado.

Monument Valley to Bluff Scenic Byway

This route takes travelers on US-163 from the Utah / Arizona border to the town of Bluff.

3.17.4.2.2 Scenic Backways

Lockhart Basin Road Scenic Backway

This route runs from Moab, on the Kane Creek Blvd at the intersection of US-191, to Hurrah Pass, then onto the Lockhart Basin Road and ending at SR-211. (This is a 57 mile trail which takes approximately 11 hours to traverse, and is an extremely challenging 4- wheel drive, high clearance trail).

Trail of the Ancients Scenic Backway

This route follows SR-261 including the Moki Dugway, from SR-95 to SR-163; and intersects SR-316 to the Goosenecks State Park. The Valley of the Gods road intersects SR-261 below the dugway for a 17-mile dirt and gravel loop drive.

Elk Ridge Road Scenic Backway

This route begins 25 miles west of Blanding at the junction of SR-25 and SR-275; it turns onto Forest Road 088 (through the Manti-La Sal National Forest) and ends 48 miles later at the junction of SR-211.

Abajo Loop Scenic Backway

This route runs from Monticello on Forest Road (FR) 105 to the junction of FR 079, and ends 35 miles later in the town of Blanding.

3.17.4.3 SAN JUAN RIVER

Permitted motorized and non-motorized travel is allowed on the San Juan River under the current RMP. NO upstream motorized traffic is allowed.

3.18 VEGETATION

3.18.1 INTRODUCTION AND RESOURCE OVERVIEW

Differences in vegetation composition reflect the environmental diversity across the Monticello PA. This vegetation composition is affected by factors such as soils, elevation, aspect, slope, topography, and precipitation. In the current resource management plan (RMP), vegetation in the Monticello PA was classified into one of four major vegetation communities (BLM 1989): pinyon pine –Utah juniper (*Pinus edulis - Juniperus osteosperma*), saltbush (*Atriplex* spp.), sagebrush (*Artemisia* spp.), and blackbrush (*Coleogyne ramosissima*). These are further divided into 16 vegetation associations and habitat types. Although a small part of the FO area, grasslands, ponderosa pine/mountain shrub, riparian/wetlands and hanging gardens have been added as vegetation communities. Federally threatened and endangered and BLM sensitive plant species are discussed in Section 3.15 – Special Status Species.

Vegetation across the Monticello PA has been identified using Utah SWReGap Analysis data (USGS 2004), which was developed using multi-spectral satellite imagery in conjunction with image processing and classification software. The relationship between spectral signatures and vegetation types was further refined through the development of models that incorporated a variety of topographic and distributional information for a given vegetation type. Utah SW ReGAP vegetation data were designed to be used for depicting the distribution of the state's various vegetation types at scales of 1:100,000 or smaller. Thus, while adequate for characterizing vegetation over large areas, this data is less accurate when viewed for smaller project areas. Gap coverage data was used to display the land cover types that exist in the Monticello PA (Map 54). Some of the SW ReGAP vegetation cover types were combined; resulting in the land cover categories presented in Table 3.57. The non-vegetated land cover categories are not discussed in this section. No acreages are provided for the hanging gardens vegetation type due to the vertical nature of the community.

Table 3.57. Acres of Land by SW ReGAP Cover Type in the Monticello PA[5]

Cover Type	Acres
Pinyon-juniper (includes juniper, pinyon-juniper and pinyon)	1,147,407
Desert shrub (includes salt desert scrub, greasewood and blackbrush)	421,863
Sagebrush/perennial grassland (includes sagebrush, sagebrush/perennial grass, desert grassland and dry meadow)	166,122
Riparian and wetlands	20,699
Conifer /mountain shrub (includes Ponderosa Pine/mountain shrub, oak/mountain shrub and mountain shrub)	10,802
Invasive plants and noxious weeds	3,429
Agriculture	5,543
Water	1,446
Developed	227
Disturbed	7,858
Total BLM Lands in FO	**1,785,396**

3.18.1.1 PINYON-JUNIPER

These woodlands, dominated by pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*), cover approximately 1,147,407 acres (64%) (USGS 2004) of the Monticello PA. In this habitat type, precipitation in this habitat ranges from 12 to 18 inches annually and occurs primarily in the winter. Productivity, species composition, and resiliency differ within this type depending on soil depth. As stands mature toward full canopy closure, understory vegetation becomes sparse and forage value decreases. Habitat types outlined in the 1986 Draft San Juan RMP (BLM 1986a) include:

- Pinyon pine, Utah juniper, blackbrush (*Coleogne ramosissima*), galleta grass (*Hilaria jamesii*);
- Pinyon pine, Utah juniper, Nuttall's saltbush (*Atriplex nuttallii*), galleta grass, Indian ricegrass (*Oryzopsis hymenoides*);
- Pinyon pine, Utah juniper, big sagebrush (*Artemisia tridentata*);
- Pinyon pine, Utah juniper, Utah serviceberry (*Amelanchier utahensis*);
- Pinyon pine, Utah juniper, mountain big sagebrush (*Artemisia tridentata* var. *vaseyana*), gamble oak (*Quercus gambelii*).

Unhealthy pinyon-juniper stands are evident across the Monticello PA, especially on sites with shallow soils. Pinyon mortality, attributed to the combination of drought, Ips beetle, and root disease, is estimated at 20 to 30 percent in the Monticello PA. Pinyon is a valuable resource for other programs such as woodlands (firewood harvest) and wildlife habitat management. It also provides pine nuts for human collection and consumption. The increase in dead wood has lead to

[5] These acreages are approximations based on SW ReGAP and may not match the acreages given in other sections.

an increase in fuel loading and area fire hazards. However, this dead wood also provides a short-term resource as collectable firewood.

Pinyon-juniper encroachment on sites with deep soils is continuing. More sagebrush communities and understory vegetation are lost as this occurs, resulting in an increase in soil erosion. Following wildfires, rehabilitation seedings have occurred in pinyon-juniper woodlands on throughout the Monticello PA. More information on this vegetation type is located in Section 3.21 – Woodlands.

3.18.1.2 DESERT SHRUB

This vegetation type includes desert shrub and semi-desert shrub species. These areas receive relatively low annual precipitation (five to ten inches), which translates into very low available soil moisture. The soils that support members of the saltbush zone are also often highly saline. These factors limit this type's ability to recover following disturbance. Drier saltbush areas contain species such as four-wing saltbush (*Atriplex canescens*), shadscale (*Atriplex confertifolia*) and winterfat (*Krascheninnikovia lanata*). Greasewood (*Sarcobatus vermiculatus*) dominates in areas where the water table is near the surface (MacMahon 1988). Elevation ranges from 4,000 to 5,400 feet. Approximately 421,863 acres or 24% of the Monticello PA includes the following habitat types outlined in the 1986 Draft San Juan RMP (BLM 1986a):

- Shadscale, Mormon tea (*Ephedra* spp.), blackbrush;
- Indian ricegrass, galleta grass, shadscale, fourwing saltbush;
- Shadscale, Mormon tea, blackbrush, pinyon pine, Utah juniper;
- Fourwing saltbush, Mormon tea, blue grama (*Bouteloua gracilis*), Indian ricegrass, galleta grass;
- Fourwing saltbush, blue grama, Indian ricegrass, galleta grass, big sagebrush;
- Pinyon pine, Utah juniper, blackbrush;
- Shadscale, Mormon tea, blackbrush, galleta grass, Indian ricegrass;
- Fourwing saltbush, Mormon tea, galleta grass, Indian ricegrass (USGS National Gap Analysis Program 2004).

3.18.1.3 SAGEBRUSH/ PERENNIAL GRASS

The moderately deep soils and greater amount of precipitation in this zone (11 to 16 inches per year) combine to create these relatively productive vegetation communities. Big sagebrush predominates on the more favorable sites, and black sagebrush (*Artemisia nova*) on the shallow rocky sites. Important associated forage plants include bitterbrush (*Purshia tridentata*), Indian ricegrass, western wheatgrass (*Elymus smithii*), Sandberg bluegrass (*Poa secunda*), and squirreltail (*Sitanion hystrix*). Elevation ranges from 5,500 to 7,300 feet with little localized relief. This vegetation type occurs across approximately 166,122 acres, or 9% of the Monticello PA (USGS 2004), and provides crucial winter range for big game wildlife species. Habitat types outlined in the 1986 Draft San Juan RMP (BLM 1986a) include big sagebrush, pinyon pine, Utah juniper, galleta grass, needle-and-thread grass (*Stipa comata*), blue grama, and Indian ricegrass.

Sagebrush stands are declining due to drought, insects (army cutworm), pinyon-juniper encroachment, motorized off-road travel, and lack of seedling recruitment. Large amounts of

decadent plants (older age class) are evident, with a lack of age class diversity. The loss of sagebrush communities threatens wildlife habitat and species diversity across the Monticello PA. Seeding projects in the Monticello PA involve sagebrush restoration for deer winter range and habitat improvement for sage-grouse.

Grassland communities occur as a unique component of the Monticello PA. They are similar to salt-desert, sagebrush, and blackbrush types in species composition, but differ in that grasses dominate instead of browse species. The dominant grass species depend on the soil, with species such as saltgrass (*Distichlis stricta*), galleta grass, squirreltail, blue grama, and western wheatgrass occurring on heavy soils. Sandy sites usually support species such as Indian ricegrass, sand dropseed (*Sporobolus cryptandrus*), and needle- and-thread grass. Grassland communities occur from 4,000 to 6,000 feet with average precipitation total of five to 15 inches (Vallentine 1961).

Pinyon-juniper and shrub encroachment, along with that of invasive annuals such as cheatgrass (*Bromus tectorum*) and Russian thistle (*Salsola tragus*), are the main issues of concern for this community type.

3.18.1.4 Riparian and Wetland Communities

Riparian and wetland areas occur along waterways and water-bodies and are characterized by species such as willows (*Salix* spp.) and cottonwoods (*Populus* spp.). Approximately 20,699 acres of wetland and riparian areas exist in the Monticello PA (USGS 2004). Although riparian and wetland areas represent only 1 percent of the FO area, they provide crucial wildlife habitat and contribute greatly to overall vegetation productivity and diversity. Riparian resource issues are covered in detail in Section 3.11 – Riparian Resources.

Hanging gardens and spring-fed vegetation communities are rare to the arid and semi-arid environments of the Colorado Plateau. Hanging gardens occur where groundwater seeps through sandstone or limestone substrates, often along overhanging cliffs adjacent to rivers. Plants found in hanging garden communities are often wetland-riparian species endemic to the Colorado Plateau (Spence unpub.). Spring-supported communities often contain riparian woodlands of species such as willow and cottonwood. Some less common, mixed-deciduous woodlands comprised of species such as birchleaf buckthorn (*Rhamnus betulifolia*) are also found in the region.

3.18.1.5 Conifer/ Mountain Shrub

This vegetation type occupies elevations between 6,500 and 9,000 feet (Dixon 1935) with an average of approximately 13 inches of precipitation annually (WRCC 2004). Where ponderosa pine are present, the understory is relatively sparse, commonly consisting of Snowberry (*Symphoricarpos* spp.), Rabbitbrush (*Chrysothamnus* spp.), Oregon grape (*Mahonia repens*), squirreltail, and buckwheat (*Eriogonum* spp.) Gamble's oak dominated communities may dominate the lower end of the elevation range of this vegetation type and is considered a sub-climax community (Dixon 1935). Approximately 10,802 acres of the ponderosa pine/mountain shrub vegetation type exists in the Monticello PA (Edwards et al. 1995). Although this vegetation type is not actively managed and only represents 0.6% of the FO area, it provides crucial wildlife habitat and ecological diversity (see Section 3.20 – Wildlife).

3.18.1.6 INVASIVE PLANTS AND NOXIOUS WEEDS

One of the BLM's highest priorities is to promote ecosystem health and one of the greatest obstacles to achieving this goal is the rapid expansion of invasive, non-native species, or weeds, across public lands. A noxious weed is any plant designated by a federal, state or county government as injurious to public health, agriculture, recreation, wildlife or property (Sheley, Petroff, and Borman 1999). Noxious weeds are designated and regulated by various state and federal laws. Approximately 3,429 acres or 0.2% (USGS 2004) of the Monticello PA are dominated by this vegetation type. A systematic weed inventory has not been completed for the planning area, but BLM estimates made in 2000 indicate that there were over 35,000 acres of noxious weeds, although most of that estimate was based on Russian Olive and Tamarisk infestation. The Monticello FO treats over 1,000 acres each year. Of particular concern is a population of Camelthorn, which is the only known infestation of this species in Utah. Significant efforts are being made to control it before it becomes widespread.

In most cases, noxious weeds are also non-native species (BLM 1991b). They are capable of invading plant communities and replacing native species, and are particularly successful following a disturbance. The BLM considers plants invasive if they have been introduced to an environment where they did not evolve. As a result, they usually have no natural enemies to limit their reproduction and spread (Westbrooks 1998). These invasive plants can dominate and often cause permanent damage to natural plant communities. If not eradicated or controlled, noxious and invasive weeds could jeopardize the health of the public lands and the myriad of activities that occur on them. Noxious and invasive weed species identified in San Juan County are listed in Table 3.58 and a copy of the Noxious Weed Act is included as Appendix G.

The spread of invasive species across the management area continues to be a primary concern. Tamarisk and Russian olive infestations are found in many waterways and have resulted in vegetation compositions far removed from native riparian plant communities. Although known as a highly invasive species, without official designation as a problematic species, tamarisk eradication has not been mandatory in Utah. Populations of Russian knapweed have also reached high levels in many river corridors with camelthorn and ravennagrass (*Saccharum ravennae*) following suit. New species invasions such as these threaten existing vegetation communities, species diversity, and habitats of special status species.

Effects of the current drought are evidenced by reduced plant productivity. Unfavorable climactic conditions also predispose vegetation to insect infestations. Public interest in visiting the Monticello PA continues to grow, and with this comes a greater risk of disturbance to native plant communities and special status species. Activities such as seed collection have become more popular as the demand for drought-tolerant plants increases. Recreationists are seeking new areas, as well as continuing to visit popular destinations such as the San Juan River. Increased human visitation exposes new areas to disturbance and increases the chance for outbreaks of undesirable weeds.

Controlling undesirable and non-native species is one of the most difficult challenges, as well as one of the most significant problems, facing vegetation managers. The Monticello FO contracts with San Juan County to control weeds on BLM land. San Juan County surveyed roads within the FO for noxious and invasive plant species in 1997 and 1998. When possible, these surveys are updated annually. Species found in the FO planning area are included in Table 3.58.

Table 3.58. Invasive and Noxious Weeds of San Juan County, Utah

Scientific Name	Common Name
Aegilops cylindrica	Jointed goatgrass [C S]
Alhagi pseudalhagi	Camelthorn [C]
Asclepias subverticillata	Western whorled milkweed [C]
Bromus tectorum	Cheatgrass
Cardaria draba	Whitetop/Hoary cress [S]
Carduus nutans	Musk thistle [S]
Centaurea diffusa	Diffuse knapweed [S]
Centaurea maculosa	Spotted knapweed [S]
Centaurea repens	Russian knapweed [S]
Centaurea squarrosa	Squarrose knapweed [S]
Cirsium arvense	Canada thistle [S]
Convolvulus arvensis	Field bindweed [S]
Cynodon dactylon	Bermudagrass [S]
Elaeagnus angustifolia	Russian olive
Elytrigia repens	Quackgrass [S]
Isatis tinctoria	Dyer's woad [S]
Lepidium latifolium	Tall whitetop/Perennial pepperweed [S]
Linaria genistifolia	Dalmatian toadflax
Onopordum acanthium	Scotch thistle [S]
Salsola tragus	Russian thistle
Solanum elaeagnifolium	Silverleaf nightshade [C]
Sorghum halepense	Johnsongrass (Perennial Sorghum) [S]
Solanum rostratum	Buffalobur [C]
Tamarix ramosissima	Tamarisk (saltcedar)
Tribulus terrestris	Puncturevine

[C] San Juan County Listed Noxious Weed

[S] State of Utah Listed Noxious Weed

(Designations adapted from the "Noxious Weed Field Guide for Utah" [Merritt, Belliston, and Dewey 2000])

Weed eradication methods, such as herbicide spraying, must be consistent with the Final Environmental Impact Statement and Record of Decision (Utah) Vegetation Treatment on BLM Lands in Thirteen Western States (BLM 1991b and the Vegetation Treatments Using Herbicides on BLM lands in 17 Western States (BLM 2007b). The use of certified weed-free hay is one guideline implemented from Utah BLM Health Standards and Guidelines for Healthy Rangelands to control the spread of noxious weeds (BLM 1997). For revegetation purposes, the use and perpetuation of native species is a priority, except for instances when non-intrusive, non-native species are more ecologically or economically feasible.

3.18.2 SEED AND PLANT COLLECTION

Private individuals may collect seed and plants after acquiring a permit, which includes a list of stipulations. The public may collect seed on BLM-administered lands during non-drought years from a seed source that has been verified as being in good vegetative condition (vigor, viable seed, etc.). Popular species for seed collection include four-wing saltbush, globemallow (*Sphaeralcea* spp.), rabbitbrush (*Chrysothamnus* spp.), winterfat, and needle-and-thread grass.

Collection of individual forbs, grasses, and most shrubs is allowed for scientific purposes only. Federally-protected plant species may not be collected, but BLM-listed sensitive species may be collected if the population is sufficiently large as to not be affected. Before collecting plant specimens, the local BLM FO must be notified. A list of species collected and a copy of the herbarium labels produced for each specimen must be submitted to the BLM Utah State Office at the end of collection season.

3.19 VISUAL RESOURCES

3.19.1 RESOURCE OVERVIEW

The Monticello PA contains an unusually large number of areas that possess a high degree of scenic quality and a high level of visual sensitivity. Each year, an increasing number of visitors come to the area to recreate and sightsee. The visual attributes of the region have made the Monticello PA popular for locals and visitors alike. In general, high scenic quality within the Monticello PA results from the extraordinarily diverse and distinct topography, geology, and cultural history. The area possesses scenically unique vistas and river ways; rare and unusual geological formations of sandstone, limestone, and shale; colorful and highly contrasting sandstone cliffs, arches, canyons, and spires; a diversity of vegetation ranging from aspen, pinyon and juniper, to cottonwood and cacti; and an extraordinary concentration of prehistoric rock art, and prehistoric and historic structures. Visually sensitive areas within the Monticello PA are also the result of visitor interest in and public concern for the visual resources of a particular area, the high degree of visibility to the public for a particular area, the level of use of an area by the public, and the type of visitor use that an area receives.

The major areas within the Monticello PA that possess both outstanding scenic quality and high visual sensitivity include, but are not limited to: the Dark Canyon Wilderness, Comb Ridge, Comb Wash, Butler Wash, Lockhart Basin, the Grand Gulch/Cedar Mesa Plateau and associated canyons, Valley of the Gods, Indian Creek Corridor, Goosenecks State Park Overlook, and a segment of the San Juan River from Sand Island to Clay Hills.

Areas of high scenic quality and visual sensitivity that are associated with travel corridors within the area include the Indian Creek Scenic Byway, the Scenic Byway from the Arizona Border to Bluff (US-163), Trail of the Ancients National Scenic Byway, the Bicentennial Scenic Byway (U-95), and the Lockhart Basin Road Scenic Backway. The Monticello PA also contains thousands of miles of jeep, bike, and foot trails that are traveled as scenic routes, many of which are internationally recognized.

3.19.2 CURRENT MANAGEMENT PRACTICES

The current management of visual resources within the Monticello PA is guided by decisions made in the San Juan RMP Record of Decision (BLM 1991a). The RMP establishes the Visual Resource Management (VRM) goals, which are to: 1) provide a systematic method to identify, evaluate, and manage visual resource values; 2) protect certain scenic values; and 3) minimize adverse visual impacts in other areas while allowing land use activities to occur. The management guidance to achieve these objectives are to: 1) designate five ACECs (Butler Wash, Cedar Mesa, Dark Canyon, Indian Creek, and the Scenic Highway Corridor) in accordance with special conditions stipulated in Chapter 3 of the RMP; and 2) prepare management plans for these areas.

Under the current RMP, visual resources have been identified according to VRM classes. These classes are based on conditions such as scenic quality, viewing distance zones, and viewer sensitivity levels. The VRM class objectives and their descriptions are:

VRM Class I

The objective of Class I is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activities. The level of change to the characteristic landscape should be very low and should not attract attention.

VRM Class II

The objective of this class is to retain the existing character of the landscape. The level of change to the landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes to the landscape must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

VRM Class III

The Class III objective is to partially retain the existing character of the landscape. The level of change to the landscape should be moderate. Management activities may attract the attention of the casual observer, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

VRM Class IV

The objective of Class IV is to provide for management activities that require major modifications to the existing character of the landscape. The level of change to the landscape can be high. The management activities may dominate the view and may be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repetition of the basic visual elements of form, line, color, and texture (BLM 1986b).

The VRM classes within the Monticello PA are listed below, in Table 3.59, with their acreages.

Table 3.59. VRM Classes and Acreages

VRM Class	Acres
I	397,477
II	419,536
III	522,921
IV	991,331
Total	**2,331,265**

Source: BLM 2003e.

The current Monticello RMP has established visual resource stipulations for several areas in the planning area that are considered to have high scenic quality. These include:

- Butler Wash ACEC – which will be managed to maintain its scenic quality, as VRM Class I. This would be accomplished by limiting surface disturbance to those projects for which revegetation could be successfully established within one year after project completion.
- Cedar Mesa ACEC – which will be managed to protect scenic and natural values associated with primitive recreation, and is managed as VRM Class I. Activities within the ACEC would be approved only with special conditions to protect visual resources.
- The Valley of the Gods special emphasis area within the Cedar Mesa ACEC - which will be managed to maintain scenic quality; surface disturbance would be managed to be compatible with VRM Class I criteria.
- To maintain scenic quality within the Indian Creek ACEC, surface disturbance will be limited to that for which revegetation could be successfully established within 1 year after project completion. The ACEC will be managed as VRM Class I. Indian Creek ACEC will be open for mineral leasing with stipulations to prevent surface occupancy; however, the FO manager could grant an exception to the No Surface Occupancy stipulation if an Environmental Assessment (EA) concludes that the project would not unduly impair the visual quality of the area. Recreational use will be limited if the activity causes damage to scenic quality.
- The Scenic Highway Corridor ACEC covers a visual zone along State Highways U-95, U-261, and U-276, and part of the White Canyon viewshed. To maintain scenic quality, surface disturbance will be limited to that for which revegetation could be successfully established within five years after project completion, and also managed as VRM Class I. All revegetation must be with native species naturally occurring within the area. The Scenic Highway Corridor ACEC will be open for mineral leasing with stipulations to prevent surface occupancy. However, the FO manager could grant an exception to the No Surface Occupancy stipulation if an EA concludes that the project would not unduly impair the visual quality of the area. Recreational use will be limited if the activity causes damage to scenic quality.
- Dark Canyon ACEC – which will be managed to protect scenic values associated with primitive recreation, and activities within the ACEC would be approved to protect these values. Surface disturbances will be limited to those that can be successfully revegetated within 1 year after project completion. The ACEC will be managed as VRM Class I, and recreation would be limited if cultural or scenic values were being damaged by recreational

activities. Dark Canyon ACEC would be closed to mineral leasing, mineral disposal, and OHV use.

3.19.2.1 CURRENT CONDITIONS

The entire Monticello PA has been visually inventoried and classified according to the BLM VRM process. In general, the visual resources in the Monticello PA can be delineated in relation to US-191 that runs north-south through the FO planning area. The area to the east of the highway is designated as VRM Class III and Class IV, with the exception of VRM Class II areas in the vicinity of Montezuma Creek and north of the town of Blanding. The remainder of the Monticello PA, to the west of US-191, contains all of those areas designated as possessing high scenic and visual qualities, that is, VRM Class I and Class II.

The emphasis on VRM has changed since the 1991 RMP was approved. The current 1991 RMP and application of VRM objectives have afforded protection of most resources; however, the subsequent rapid increases in recreational resource uses are having an impact on visual resources.

People are attracted to the area because of its extraordinary scenic quality and the many opportunities for recreation. Throughout the Monticello PA, impacts to the landscape are occurring from increased recreation and tourism, which include the impacts from increased OHV use. Additional impacts are also produced by the development of oil and gas resources, seismic exploration, livestock grazing improvements, and other land use disturbances.

The increasing number of roads being utilized by recreationists in the Monticello PA is having indirect effects on visual resources. Seldom Seen zones (those areas that are not visible from major travel routes) are decreasing within the Monticello PA, and an increase in the number of vehicles and people on BLM roads is creating changes in foreground and middleground views and changes in visual sensitivity. An increasingly utilized network of two-track roads and routes is creating conditions that allow OHV users, campers, and woodcutters to expand surface disturbances and impact visual resources.

3.19.2.2 TRENDS

Tourism is increasing within the Monticello PA. Increased recreational and vehicular use, and the increase in the number of visitors to Arches and Canyonlands National Parks, and Natural Bridges National Monument, who remain in the area and then recreate on BLM-administered lands (see Section 3.10 – Recreation), contributes to the cumulative impact on visual resources.

The use of OHVs, trail use, and dispersed camping could have long-term cumulative impacts on visual resources. Oil and gas exploration and development are expected to continue within the Monticello PA and contribute some additional impacts to visual resources. Long-term trends for impacts to visual resources are:

- Increasing OHV-related recreational use could cause visual impacts within the FO planning area;
- Increasing dispersed camping impacts, often as overflow from the nearby National Parks and Monuments, could impact VRM through increased surface and vegetative disturbance;
- Conflicts between OHV recreationists and hikers, sightseers, cultural site tourists, campers, hunters, river floaters, etc., who seek a high-level of scenic quality.

3.20 WILDLIFE AND FISHERIES

3.20.1 RESOURCE OVERVIEW

Great landscape diversity is found within the Monticello PA with lands associated with the Colorado River, San Juan River, and the Abajo Mountains. These land features have produced a unique combination of landforms and vegetation types and provide important habitat for wildlife and fish species.

3.20.2 BIG GAME SPECIES

3.20.2.1 MULE DEER (*ODOCOILEUS HEMIONUS*)

Mule deer occupy most ecosystems in Utah but likely attain their greatest densities in shrublands characterized by rough, broken terrain and abundant browse and cover. Mule deer summer range habitat types include spruce/fir, aspen, alpine meadows, and large grassy parks located at higher elevations. Winter range habitat primarily consists of shrub-covered, south-facing slopes. Winter range habitat primarily consists of shrub-covered, south-facing slopes. Winter diets of mule deer consist of approximately 75 percent browse from a variety of trees and shrubs and 15 percent forbs. Winter range is often considered a limiting factor for mule deer.

The middle and higher elevations of the Monticello PA sustain a large mule deer population. There is one UDWR wildlife management unit for mule deer located within the Monticello PA boundaries. This wildlife management unit contains the San Juan Herd, which is separated into two sub-units (Abajo Mountains and Elk Ridge). The present population trend of these herds is down (Table 3.60). There has also been a significant decline in mule deer populations throughout the state of Utah. This has been attributed to the recent drought and loss of winter habitat. Within the Monticello PA, there has been a loss/die-off of sagebrush habitat due to drought and insect infestations. These include crucial wintering areas, such as Beef Basin and Harts Draw. There are plans throughout the state with several agencies to restore sagebrush habitats using different treatment techniques (personal communication between Tammy Wallace, BLM, and Thomas Sharp, SWCA Environmental Consultants, 2003).

Table 3.60 Current Population and Objectives for Mule Deer

Herd Unit	Current Population	Population Objective	% of Objective
San Juan, Abajo Mt.	6800	13,500	50
San Juan, Elk Ridge	2350	7000	34

Mule deer are a representative guild species for the following habitats in the district, deciduous woodland, riparian, mountain shrub, pinyon-juniper woodland and sagebrush. Impacts to this species can be partly assessed through the impact to these habitat types.

3.20.2.2 ROCKY MOUNTAIN ELK (*CERVUS ELAPHUS NELSONI*)

Rocky mountain elk occupy most ecosystems in Utah but likely attain their greatest densities in grasslands, aspen and montane coniferous forest. Production or calving areas are used from mid-May through June and typically occupy higher elevation sites than winter range. Calving grounds

are usually characterized by aspen, montane coniferous forest, grassland/meadow, and mountain brush habitats, and are generally in locations where cover, forage, and water are in close proximity (Fitzgerald et al. 1994; Seidel 1977; Kufeld 1973). Within the Monticello PA, typical elk winter range occurs between 5,500 and 7,500 feet elevation and comprises mountain shrub and sagebrush habitats.

The middle and higher elevations of the Monticello PA provide habitat for the local elk populations. Elk numbers have increased within San Juan County and have reached the population objectives that UDWR set (Table 3.61; personal communication between Chris Colt, UDWR, and Thomas Sharp, SWCA Environmental Consultants, 2003–2004).

Table 3.61. Current Population and Objectives for Rocky Mountain Elk

Herd Unit	Current Population	Population Objective	% of Objective
San Juan	1300	1300	100

Rocky Mountain elk are a representative guild species for the following habitats in the district, grasslands, deciduous woodland, riparian, mountain shrub, pinyon-juniper woodland and sagebrush. Impacts to this species can be partly assessed through the impact to these habitat types.

3.20.2.3 PRONGHORN (*ANTILOCAPRA AMERICANA*)

Pronghorn antelope can be found and are generally associated with open plains where they feed mainly on browse and forbs. Pronghorn prefer to occupy areas with large tracts of flat to rolling open terrain where they rely on keen eyesight and swift movement to avoid predators. Within the Monticello PA, pronghorn are typically found in the Dry Valley area and rely on this habitat year-round.

The UDWR Hatch Point herd is the only pronghorn herd within the Monticello PA and this herd also extends into the Moab FO planning area. The antelope herd has expanded the area it inhabits to the east side of Highway 191. However, the population trend is down from recent years. UDWR will be managing this herd to increase numbers by proposing supplemental transplants. Table 3.62 shows the current pronghorn population and population objective for this herd unit.

Table 3.62. Current Population and Objectives for Pronghorn Antelope

Herd Unit	Current Population	Population Objective	% of Objective
San Juan, Hatch Point	130-150	300	43-50

Portions of the antelope habitat within the Monticello PA are in less than desired condition. There may be insufficient cover available for fawns to hide in because they are born shortly after livestock are removed from the area and there typically has not been sufficient time for vegetation to grow and provide cover. These areas may also lack forb and shrub compositions necessary to provide adequate forage for antelope (personal communication between Tammy Wallace, BLM, and Thomas Sharp, SWCA Environmental Consultants, 2003).

Pronghorn are a representative guild species for grasslands and desert shrub habitats in the district. Impacts to this species can be partly assessed through the impact to these habitat types.

3.20.2.4 DESERT BIGHORN SHEEP (*OVIS CANADENSIS NELSONI*)

Desert bighorn sheep are uniquely adapted to inhabit some of the most remote and rugged areas. They prefer open habitat types with adjacent steep rocky areas for escape and safety. Habitat is characterized by rugged terrain including canyons, gulches, talus cliffs, steep slopes, mountaintops and river benches (Shackleton et al. 1999). Desert bighorn sheep typically forage on shrubs more than grasses and use forbs less than shrubs and grasses. Desert bighorns are found in southern Utah and typically do not migrate.

There are currently three UDWR herds units for desert bighorn sheep within Monticello PA. These include the San Juan (Lockhart), the North San Juan, and the South San Juan herds. Since the RMP was written, there is new data indicating bighorn sheep utilize the Lockhart Basin area. Under the current RMP, no provisions or designations of crucial bighorn sheep habitat were made in the Lockhart Basin area. The Moab FO of the BLM manages a small part of the habitat for the Lockhart herd. There is also evidence of the Lockhart herd going up the Redd Sheep Trail to Hatch Point.

Bighorn sheep habitat in the Monticello PA is generally in good condition, although the recent drought has caused forage and water depletions. There has also been a large increase in the amount of OHV use in bighorn sheep areas, which can cause stress to the animals. Additionally, the increased recreational use of roads could exacerbate habitat fragmentation impacts.

Bighorn sheep numbers are down from past stable numbers (Table 3.63). UDWR management goals are to increase all of these herds, as well as expanding the South San Juan Herd into BLM lands along the San Juan River from Bluff downstream to Lake Powell. These may be accomplished with supplemental transplants.

Table 3.63 Current Population and Objective for Desert Bighorn Sheep

Herd Unit	Current Population	Population Objective	% of Objective
San Juan, South	120	300	40
San Juan, North	50	100	50
San Juan, Lockhart	90	200	45

3.20.2.5 OTHER BIG GAME SPECIES

Within the Monticello PA, there are UDWR management areas for black bear (*Ursus americanus*) (Map 60) and mountain lion (*Felis concolor*). These represent areas where populations of these species are sufficient to support hunting. In the Intermountain West, black bears rarely use open habitats. Here, they are typically associated with forested or brushy mountain environments and wooded riparian corridors (Zeveloff and Collett 1988). Black bears tend to be nocturnal and are considered omnivorous. Preferred foods include berries, honey, fish, rodents, birds and bird eggs, insects, and nuts. Black bears obtain most of their meat from carrion. From November to April, bears enter a period of winter dormancy. Winter dens are located in caves, under rocks, or beneath the roots of large trees. The black bear is a representative guild species for old growth conifer habitat in the district. Impacts to this species can be partly assessed through the impact to this habitat type.

The mountain lion or cougar inhabits most ecosystems in Utah. However, it is most common in the rough, broken terrain of foothills and canyons, often in association with montane forests, shrublands, and pinyon-juniper woodlands (Fitzgerald et al. 1994). Lions feed primarily on large mammals, especially deer, but also eat coyotes, porcupines, beavers, mice, rabbits, birds, and even grasshoppers. Considering that the mountain lions primary prey item is the mule deer, addressing the impacts to mule deer habitat can best assess impacts to mountain lions.

3.20.3 Avian Species

3.20.3.1 Raptors

The Monticello PA includes considerable habitat of value to raptors. Raptors found in this area include eagles, falcons, hawks, harriers, and owls. Special habitat needs for raptors include nest sites, foraging areas, and roosting or resting sites. There are many red-tailed hawks and Cooper's hawk nesting areas as well as a few peregrine and golden eagle nest sites found within the Monticello PA. Raptors forage on small mammals or small birds. The most utilized raptor nesting habitats in the Monticello PA are generally found along riparian areas and/or cliff faces (personal communication between Tammy Wallace, BLM, and Thomas Sharp, SWCA Environmental Consultants, 2003).

The northern goshawk (*Accipiter gentiles*) is a representative guild species for old growth conifer habitat in the district. The golden eagle (*Aquila chrysaetos*) and the prairie falcon (*Falco mexicanus*) are representative guild species for cliff rock habitat. The ferruginous hawk and burrowing owl (*Athene canicularia*) are representative guild species for grassland habitat. The ferruginous hawk is also a representative guild species for desert scrub habitat. Impacts to these species can be partly assessed through the impact to these habitat types.

3.20.3.2 Waterfowl

Waterfowl in the Monticello PA is generally associated with the Colorado and San Juan river drainages. Some waterfowl can also be found in other riparian areas, such as ponds, reservoirs, and perennial streams. Some individuals or species breed, winter, or remain yearlong in the state, while larger numbers pass through the area during the spring and fall migration. Many species feed on insects and small fish or amphibians in addition to aquatic plant foods. In addition, some species feed frequently on upland grasses and forbs in grassy fields and meadows where such vegetation is succulent and habitat is sufficiently open to preclude hiding predators and enable rapid flight. Within the Monticello PA, the most important areas for waterfowl are the Colorado and San Juan rivers, as well as Recapture Reservoir and a couple of permanent ponds such as those in Cross Canyon and Nancy Patterson Canyon.

3.20.3.3 Upland Game Birds

There are several species of upland game birds within the Monticello PA (personal communication between Dean Mitchell, UDWR, and Thomas Sharp, SWCA Environmental Consultants, 2004; UDWR 2002; UDWR 2000). Some of the species include Gunnison sage-grouse, chukar (*Alectoris chukar*), mourning dove (*Zenaida macroura*), and wild turkey (both Merriams and Rio Grandes) (*Meleagris gallopavo*): and Gambel's quail (*Callipepla gambelii*). Chukars prefer open, rocky, barren lands and eat grass shoots, seeds, grain, and insects. Turkeys utilize open woodland or forest clearings, as well as riparian areas and eat acorns, fruit, and

seeds. Mourning doves are found in a variety of habitats, but mostly in farmlands and eat grains, small seeds, acorns, and fruit. Gambel's quail are found in drier habitats and feed on seeds, grain, and insects.

Gunnison sage-grouse are used as a representative guild species for sagebrush habitat in the district. Impacts to this species can be partly assessed through the impact to this habitat type. Sage-grouse require large expanses of sagebrush (*Artemisia* spp.) communities below 9800 feet, with a diversity of grasses and forbs and healthy riparian ecosystems (see Maps 66 and 54). The presence of each habitat type in healthy condition in close proximity to winter, lek, nesting, and brood-rearing habitat is essential. Population declines within the Monticello FO are attributed to habitat loss and fragmentation from increased roads, powerlines, sagebrush conversions to farmlands, and reduction in riparian areas. Other issues decreasing habitat quality are livestock grazing, drought, land treatments, and herbicides. The northeast side of the Monticello PA contains populations and habitat for this species.

3.20.3.4 Neotropical Migratory Birds

There are a wide variety of songbirds and neo-tropical migrants, which spend at least part of the year within the Monticello PA (Parrish et. al. 2002). These species utilize a wide variety of habitats found within the planning area. The Monticello FO maintains information regarding neotropical migratory birds by conducting annual breeding bird surveys in June of each year with the U.S. Geological Survey and partnering with the UDWR using mist netting and point count surveys.

Most of the bird species (especially neo-tropical) are decreasing in numbers throughout their ranges. This can be seen with the type of species listed on the threatened and endangered species list for San Juan County. According to Parrish et al. (2002), riparian habitats are used as either breeding or wintering habitat by Utah's birds almost twice as much as any other habitat type. Within Utah, 66 to 75 percent of all bird species use riparian habitats during some portion of their life cycle. Shrublands, forest, and additional habitat groups (e.g. water, rock, playa, agriculture, urban, and cliff) all are about equal and second to riparian when considering their importance to bird species. To prevent further population declines for bird species, the protection of these habitat types, especially riparian are crucial. Certain species can be followed more closely as indicators of overall ecosystem health.

Loggerhead shrikes habitat consists of open country with short vegetation: pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, agricultural fields, riparian areas, and open woodlands. The loggerhead shrike is a small avian predator that hunts from perches and impales its prey on sharp objects such as thorns and barbed-wire fences. The Loggerhead shrike is one of the few North American passerines whose populations have declined continent wide in recent decades. Changes in human land-use practices, the spraying of biocides, and competition with species that are more tolerant of human-induced changes appear to be major factors contributing to this decline.

The sage sparrow is a migrant that summers in Idaho and winters in Arizona, New Mexico and northern Mexico. It is found in sagebrush flats and desert scrub areas. It usually nests in sagebrush and typically feeds on insects and seeds. This species has been in recent decline. This decline is due to reduced, fragmented, and lost sagebrush steppe habitat that has resulted from increased wildland fires and cheatgrass invasion.

This sage thrasher's populations are mostly stable where suitable shrub-steppe habitat remains. However, its numbers have been dramatically reduced, and in some cases, local populations have been eliminated, where there has been wholesale conversion of sagebrush rangeland.

The Brewer's sparrow major habitat type is sagebrush shrublands. The Brewer's sparrow is by far the most abundant bird there during spring and summer. Recent (1980s and 1990s) surveys (Rotenberry et. al. 1999) have shown breeding numbers to be in significant decline throughout the species' range. The causes are uncertain, but they may be related to fundamental changes in shrubland ecosystems being brought about by agriculture, grazing, and the invasion of exotic plant species.

The warbling vireo occupies predominantly riparian habitat, but may also use a variety of other habitats including oak/mountain shrub and deciduous forest. It builds its nests in the forked limbs of trees from one to 40 meters above the ground at elevations ranging from sea level to over 3,000 meters. The species appears well adapted to human landscapes, as nests have been found in neighborhoods, urban parks, orchards, and farm fencerows. Its reproductive success in these areas has never been quantified, however.

The green-tailed towhee prefers species-rich shrub communities within shrub-steppe habitats, and disturbed and open areas of montane forest, often created by forest fires. The bulky nests of this species are concealed in shrubs, but often are prone to predation. In winter, individuals are common in dense mesquite (*Prosopis* spp.) scrub habitat along desert washes. Breeding bird survey data suggest that populations have been stable overall since 1966, with no significant broad trends (Dobbs et. al. 1998).

The juniper titmouse is a year-round resident of the pinyon-juniper and pine woodlands; it is also common in suburbs. It nests in snag holes, natural and made by woodpeckers. They typically feed on fruit, seeds and insects. This species is generally tolerant of human encroachment.

The gray flycatcher is a migrant species that summers in Utah and Idaho and winters in Mexico. It nests in arid pinyon-juniper woodlands and sagebrush areas. It builds its nest in the crotch of juniper trees or sagebrush. It feeds exclusively on insects. This species is still quite common but faces the same risks that other Sagebrush guild species face.

No known population of yellow-billed cuckoo exist at present within the Monticello PA (personal communication between Tammy Wallace, BLM, and Thomas Sharp, SWCA Environmental Consultants, 2003). The yellow-billed cuckoo, however, is a neotropical migrant that utilizes riparian valleys throughout the state. The western yellow-billed cuckoo is associated with cottonwoods and Riparian cover, which provides nesting and brood-rearing habitat. Western yellow-billed cuckoos are obligate riparian nesters and are restricted to more mesic habitat along rivers, streams and other wetlands. Yellow-billed cuckoo are discussed further under the sensitive species section of the document.

The Southwestern willow flycatcher (SWFL) utilizes and breeds in patchy to dense riparian habitats along streams and wetlands near or adjacent to surface water or saturated soils. These dense patches are often interspersed with small openings, open water, and/or shorter/sparser vegetation, creating a mosaic habitat pattern. Population declines are attributed to numerous, complex, and interrelated factors such as habitat loss and modification, invasion of exotic plants into breeding habitat, brood parasitism by cowbirds, vulnerability of small population numbers,

and winter and migration stress. SWFL are discussed further under the sensitive species section of the document.

Song sparrows are relatively common in riparian habitat. They build open-cup nests near fresh water wherever suitable cover and insect food are present.

Spotted towhee breed in wide variety of plant associations, all characterized by dense, broadleaf shrubby growth (variously described as brush, thickets, or tangles). This shrubby growth is typically only a few meters tall, with or without emergent trees, and provides deep, sheltered, semi-shaded litter and humus on ground, and a screen of twigs and foliage close overhead.

Mallard duck success in the wild reflects its adaptability to varied habitats, its hardiness in cold climates, its catholic food tastes, and its tolerance of human activities. The bulk of the Mallard's diet outside the breeding season consists of seeds of both natural wetland plants and agricultural crops. Although the mallard is the most heavily hunted duck species in North America, its populations remain more or less steady, and the species is not considered in danger. Nevertheless, managers carefully monitor and manage mallard populations and their habitats to ensure the continued prosperity of this extremely popular and successful duck (Drilling et al. 2002).

Several of the migratory birds can be used as guild species for different wildlife habitat types. The loggerhead shrike is associated with desert shrub habitat, the sage sparrow, sage thrasher and Brewer's sparrow are associated with sagebrush and perennial grassland, the warbling vireo, green-tailed towhee and blue grouse are associated with oak mountain shrub habitat, the juniper titmouse and gray flycatcher are associated with pinyon-juniper habitat and yellow-billed cuckoo, southwestern willow flycatcher, song sparrow, spotted towhee and mallard duck are associated with riparian habitat. For the purposes of this analysis, impacts to these habitats will be used, in part, to assess impacts to these species. Unless stated above, the exact population status of all these species in the Monticello PA is not known.

3.20.4 Fish and Amphibian Species

The Monticello PA provides habitat for fish and amphibian species because of the variety of aquatic habitats found within the resource planning area, which include rivers, streams, ponds, springs, and marsh areas. Aquatic species in the Monticello PA include several TES species such as bonytail, Colorado pikeminnow, razorback sucker, roundtail chub, bluehead sucker, and flannelmouth sucker. Table 3.64 illustrates the current UDWR inventories of fisheries within the Monticello PA (personal communication between Tammy Wallace, BLM, and Thomas Sharp, SWCA Environmental Consultants, 2003).

Amphibians rely on water during a portion of their life cycle and are typically found near water sources. The aquatic habitat in the Monticello PA is generally associated with the Colorado and San Juan river drainages and perennial water sources. The BLM in partnership with U.S. Geological Survey have started conducting amphibian surveys since 2003 on two riparian areas within the Monticello PA. These include Indian Creek and Arch Canyon. These studies are to determine species and abundance that are within these canyons. To date, the species found in Arch Canyon include: Woodhouse's toad (*Bufo woodhousii*), Red-spotted toad (*Bufo punctatus*), and Northern leopard frog (*Rana pipiens*). In Indian Creek, Bufo species of tadpoles and a few red-spotted toads were found.

Table 3.64. Inventory of Fisheries within Monticello PA

FO Area	Species Present
Colorado River	Colorado pikeminnow, razorback sucker, bonytail, humpback chub, flannelmouth sucker, bluehead sucker, channel catfish (*Ictalurus punctatus*), roundtail chub, speckled dace (*Rhinichthys osculus*), Plains killifish (*Fundulus zebrinus*), fathead minnow (*Pimephales promelas*), red shiner (*Cyprinella lutrensis*), sand shiner (*Notropis ludibundus*), smallmouth bass (*Micropterus dolomieu*), largemouth bass (*Micropterus salmoides*), carp (*Cyprinus carpio*), black bullhead (*Ameiurus melas*), walleye (*Stizostedion vitreum*)
San Juan River	Colorado pikeminnow, razorback sucker, flannelmouth sucker, bluehead sucker, channel catfish, roundtail chub, speckled dace, fathead minnow, red shiner, sand shiner, smallmouth bass, largemouth bass, carp, black bullhead, yellow bullhead (*Ameiurus natalis*), walleye, northern pike (*Esox lucius*)
Arch Creek	Flannelmouth sucker, mountain sucker, speckled dace
Montezuma Creek	flannelmouth sucker, bluehead sucker, channel catfish, roundtail chub, speckled dace, carp, fathead minnow, red shiner, sand shiner

*Where *fathead minnow, red shiner, sand shiner* are added in italics, these are not necessarily documented. However, they are prolific in the mainstream Green and Colorado rivers. Thus, it is likely that they are in at least the lower extremities of these smaller tributaries.

3.20.5 Other Wildlife Habitat

The Monticello PA contains a high diversity of small mammals because of the variety of habitats within the boundaries. Other wildlife species that are found within the field office area includes small mammals (cottontails, jackrabbits, squirrels, ground squirrels, mice, voles, and shrews), bats, reptiles, and invertebrate (insects). Bats roost in tree and rock crevices and caves. They rely on insects for food and are typically found near water sources feeding on insects (Oliver 2000). Reptiles have become adapted to living and reproducing entirely on land. They include turtles, lizards, and snakes. The Monticello PA contains a high diversity of reptile because of the variety of habitats found within the resource management area. Most turtles are aquatic, although a few live entirely on land. Lizards are found in grasslands and shrub deserts, boulders, cliffs, trees, and loose sand. Snakes can be aquatic, while some live in trees, and some live in burrows.

3.21 Woodlands

3.21.1 Resource Overview

Woodland resources are generally defined as those tree species that are used as non-sawtimber products and are sold in units other than board feet. Woodland resources within the Monticello PA consist primarily of pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*). Pinyon–juniper woodlands are characterized by trees that are less than 33 feet tall.

Closed conifer woodlands (with a greater than 60 percent canopy cover) are dominated by pinyon pine, with Utah juniper as a common associate. This is the most extensive forest type in Utah exceeding, in acreage, all other forests combined (Lanner 1984). Utah juniper is the more dry-climate-adapted of the two species, often serving as nurse trees for pinyon in well-developed woodlands. The open conifer woodlands (characterized by a 25 to 60 percent canopy cover) form

a wide landscape and are found at elevations of 4,000 to 7,000 feet. Major cover types include Utah juniper with associated shrub species such as big sagebrush (*Artemisia tridentata*) and native bunchgrasses. Utah juniper has increased with grazing, and, as grazing has intensified, the species has spread from ridges and mountain slopes to deep valleys. Most of the area where pinyon/juniper woodland currently dominates was historically characterized by wildland fires burning every 15 to 50 years (Kitchen 2004, Miller and Tausch 2001). Both pinyon and juniper seedlings are tolerant of shade, but as wildland fire opens up the canopy cover, juniper seedlings tend to establish quickly in cut or burned areas, while pinyon seedlings tend to establish best under a canopy cover.

Cottonwood (*Populus* spp.) is a component of the Monticello PA's woodland resources that grows in riparian areas, with value to the Navajo Nation for ceremonial purposes. Cottonwood contributes to the proper functioning of riparian systems, in that it provides bank stabilization, shade, and wildlife habitat.

Timber resources within the Monticello PA consist of small stands of ponderosa pine, Douglas fir (*Pseudotsuga menziesii*), cottonwood, quaking aspen (*Populus tremuloides*), oak species (*Quercus* spp.), and box elder (*Acer negundo*). The quantities and concentrations of these timber species are too low to have commercial value, though they do have scenic, habitat, and watershed resource values. No commercial sales or harvesting of any timber species take place within the Monticello PA.

3.21.2 CURRENT MANAGEMENT PRACTICES

The Monticello FO manages woodland products by controlling harvests and sales. It sells woodland resources in informally-designated areas for fuel wood, fence posts, Christmas trees, and other uses as demand arises. Fuel wood harvests are limited to pinyon and juniper; on-site harvests of trees by recreationists, usually as fuel for campfires, are allowed except where specifically excluded (BLM 1991a).

The Monticello FO has conducted 72 pinyon-juniper treatment projects and treated 32,191 acres, primarily in the 1960s and 1970s, to remove pinyon-juniper and convert woodlands to grasslands for livestock and wildlife forage (BLM 2004f). Because of subsequent re-growth of pinyon-juniper stands, many of these project areas are now in need of re-treatment and additional management. These projects are being maintained through the Moab Fire District. Re-treatment would consist of prescribed burning and/or other types of treatments (e.g., mechanical, chemical) to reduce fuel loads (BLM 1989).

3.21.2.1 ALLOCATIONS

In accordance with Monticello FO policy, ten percent of the value of all woodland sales is retained at the Monticello FO to defray the cost of road maintenance in woodcutting areas, and 40 percent of the value of woodland sales is retained to defray the costs of land reclamation.

The current management of woodland resources within the Monticello PA is guided by decisions made in the San Juan RMP (BLM 1991a). This plan identifies management actions to support the woodland management objectives of 1) allowing use of woodland products in areas specified for this use; and 2) preserving woodland products in other areas to meet RMP goals. The current management actions for the resource, as specified in the RMP, include:

- Assigning all forestlands in the resource management area to one of four categories:
  1. Lands available for intensive management of forest products
  2. Lands available for restricted management of forest products
  3. Lands where forests are managed to enhance other uses
  4. Forestlands not available for management of forest products
- Using the RMP goals and management objectives to determine which areas are assigned to each category, and imposing conditions on forest products use; and
- Prior to any land treatment project that would remove woodland products, striving first for woodland sales and second for free use of woodland products.

The current management guidance for developing forest resources is:

- The Monticello FO may develop forest resources for sustained yield, where feasible, in areas where forest product sales are allowed under the RMP; and
- The RMP may impose conditions of use or reclamation requirement in certain areas.

3.21.2.2 CURRENT CONDITIONS

It is estimated that pinyon and juniper woodlands have increased ten-fold over the past 130 years throughout the Intermountain West (Miller and Tausch 2001). Wildland fire suppression and lack of thinning have contributed to dense, over-mature stands of pinyon-juniper throughout the Monticello PA, and woodland fuel loading is increasing (see Section 3.4 – Fire Management). The inadequate harvesting or thinning of pinyon-juniper woodlands within the PA is also creating conditions in which growth and succession of woodland stands are exceeding their carrying capacity, thus causing a decline in understory vegetation and creating stresses from competition that lead to tree mortality. Stressed trees are more susceptible to disease and insect infestations, further contributing to fuel loading of dead/down wood. These conditions are also increasing the potential for uncontrolled, catastrophic wildland fires. Noxious weed species could replace woodland species in those woodland areas that are burned by uncontrolled, catastrophic wildland fire.

Since the approval of the current RMP, drought has weakened the pinyon and juniper trees, and an infestation by the Ips engraver beetle (*Ips* spp.) has caused a severe die-off. Based on the current trend, the infestation is likely to increase, exacerbated by current drought conditions and the competitive stresses described above. Currently, there is no program to contain the infestation, and though the rate of infestation and the degree of damage to woodland resources are unknown, the potential for a significant loss of woodland and timber resources is high. The loss of these resources would result in more fuel loading, further contributing to conditions that could increase the potential for catastrophic wildland fires (personal communication between Tammy Wallace, BLM, and David Harris, SWCA, March 21, 2003).

Past management practices to improve grazing habitat for wildlife and cattle included chaining of pinyon-juniper stands. This management technique is no longer a preferred treatment and is not being used at this time. Currently, a program is being developed (in coordination with the Moab FO) to thin the woodland understory using prescribed fire to decrease fuel loading/ hazardous fuels and to maintain old chained and reseeded areas (personal communication between Tammy Wallace, BLM, and David Harris, SWCA, March 21, 2003).

Creation of wilderness study areas (WSAs) within the PA have closed these areas to woodcutting, prescribed burning, and other woodland management options, with potentially long-term, adverse impacts on woodland resources. The WSAs also preclude commercial harvesting and access trail construction. The WSAs are, in effect, woodcutting and prescribed burning exclusion zones. These conditions support the growth and succession of woodland stands that exceed their carrying capacity, which can cause a decline in understory vegetation, and create stresses from competition that lead to tree mortality, similar to conditions and effects described above for woodland resources throughout the Monticello PA.

Currently, there is no woodland resource monitoring in the Monticello PA, except unscheduled, occasional fuel load assessments being made by BLM fire personnel (personal communication between Tammy Wallace, BLM, and David Harris, SWCA, March 21, 2003).

Unmanaged woodland harvesting is currently damaging surface cultural resource sites and creating a network of unauthorized roads and trails that is degrading visual quality, increasing soil erosion and sedimentation, and affecting overall watershed quality.

In addition to the previously described issues in upland woodlands, in riparian zones, cottonwood stands are being encroached upon and impacted by tamarisk (*Tamarix* spp.) and Russian olive, resulting in decreased wildlife habitat and declines in overall watershed health.

3.21.3 Resource Demand and Forecast

The current use of woodland resources within the Monticello PA is non-commercial harvesting of pinyon and juniper for fence posts, firewood, and Christmas trees. Such harvesting is allowed with a permit issued by the Monticello FO. Permits are not issued for collection of dead and downed cottonwood for ceremonial purposes.

A potential conflict exists between the Navajo Tribe's need to use the resource as fuel-wood and the Monticello FO's need to manage for woodland sustainability and health. Cedar Mesa is an area where the conflict is most obvious between the BLM and Tribal resource needs, as most of Cedar Mesa is currently a WSA, which does not allow for firewood collection. Native Americans also want to be able to collect live cottonwood; however, this species is valuable for wildlife habitat, riparian function, and overall watershed health, and is being replaced by invasive species including tamarisk.

The limited information available regarding the current level of woodland harvesting is derived from data on woodland harvesting permits sold by the Monticello FO. For FYs 2000–2003, the trend indicates an increasing number of permits were issued for harvesting wood products (BLM 2003f). The actual level of woodland harvesting within the Monticello PA is unknown because 1) resource monitoring is very limited; 2) the FO area is large, remote, and difficult to access; and 3) it is assumed that some people cut wood without purchasing a permit.

The demand for woodland products (including firewood) is expected to increase. The number of cords of firewood that were sold over recent years has increased from 898 cords in 2000 to 1,137 cords in 2003 (BLM 2003f). The sale of Christmas trees is highly variable, and fluctuates from year to year. There are no limitations on woodland sales except in fire exclusion areas (designated as Wilderness Areas and WSAs).

4.0 ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

4.1. INTRODUCTION

This chapter analyzes the environmental consequences of the management decisions proposed under the five alternatives described in Chapter 2. These decisions were developed as alternative ways of managing and allocating resources and uses of the public lands within the Monticello Planning Area (PA) to balance these uses under the multiple-use, sustained-yield mandate of the Federal Land Policy and Management Act (FLPMA). The Bureau of Land Management (BLM) planning decisions about resource use and management in the Monticello Planning Area (PA) will be based on this analysis. Note that there are two sections on management decisions common to the alternatives. One section discusses management decisions shared by all of the alternatives (A, the No-Action Alternative, and the Action Alternatives); the other section describes decisions shared by only the Action Alternatives (B through E).

Alternative A (No Action) continues the existing management practices defined in the San Juan Resource Management Plan (RMP). Alternative B would minimize human activities within the Monticello PA. Alternative C would protect important environmental values and sensitive resources while allowing the development of oil and gas resources, recreational facilities, and other human uses. Alternative D would emphasize resource development and human consumption of resources. Alternative E would minimize human activities and manage more acreage for a natural state, primitive recreation, and solitude. This draft RMP/draft Environmental Impact Statement (DRMP/DEIS) provides a landscape-scale, "big picture" analysis because in most cases the exact locations of projected development and other changes are not known at this time. Impacts for each specific resource or use presented in Chapter 3 are discussed under each alternative. *Impacts* are defined as modifications to the existing environment brought about by implementing an alternative. They can be beneficial or adverse, result from the decisions directly or indirectly, and be long-term, short-term, temporary, or cumulative.

BLM staff used existing data, current methodologies, professional judgments, and projected actions and levels of use to compile the analysis, which takes into account the mitigation measures and stipulations described in Chapter 2 and Appendices A, F, I, and M. If impacts are not discussed, the analysis has indicated that none would occur, or their magnitude would be negligible.

When impacts of a decision are the same under more than one alternative, they are disclosed under the first applicable alternative discussed, and then referenced under other pertinent alternatives.

Chapter 4 discusses and analyzes the environmental consequences of program decisions on each listed resource or use. Resources and uses are presented in alphabetical order. The environmental consequences of the decisions imposed by other programs on that resource are also delineated for each of the five alternatives. For half of the resources, the analysis identifies the impacts of each of the other program decisions on that resource value or use, by alternative. For example, the impacts of recreation decisions on vegetation are listed under each of the five alternatives:

Vegetation

Impacts of Recreation Decisions on Vegetation

Alternative A
Alternative B
Alternative C
Alternative D
Alternative E

Resources and uses organized this way include fire management, non-WSA lands with wilderness characteristics, paleontological resources, recreation, riparian resources, socioeconomic conditions, soils and water resources, special designations, special status species, travel management, vegetation, and wildlife and fisheries.

For resources and uses largely unaffected by other program decisions, the impacts are grouped under each of the five alternatives. This format made the disclosure of environmental consequences on these resources easier to understand. For example, the impacts of other program decisions on lands and realty under Alternative A appear all together:

Lands and Realty

Impacts of Alternative A
Impacts of Alternative B
Impacts of Alternative C
Impacts of Alternative D
Impacts of Alternative E

Resources and uses organized this way include air quality, cultural resources, health and safety, lands and realty, livestock grazing, minerals, visual resources, and woodlands.

4.1.1. ANALYTICAL ASSUMPTIONS AND GUIDELINES

Following are the general assumptions used to assess all alternatives. Assumptions specific to an individual resource value, use, or program (e.g., wildlife habitat, recreation, or fire management) appear at the beginning of the analysis for that section.

- All resource decisions recognize valid existing rights.
- The entire planning area is allocated one the following leasing stipulations for oil and gas development:
  - Open subject to standard lease terms;
  - Timing limitations and controlled surface use;
  - No surface occupancy; or
  - Closed.
- BLM would have the funding and work force to implement the selected alternative.
- Additional National Environmental Policy Act (NEPA) analysis would be required to determine the impacts from site-specific actions (activity plans) and could identify additional mitigating measures.
- All lands identified for disposal are free of encumbrances and can be disposed of. This includes cultural-resource clearances.

- Demand for recreational activities (both dispersed and concentrated), energy production, vegetative resources, and wildlife use (nonconsumptive and consumptive) will increase over time.
- Short-term impacts are those that would last for fewer than 5 years.
- Long-term impacts are those that would last for 5 years or more.
- State highways and county B class roads through the Monticello PA will remain open and accessible.
- All decisions, projects, activities, and mitigation for the alternatives would be completed as described in Chapter 2 and Appendix A (Surface Stipulations Applicable to Oil and Gas Leasing and Other Surface Disturbing Activities).
- Acreages were calculated using GIS technology, so there may be slight variations in total acres between disciplines. These variations are negligible and will not affect analysis.
- The decisions of the RMP apply only to public lands managed by the BLM. They do not apply to inheld or adjacent private, state, or other lands.
- Reasonable access across BLM lands to state lands must be provided under all alternatives.

4.1.2. Assumptions and Methodology for Mineral Development

The BLM prepared a mineral potential report (MPR) for the Monticello PA in July 2005. The report outlined the potential for occurrence and reasonable foreseeable development (RFD) of all mineral resources for the Monticello PA for the next 15 to 20 years. The potential for future oil and gas activity and the associated surface disturbance are presented in Table 4.1, and the predicted geophysical activity and its consequences are outlined in Table 4.2. This activity includes potential mineral development and geophysical activities on state, private, United States Department of Agriculture Forest Service (USFS), tribal, BLM, and National Park Service (NPS) lands within the Monticello PA. Table 4.3 shows the existing and predicted cumulative surface disturbance for all of these lands.

Table 4.1. Predicted Oil and Gas Drilling and Associated Surface Disturbance for Each Development Area within the Monticello PA (see Map 14)

Development Area	Number of Wells Projected to Be Drilled	Estimated Future Surface Disturbance from Drilling Wells (acres)
Paradox fold and fault belt (per year)	1–6	9.6–57.6
Blanding sub-basin (per year)	3–13	28.8–124.8
Monument upwarp (per year)	1–2	9.6–19.2
Totals per year for next 15 years	**5–21**	**48.0–201.6**
Average per year for next 15 years	**13**	**124.8**
Total for next 15 years	**195**	**1,872.0**

Source: BLM 2005b.

Table 4.2. Predicted Amount of Geophysical Activity and Associated Surface Disturbance for Each Development Area within the Monticello PA

Development Area	Projected Linear Miles of Geophysical Surveys	Estimated Future Surface Disturbance from Geophysical Surveys (acres)
Paradox fold and fault belt (per year)	24–53	43.6–96.4
Blanding sub-basin (per year)	18–40	32.7–72.7
Monument upwarp (per year)	9–20	16.4–36.4
Totals per year for next 15 years	**51–113**	**92.7–205.5**
Average per year for next 15 years	**82**	**149.1**
Total for next 15 years	**1,230**	**2,236.4**

Source: BLM 2005b.

Table 4.3. Total Existing and Predicted Surface Disturbance from All Drilling Activities and Predicted Reclamation within the Monticello PA

	Number of Wells	Total Surface Disturbance
Total existing surface disturbance	**1,615**	**15,504**
Active wells	1,135	10,896
Abandoned wells	480	4,608
Future surface disturbance for the next 15 years	**195**	**1,872**
Gross surface disturbance for the next 15 years	**1,810**	**17,376**
Total predicted reclamation in the next 15 years	**527**	**5,059**
Reclamation of future dry wells	27	259
Reclamation of existing abandoned wells	480	4,608
Reclamation of future abandoned wells	20	192
Total net surface disturbance for the next 15 years		**12,317**

Source: BLM 2005b.

Predicted surface disturbance for oil and gas development by alternative on BLM lands was calculated by multiplying the percentage of BLM lands open for development under each of the alternatives by the total number of wells predicted for all lands. For oil and gas, the resultant number of wells was multiplied by surface-disturbance assumptions per well to arrive at the total disturbance (Table 4.4). Geophysical disturbances were calculated in the same manner (Table 4.5). It should be noted that the total number of wells cited in the RFD report do not represent upper limits on the number of wells that could be drilled in the Monticello PA during the life of the plan (LOP). The RFD is not intended to and does not place a cap on the total number of wells that may be drilled in the Monticello PA under this plan. The RFD well totals represent the BLM's best estimate of future reasonably foreseeable development to allow the BLM to assess the impacts of this development and inform the decision maker about anticipated consequences of the alternative management decisions. The total number of wells permitted would be determined through site-specific NEPA analysis of development projects.

Table 4.4. Summary of RFD-Predicted Wells and Surface Disturbance for Oil and Gas on BLM Lands

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Blanding sub-basin					
Avg. number of wells/LOP	41	38	41	41	38
Avg. surface disturbance/yr.	26	24	26	26	24
Avg. surface disturbance/LOP	394	363	395	395	364
Monument upwarp					
Number of wells/LOP	7	8	9	9	7
Avg. surface disturbance/yr.	5	5	5	6	5
Avg. surface disturbance/LOP	69	79	82	86	71
Paradox fold and fault belt					
Number of wells/LOP	25	20	24	25	18
Avg. surface disturbance/yr.	16	13	16	16	11
Avg. surface disturbance/LOP	236	194	233	240	170

[1] These numbers are based on several calculations that have been prorated and subsequently rounded, so there may be slight discrepancies in the summary numbers. For example, under Alternatives C and D, nine wells are predicted, but the resulting surface disturbance numbers are slightly different. This is a result of the base well numbers being rounded. You could assume under Alternative C that the well number was closer to 9, whereas under Alternative D the well number was closer to 10. Detailed information on the calculations is available in the Monticello FO.

Table 4.5. Summary of Geophysical Disturbances on BLM Lands

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Blanding sub-basin					
Avg. miles/yr.	10	9	10	10	9
Avg. miles/LOP	205	188	205	205	188
Avg. acres/yr.	18	16	18	18	16
Avg. acres/LOP	271	249	271	271	250
Monument upwarp					
Avg. miles/yr.	5	5	6	6	5
Avg. miles/LOP	83	95	99	103	85
Avg. acres/yr.	8	9	10	10	8
Avg. acres/LOP	120	137	143	149	123
Paradox fold and fault Belt					
Avg. miles/yr.	18	15	17	18	14
Avg. miles/LOP	271	224	269	277	211
Avg. acres/yr.	33	28	33	34	26
Avg. acres/LOP	495	408	489	504	388

Table 4.5. Summary of Geophysical Disturbances on BLM Lands

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
All RFD areas					
Total miles/yr.	37	34	38	39	32
Total acres/yr.	59	53	61	62	50
Total miles/LOP	559	507	572	585	484
Total acres/LOP	886	794	903	924	761

4.1.3. Types of Impacts to Be Addressed—Direct, Indirect, and Cumulative

Direct impacts result from an alternative affecting a specific resource and generally occur at the same time and place. *Indirect impacts* can result from one resource affecting another (e.g., soil erosion and sedimentation affecting water quality) or can happen later in time or farther away (e.g., disturbed soil moving downslope into a stream and affecting water quality), but they are still reasonably foreseeable. *Long-term impacts* persist for years (longer than 5 years, for this DRMP/DEIS). *Short-term impacts* cause temporary or ephemeral changes to the environment that end once the activity stops (those that persist for less than 5 years, for this document), such as air-polluting emissions caused by earthmoving equipment during construction. Short-term impacts result in changes to the environment that are stabilized or mitigated rapidly, such as surface disturbance that is revegetated immediately after earthmoving is completed. Impacts can vary from a slightly discernible change to a full modification or elimination of the environmental condition. Cumulative impacts can also result from past, present, and reasonable foreseeable future actions by federal, state, and local governments; private individuals, and operators in or near the Monticello PA.

4.2. Impacts to Critical Elements

The following critical elements are not impacted by the decisions proposed in the alternatives, or are adequately mitigated to prevent significant impacts, and will not be discussed further in this analysis. The other critical elements are addressed in further detail in the analysis of the DRMP/DEIS.

4.2.1. Impacts of Alternatives on Prime and Unique Farmlands

All alternatives in this DRMP/DEIS coincide with the intent of the Secretary of Agriculture's Memorandum 1827 for prime land. The Monticello PA does not include any prime farmland, nor do any of the alternatives impact any prime farmland soils (NRCS 1993).

4.2.2. Impacts of Alternatives on Invasive and/or Noxious Non-native Plants

Vegetation and surface-disturbing changes would result from all the alternatives in this DRMP/DEIS. These disturbances all increase the risk of propagation of exotic, invasive or noxious nonnative plants. However, effective implementation of management decisions common

to all of the alternatives would prevent the risk from becoming greater than at present and help reduce risk in the future.

4.2.3. INCOMPLETE OR UNAVAILABLE INFORMATION

This study was done using the best available information, data that are believed sufficient to make a programmatic analysis of the impacts of multidisciplinary decisions on management direction for the entire PA. This information includes, but is not limited to, landscape-level data, such as geophysical analysis program (GAP) vegetation data, Soil Survey Geographic database (SSURGO) soils data, and FO information on wildlife habitat boundaries. Additional site-specific data (including cultural-resource and threatened, endangered, and sensitive (TES) surveys) will be required to complete NEPA analysis necessary before actions can be implemented.

4.3. ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES

4.3.1. AIR QUALITY AND CLIMATE

The Monticello PA is located in a region designated as unclassifiable for PM_{10} and unclassifiable/attainment for all other airborne pollutants [See 40 CFR, Part 81] (EPA Region VIII 2005). The five proposed management alternatives have been evaluated using requirements and assumptions that identify potential air quality issues as accurately as possible for each alternative. The following assumptions were made and considered in analyzing the impacts of the proposed RMP decisions on air quality within the PA:

- Mineral extraction potential in the Monticello PA was identified as low for the majority of commodities assessed: coal, potash and salt, tar sands, copper, and gold. A moderate to high extraction potential was identified for uranium/vanadium, depending on the mining area, and a high extraction potential exists for limestone, building stone, and clay. The extraction potential for sand and gravel was rated as moderate to high depending on the relative distance from an established road.
- Because mineral extraction requires a permit, and a range of regulations exist to ensure that pollutant levels do not increase above identified thresholds and/or air quality criteria, it is assumed that extraction operations would be carried out in compliance with existing policies and regulations at both the state and federal level. It is further assumed that roads, excavations, and other disturbances resulting from mineral development in areas with soils susceptible to wind erosion (i.e., sensitive soils) would be appropriately treated (piles covered where appropriate, graveling or surfactants applied to roads, etc.) to reduce fugitive dust generated by traffic and related activities. Such treatments should also be applied on local and resource access roads that represent a dust problem. Lower speed limits, enforced by the appropriate authority, would also limit dust in project and adjacent areas.
- In the absence of quantitative data about local extraction activities, and because state and federal preconstruction/excavation permit processes must assess cumulative impacts of proposed activities to ensure that those activities would not contribute to noncompliance or violations of the national ambient air quality standards (NAAQS), management decisions related to mineral extraction are not projected to generate emissions that result in noncompliance with air quality criteria. Therefore, this section will not discuss the

management of these resources any further. Development potential for mineral resources in the Monticello PA is discussed in greater detail in Section 4.3.7, Minerals.

- Several areas with high to moderate fluid-hydrocarbon-extraction potential (oil and gas wells) are identified in Section 4.3.7, Minerals. Existing wells are relatively common in the Monticello PA. The total number of wells (oil and gas) within the PA (which includes lands other than those managed by the BLM) is 1,615. If approved, future drilling is projected to occur at a rate of 5 to 21 wells per year over the next 15 years.
- To assess the potential for air quality impact from oil and gas extraction, it was assumed that the average surface disturbance per existing well would be similar for future well sites. An average disturbance area of 9.6 acres per well was estimated using existing roads and pipelines associated with similar locations where oil and gas extraction has occurred. This figure, multiplied by the total number of wells, was used to calculate a projected area of disturbance of 15,504 acres, based on the predicted RFD scenario for oil and gas (BLM 2005d). This average disturbance area (9.6 acres per well) is assumed to be the same for all the alternatives.
- For the purposes of this analysis, the number of wells drilled in any of the RFD areas (Blanding sub-basin, Monument upwarp, and Paradox fold and fault belt) was assumed to be proportional to the acreage of land open for mineral development under that alternative. The percentage of available acreage and predicted number of wells on BLM lands within the three RFD areas were used to analyze air quality impact from future oil and gas development within the Monticello PA. The impacts on air quality were estimated for the lifetime of the RMP.
- Full-scale dispersion modeling was not conducted for this analysis. To better understand the impact of proposed oil and gas development on air quality in the Monticello PA, basic dispersion principles and generalized plume-behavior calculations were used (Walcek 2002, Holzworth 1972, ARL 2006, ES&H 2006, NWS 2006). Conclusions and projections on air quality impacts are therefore semi-quantitative to qualitative in nature and are intended to forecast potential trends, rather than identify absolute air-pollutant concentrations. Highest possible estimates were used to ensure that the findings would not underestimate future impacts. For example, it was assumed that all proposed wells would go into production within 15 years, then operate at full production levels with no "dry holes" or "shut ins," while in reality a small percentage of dry holes and shut-ins would be expected. All emission sources were assumed to operate at their average maximum rates simultaneously throughout the lifetime of the project. In reality, some sources would only emit during a portion of any given day or year. It was also assumed that primary road traffic would occur during working, daylight hours (7:00 a.m. to 7:00 p.m.), particularly during the construction period of the wells, and that 50% control of particulate (fugitive dust) emissions would be maintained by watering.
- For each development scenario, the number of expected compressors was based on expected gas production, expected number of new wells per year, expected gas production potential of each well, and proximity to other wells. In the absence of yearly data, and because all analyses were meant to represent the total development throughout the lifetime of the RMP, the total number of wells proposed for each alternative was used. The number of compressors necessary for each alternative was based on a detailed air quality model prepared for the BLM Vernal FO that analyzed the impacts of oil and gas development on air quality and

determined the average number of compressors (0.063 per well) required for projected oil and gas development (Trinity and Nicholls 2006). To reflect the potentially great distance between wells and the separation between RFD areas, it was assumed that a minimum of two compressors would be required per area. The analysis also assumed there would be one glycol dehydrator per gas well, with a well spacing of 40 acres.

- Generalized projected emissions from compressors include CO, NO_x, SO_2, PM_{10}, and $PM_{2.5}$. Emission rates were calculated using AP-42 factors for 4-stroke, lean-burn engines (EPA 2003e). NO_x emission rates for compressors were calculated based on a best available control technology (BACT) limit of 0.7 grams per horsepower hour (g/hp-h). Emission rates calculated for each pollutant are assumed to be even throughout the year and are displayed in Table 4.6.

Table 4.6. Emission Rates Used for Estimating Compressor Emissions

Pollutant	Emission Rate (g/s)
CO	5.78e-01
NO_x	1.94e-01
PM_{10}	1.04e-02
$PM_{2.5}$	1.04e-02
SO_2	6.10e-04

- An average emission rate of 1.45×10^{-7} grams per second (g/s) of hydrogen sulfide (H_2S) was assumed for all glycol dehydrators (Trinity and Nicholls 2006). All H_2S was assumed to convert to SO_2 for the purposes of this assessment (ATSDR 1999).
- Based on the previous discussion of local wind conditions, a generous assumption of 3 miles per hour (~1.5 m/s) winds and an upper dispersion boundary of 50 meters were applied (ARL 2006).
- It was assumed that well placement and pad construction would produce the most fugitive dust emissions and that construction activities would occur during the 12-hour period from 7:00 a.m. to 7:00 p.m. A total of 10 construction vehicles operating on-site at any one time was estimated; 4 of these would be stationary (e.g., compressors, generators, pumps and similar equipment), and the others were expected to be 2 heavy (6 tons or more), 2 midrange (3 tons), and 2 light-duty (2-ton) mobile vehicles. Soil moisture content of 5% or less and soil silt content of 5% were assumed. Soil silt content was approximated from the relative percentage of silty soils present in each alternative footprint. Mean vehicle speed on the construction site was assumed to be 10 miles per hour. It was assumed that all 6 mobile vehicles would be working at any one time on-site. This scenario is assumed to be representative of periods of intense activity and, therefore, overestimates critical conditions.
- It was assumed that all exposed disturbance areas (e.g., work and staging areas and roads) on the construction site would be watered as needed during the construction period. Because soils within the project area vary in their susceptibility to wind erosion, a generous control efficiency of 37% for all exposed/graded areas and 3% for all well-traveled roads was assumed to allow for critical conditions (CEQA 2002).
- PM_{10} emissions related to travel to and from the proposed well sites were assumed to be less intense than construction emissions because well sites will be relatively far apart and

presumably will not be visited simultaneously. Therefore, air quality impact resulting from post construction operation, maintenance, and public use of created roads was assumed to be sporadic and spread out over a longer time period than during the intensive construction period.

- Projected concentrations were not compared to prevention of significant deterioration (PSD) Class I and II increments because of the limitations of the analysis. It was assumed that regulatory PSD increment consumption analyses are the responsibility of the state air quality agency (under Environmental Protection Agency [EPA] supervision) and would be conducted where appropriate during the permit process.
- This analysis recognizes the uncertainty regarding the actual level of final resource development. This uncertainty includes the exact number of wells, the type and amount of equipment used, the specific location of development, etc. Due to this uncertainty, actual impacts may vary from the projected values and would potentially be regulated by permit requirements.
- The contribution to the degradation of air quality from other mineral development (e.g., the extraction of solid leasables, mineral materials, and surface management) outside of the modeled impacts from dust due to increased activity and road building was considered to be small because oil- and gas-related activities are assumed to be the largest component of mineral exploration within the Monticello PA. Therefore, only oil- and gas-related emissions were directly considered in assessing impacts to air quality. If recent changes in the metals market continue to accelerate, this assumption may require revision.

It should be noted that full-scale dispersion modeling was not used to analyze potential air quality impact from oil and gas extraction. Due to the limitations in available data and the necessarily straightforward nature of the methodology used, the calculation of emission concentrations should be considered semi-quantitative and is intended only to forecast relative concentrations (compared to measured constituents and NAAQS) and identify potential trends. The results of this analysis should not be considered as absolute constituent concentrations. This report contains only relative concentration information. Care was taken to employ broad assumptions to help ensure that the findings do not underestimate future impacts. The determination of quantitative atmospheric concentrations would require a more complex, full-scale dispersion-modeling procedure.

4.3.1.1. Impacts Common to All Alternatives

All the alternatives stipulate that standard state and federal policy and regulations should govern air quality resources. These policies and regulations call for appropriate management of air quality within the Monticello PA and include application of the BACT provided by the Utah Division of Air Quality (UDAQ) to meet air quality standards; compliance with Utah Air Conservation (UAC) regulation R307–205, which identifies appropriate dust-abatement measures for construction, demolition, clearing, or excavation of land areas larger than one-quarter acre (UAC R307-205, August 1, 2006); and management of emissions to prevent deterioration to air quality in PSD Class I air sheds (UAC R307-405, August 1, 2006). These policies, standards, and guidelines would have long term, beneficial impacts on PA air quality by ensuring the continued protection of human health and maintaining scenic quality.

Fire-management decisions apply to all alternatives. Under all alternatives of the Monticello DRMP, approximately 15,000 acres of pinyon-juniper woodland vegetation would be subject to prescribed fire, and approximately 27,000 acres would receive non-fire treatments (42,000 acres total) over the next 10-year period. The preferred schedule of these treatments would be 5,000 to 10,000 acres per year across the PA, depending on budgetary and time constraints.

Several pollutants of concern are specific to prescribed burning, chiefly particulate matter and carbon dioxide (CO_2). Particulate matter produced in prescribed burns is predominantly $PM_{2.5}$ (70% of the smoke from burns falls into this category). Increased particulates are especially generated in high-intensity, wildland fire. Fire also produces carbon dioxide (CO_2), a gas that is potentially related to incremental global climate change. Biomass burning contributes to the release of greenhouse gases (such as CO_2) and eliminates a carbon sink. Prescribed fire would likely result in a short-term increase in particulate (primarily $PM_{2.5}$), CO_2, and ozone emissions in burn areas and locations immediately downwind. The air quality impacts from wildfire would likely be more detrimental than those from prescribed fire and have a more adverse impact on air quality in the Monticello PA because of the likelihood of a larger burn area with more burned vegetation.

Direct impacts of prescribed fire fall into two general categories: short-term and long-term. Projected short-term air quality impacts from prescribed burns include a general increase in $PM_{2.5}$ particulate and CO_2 emissions in the burn area and downwind locations. The magnitude of the increase depends directly on the size, extent, and controlled level of the burn. The type and amount of air pollutants released from burning wildland vegetation vary according to the type of fuel, moisture content, temperature of the fire, and amount of smoldering after the fire. Since prescribed burning occurs irregularly, it is generally possible to restrict it in potential nonattainment areas on "bad air quality days" to avoid violating standards. Projected long-term, direct air quality impacts from prescribed burns include a general increase in airborne particulates from the burn site as a result of ash dispersion and transport. This increase would occur only until revegetation occurs and growth matures.

Short-term and long-term indirect impacts on air quality from prescribed burns include an increase in airborne particulates from the burn site as a result of wind-based erosion of devegetated areas. This effect is expected to be small because vegetation management is an active component of fire management. Fuel-reduction treatments could potentially decrease the number and intensity of wildland fires and concurrently reduce the amount of particulates. A greater long-term impact of prescribed burning would be a reduction in particulate, CO_2, and ozone emissions produced by wildfires in unmanaged areas. Ozone, a product of biomass combustion formed through the interaction of ozone precursors, volatile organic carbon compounds (VOCs), and nitrogen oxides, is a precursor to greenhouse gases and a major constituent of photochemical smog. Although ozone produced by prescribed fire is quickly diluted and dispersed into the air, it may contribute to the greenhouse effect. Since ozone is a criteria pollutant, its production may be regulated by a state implementation plan (SIP), or burns may be banned under ozone alerts.

BLM fire-management policy coincides with the UDAQ permit process and, therefore, can be timed in conjunction with meteorological conditions to minimize air quality impacts. The BLM implements specific policies, rules, and procedures to minimize air quality impacts and production of regional haze due to fire. Under these requirements, BLM would comply with the

current smoke-management plan (SMP) and memorandum of agreement (MOU) shared by the BLM, USFS, and UDAQ. The MOU, in accordance with UAC regulation R307-204, requires that the size, date, fuel type, and estimated air emissions from each prescribed burn be reported. All prescribed burns, mechanical and chemical treatments, and impacts would be analyzed under a project-specific NEPA process.

Health and safety decisions shared by all the alternatives have the potential for direct, short-term, adverse impacts on air quality. Possible impacts relate to the remediation of AML sites that pose a risk to human health and safety. Remediation techniques generally include collapsing or sealing open shafts and adits and/or capping or removing tailings or other hazardous materials. Land disturbance associated with these practices and operating heavy equipment during remediation could result in incremental increases in short-term concentrations of particulate matter (PM_{10} and $PM_{2.5}$), SO_2, NO_x, hydrocarbons, and combustion by-products. Actual pollutant loads produced depend on the number and type of emission sources on-site, the area of disturbed earth, the source location, the duration of work, local topographical and meteorological conditions, and other site-specific factors. Short-term and long term impacts on air quality are expected to be negligible to minor since remediation would be carried out in accordance with the appropriate air quality policies and regulations, and the surface disturbances would be stabilized in accordance with these same policies and regulations.

Management decisions related to cultural resources, non-WSA lands with wilderness characteristics, paleontology, special designations, special status species, and visual resource managment are likely to have minor, indirect, long-term, beneficial impact on air quality due to reduced ground-disturbing activities in protected areas and the limitations they impose on development, access, or site use. Therefore, the management of these resources will not be discussed further in this subsection.

Livestock grazing, riparian, soil and watershed, travel, vegetation and TES vegetation, wildlife, and woodlands management decisions that limit or reduce surface and vegetation disturbance and grazing intensity and time; manage for greater vegetation retention and generation; and improve/upgrade existing road surfaces are generally projected to produce negligible impacts on short-term and long-term air quality. This is because managing livestock grazing allotments to ensure proper functioning conditions and forage utilization levels, protecting riparian vegetation and soils, protecting sensitive soils and water resources, improving vegetation communities through treatments, protecting wildlife species and their habitat, and managing woodlands for sustainable harvesting would not likely affect air quality.

Proposed management decisions generally include lower overall surface/soil disturbance. Potentially beneficial impacts from these management decisions would include reduced PM_{10} and other wind-borne particulates from erosion of exposed soils as vegetation and soil cohesion improve over time. Short-term benefits to air quality would most likely not be measurable in the PA. Long-term impacts are generally projected to produce negligible to minor beneficial impacts on long-term air quality, primarily as a result of limiting vehicular travel during critical periods. As the impacts of these management decisions are generally expected to be beneficial, minor, and unmeasurable within site-specific areas, they will not be discussed further in this section. Land and realty management decisions, other than those related to compressor stations, are projected to have no significant impact on air quality unless they affect other management

decisions. The projections and modeling assumptions and impacts from these facilities are discussed in detail in Section 4.3.7, Minerals.

Recreation and mineral-extraction management decisions are expected to have the greatest impacts on the air quality. The projected impacts of management decisions on these resources are discussed in detail below.

4.3.1.2. IMPACTS FROM ALTERNATIVES

4.3.1.2.1. ALTERNATIVE A

4.3.1.2.1.1. Impacts of Mineral Decisions on Air Quality Under Alternative A

The minerals management decisions under Alternative A would maintain existing levels of use without additional constraints.

This assessment has defined four primary BLM leasing categories for fluid hydrocarbons:

- Standard lease terms (Standard)
- Special conditions, or timing limitations and/or controlled surface use (Limited)
- No surface occupancy (NSO)
- Closed (lands designated as closed are not available for fluid hydrocarbon extraction and therefore were not included in this analysis)

The calculated wells for each RFD area under Alternative A are listed in Table 4.7.

Table 4.7. Average Predicted Oil and Gas Wells on BLM Lands within RFD Areas under Alternative A

RFD Area	Average Predicted Oil and Gas Wells[1]	Estimated Compressors Necessary[2]	Estimated Glycol Dehydrators Necessary[2]
Blanding sub-basin	41	3	41
Monument upwarp	7	2	7
Paradox fold and fault belt	25	2	25
Total	**73**	**7**	**73**

Note: Calculations are based on oil and gas RFD on BLM-administered lands only.

[1] The number of oil and natural gas wells was calculated as a cumulative total, not independently. For the purpose of analyzing impacts of mineral decisions on the total number of oil and natural gas wells, BLM lands designated as NSO were not included because they are not considered available for development.

[2] Necessary compressors were calculated at 0.063 per well (minimum of 2 per RFD area). Necessary glycol dehydrators were calculated at 1 per well (Trinity and Nicholls 2006).

The identified primary emission sources for oil and gas extraction were gas-fired compressors (a minimum of 2 per RFD area), glycol dehydrators (1 per well), flaring (occurring in 60% of the wells, flared gas was assumed to be "sweet" [i.e., no sulfur emissions]), vehicle exhaust, and construction-related fugitive dust. Primary emission components were identified as CO, NO_x, SO_2, PM_{10}, and $PM_{2.5}$.

Calculation of projected average maximum pollutant concentrations was based on a simple box-dispersion scenario with a well spacing of 40 acres, a wind speed of 3 miles per hour (~1.5 m/s), a straight-line trajectory, an average plume rise of 50 meters (ARL 2006), a plume dispersion factor of 0.025, and planar topography. Average emission rates were used for all calculations. Local meteorology or topography factors were not incorporated because well placement is not known at this time.

Gas-fired Compressors

Based on the assumptions discussed above, the development of oil and gas resources as proposed under Alternative A would require approximately 7 compressors (3 in the Blanding sub-basin, a defined minimum of 2 in the Monument upwarp, and 2 in the Paradox fold and fault belt).

Carbon Monoxide (CO). Using the specifications previously derived and the generalized emission rates depicted in Table 4.6, and assuming a 40-acre spacing between wells and consistent operation and emissions over the course of a year, calculations for the average maximum CO emissions possible from natural gas-fired compressors are well below the applicable NAAQS of 40,000 μg/m³ (1 hour) and 10,000 μg/m³ (8 hours) for BLM wells under Alternative A.

Oxides of Nitrogen (NO_x). Using the emission rates and assumptions already identified for CO, calculations for the average maximum NO_x emissions possible from natural gas-fired compressors are well below the applicable NAAQS of 100 μg/m³ (annual) as NO_2 for PA wells under Alternative A.

Sulfur Dioxide (SO_2). Using the emission rates and assumptions already identified for CO, calculations for the average maximum SO_2 emissions possible from natural gas-fired compressors are well below the applicable NAAQS of 1,300 μg/m³ (3 hours), 365 μg/m³ (24 hours), and 80 μg/m³ (annual) for BLM wells under Alternative A.

Particulate Matter (PM_{10} and $PM_{2.5}$). Using the emission rates and assumptions already identified for CO, calculations for the average maximum PM_{10} and $PM_{2.5}$ emissions possible from natural gas-fired compressors are well below the applicable NAAQS of 150 μg/m³ (24 hours) and 50 μg/m³ (annual), and 65 μg/m³ (24 hours) and 15 μg/m³ (annual), respectively, for wells under Alternative A.

Glycol Dehydrators

Based on the calculations derived in the preceding section, the development of oil and gas resources as proposed in Alternative A would require approximately 73 glycol dehydrators.

Hydrogen Sulfide (H_2S). Using an average emission rate of 1.45×10^{-7} g/s (Trinity and Nicholls 2006) and the estimates for gas-fired compressors, calculations for the average maximum SO_2 emissions possible from glycol dehydrators are well below the applicable NAAQS of 1,300 μg/m³ (3 hours), 365 μg/m³ (24 hours), and 80 μg/m³ (annual) for Monticello PA wells under Alternative A. A broad assumption that all H_2S will be converted to SO_2 was used for this assessment (ATSDR 1999).

Flaring

Carbon Monoxide (CO). Assuming flaring occurred in 60% of the new wells, that conditions identified previously and generalized emission rates specified in BLM 2004h applied, that a 40-

km spacing existed between wells, and that operation and emissions were consistent over the course of a year, calculations for the average maximum CO emissions possible from flaring would be well below the applicable NAAQS of 40,000 µg/m³ (1 hour) and 10,000 µg/m³ (8 hours) for wells within the PA under Alternative A.

Oxides of Nitrogen (NO_x). Using the emission rates and assumptions just identified for CO, calculations for the average maximum potential NO_x emissions from flaring would be well below the applicable NAAQS of 100 µg/m³ (annual) as NO_2 for BLM wells under Alternative A.

Vehicle Exhaust

Exhaust generated by construction equipment and other vehicles contains hydrocarbons, combustion by-products, and particulates.

A six-month construction season was assumed to calculate annual concentrations, and the vehicle type and size specifications defined previously were used. It was estimated that a total of 10 construction vehicles would be operating on-site at any one time. It was assumed that 97% of the particulate matter in exhaust and crankcase emissions would be smaller than 2.5 microns ($PM_{2.5}$) and that this figure also applied to the calculated emissions loading (EPA 2004). $PM_{2.5}$ thresholds were used to evaluate particulate concentrations.

The equation used to calculate emissions for a pollutant (including NAAQS constituents: particulates, carbon monoxide [CO] and nitrogen dioxide [NO_2]) employed standardized emission factors based on vehicle age and engine size. The equation also took into consideration engine load, equipment population, hours of use, and activity level (EPA 2003c).

An *emission factor* is defined by the EPA as the average emission of a pollutant from a specific equipment category and is usually expressed in grams per horsepower-hour (g/hp-h). Equipment population is the number of pieces estimated to be in use at any one time. Hours of use were assumed to be full time over the 12-hour daily work period, 7 days per week. This is an overestimation of emissions for the majority of the construction period, but it represents periods of intense activity and, therefore, serves as a broad estimate of critical conditions (EPA 2003c).

If older equipment (pre-1997) is used for the project work, it should be understood that emissions could be as much as two times higher than those calculated for this assessment (EPA 2003c). However, it is unlikely that all the equipment will be older than 1997. The overestimates for hours of use, total equipment population, and wind conditions are expected to sufficiently protect air quality from project-related exhaust emissions.

Using the methodology and assumptions outlined previously, estimates of the average maximum CO emissions possible from construction equipment and vehicles are well below the applicable NAAQS for CO of 40,000 µg/m³ (1 hour) and 10,000 µg/m³ (8 hours).

The average maximum NO_2 concentrations possible during project construction were modeled using standardized emission factors with an adjustment of 0.75 (in accordance with standard EPA methodology) to convert the modeled NO_x concentration to NO_2 *(Federal Register* 60:153, p. 40469, August 9, 1995). Estimates of the average maximum-modeled annual NO_2 concentration are well below the applicable NAAQS of 100 µg/m³.

The average maximum PM_{10} emissions possible from construction equipment and vehicles are estimated to be well below the applicable NAAQS of 150 µg/m³ (24 hours), and the average

maximum potential $PM_{2.5}$ emissions are also estimated to be well below the applicable NAAQS of 65 µg/m³ (24 hours).

Fugitive Dust (Construction Period)

The potential for fugitive dust generation was estimated using a calculation model and EPA emission factors (EPA 2003e, WRAP 2004). The equation to calculate dust generation (including NAAQS constituents PM_{10} and $PM_{2.5}$) employed standardized emission factors based on soil type, vehicle type and activity, and distance traveled (EPA 2003e).

Soils in the Monticello PA have been characterized as having low to moderate susceptibility to wind erosion. For Alternative A (all RFD areas), approximately 30% of the soils were estimated to have low susceptibility, 44% were described as moderately susceptible, and 6% were expected to be highly susceptible to wind erosion. There were no data on wind erosion available for the remaining soils in the PA.

Because construction at all proposed wells would not occur simultaneously, it was assumed that total soil disturbance within each RFD area at any given time would not exceed 9.6 acres (the total disturbance area expected within a single well site). Previously discussed assumptions about vehicle number, type, size, and speed of travel; soil moisture and silt content; wind speed and dispersion height; and soil stabilization procedures and effectiveness were applied at a level representative of intense construction activity.

Using the methodology and these assumptions, estimates of the average maximum PM_{10} emissions resulting from construction activities, equipment, and vehicles are well below the applicable NAAQS of 150 µg/m³ (24 hours) for BLM oil and gas wells under Alternative A.

The average maximum $PM_{2.5}$ emissions possible from construction activities, equipment, and vehicles are estimated to be well below the applicable NAAQS of 65 µg/m³ (24 hours) for BLM wells under Alternative A.

Using the methodology and assumptions outlined previously *and* assuming that all exposed disturbance areas (e.g., work and staging areas, and roads) on the construction site would be watered frequently enough to keep soils moist during working hours, a control efficiency of 75% for all exposed/graded areas and 10% for all well-traveled roads was applied (CEQA 2002). Adding this dust-abatement mechanism reduced estimates of the average maximum potential PM_{10} and $PM_{2.5}$ emissions from construction activities, equipment, and vehicles by 50%.

In addition to construction-specific actions under Alternative A, some additional short-term post construction particulate (dust) emissions are expected to occur due to loss of vegetation within the construction and staging areas. With appropriate soil stabilization and revegetation measures, these emissions are estimated to have negligible impacts on air quality.

Cumulative Assessment of Projected Emissions

Background CO-concentration information was not available within the Monticello PA, so concentrations at Grand Junction, Colorado (Table 3.2) were used for comparison. The measured CO concentrations at Grand Junction represent an overestimate of background CO in the Monticello PA because the Grand Junction area is more densely populated and possesses a greater number of emission sources. However, when cumulative projected BLM project-related

CO concentrations were combined with background concentrations, the total was still well below the applicable NAAQS for CO of 40,000 µg/m³ (1 hour) and 10,000 µg/m³ (8 hours).

Background NO_x concentration data were not available within the Monticello PA. Concentrations from La Plata County, Colorado, were available (Table 3.2), however, and were used for comparison. The measured NO_x concentrations at La Plata represent an overestimate of background NO_x in the Monticello PA because the La Plata/Durango area is more densely populated and possesses a greater number of emission sources. However, when cumulative projected BLM project-related NO_x concentrations were combined with background concentrations, the total was still well below the applicable NAAQS for NO_2 of 100 µg/m³ (annual).

Background SO_2 concentration data were also not available within the Monticello PA, but background NO_x concentrations from Shiprock, New Mexico, were available (Table 3.2) and were used for comparison. The measured NO_x concentrations at Shiprock represent an overestimate of background NO_x in the Monticello PA because the Shiprock area is more densely populated and possesses a greater number of emission sources (2006 U.S. Census Bureau estimated populations for San Juan County, New Mexico and San Juan County, Utah are 126,473 and 14,265, respectively [USCB 2007a, 2007b]). However, when cumulative projected BLM project-related NO_x concentrations were combined with background concentrations, the total was still well below the applicable NAAQS for NO_2 of 100 µg/m³ (annual).

Background PM_{10} and $PM_{2.5}$ concentration data were not available within the Monticello PA, but concentrations were available from Telluride, Colorado, (Table 3.2) and were used for comparison. Background PM_{10} and $PM_{2.5}$ concentration data were also available for Durango, Colorado (Table 3.2), but the Telluride data were assumed to represent the rural nature of the Monticello PA more accurately. When cumulative projected BLM project-related PM_{10} and $PM_{2.5}$ concentrations were combined with the background concentrations, the totals were well below the applicable NAAQS for PM_{10} and $PM_{2.5}$ of 150 µg/m³ (24 hours) and 50 µg/m³ (annual), and 65 µg/m³ (24 hours) and 15 µg/m³ (annual), respectively.

Assuming appropriate application of control measures, no substantial, long-term, adverse air quality impacts are projected within the Monticello PA from oil and gas development under Alternative A.

4.3.1.2.1.2. Impacts of Recreation Decisions on Air Quality Under Alternative A

Recreation management decisions under Alternative A would maintain existing levels of motorized vehicle use, without additional constraints. Projected affects on air quality would primarily result from combustion by-products from automobiles, OHVs, and other hydrocarbon-associated vehicles, and surface disturbance from off-trail and off-road activities. Projected air quality constituents of concern related to recreational use include particulate matter (PM_{10} and $PM_{2.5}$), hydrocarbons, and combustion by-products.

Because the locations of all future recreation sites within the Monticello PA are not presently known, accurate quantification of air quality impact is not possible. Since the Monticello PA is currently in attainment, continued recreational use at the current level is not likely to exceed the NAAQS in the long term. However, intense recreational use in a relatively small area may produce local conditions that contribute to short-term violations of air quality standards or PSD threshold levels.

Recreation management decisions that limit or reduce surface and vegetation disturbance and OHV and other off-trail access, and improve existing road and trail surfaces are generally expected to have negligible impacts on air quality in the short term, and negligible to minor, beneficial impacts on air quality in the long term. This is because short-term benefits to air quality would most likely not be measurable in the Monticello PA, and because long-term benefits would include site-specific reductions in wind-borne particulates due to less erosion of exposed soils as vegetation and soil cohesion improve over time.

4.3.1.2.2. ALTERNATIVE B

Alternative B is expected to have a slightly lower overall impact on air quality in the Monticello PA than Alternative A because the emphasis of management decisions on conservation of resources under this alternative would limit surface disturbances and other impacts to air quality.

4.3.1.2.2.1. Impacts of Mineral Decisions on Air Quality Under Alternative B

Mineral-extraction management decisions under Alternative B would result in a reduction of approximately 9% in opportunities for oil and gas extraction as compared to Alternative A. The calculated number of oil and gas wells for each RFD area in Alternative B is listed in Table 4.8.

Table 4.8. Average Predicted Oil and Gas Wells on BLM Lands within RFD Areas under Alternative B During the Life of the RMP

RFD Area	Average Predicted Oil and Gas Wells[1]	Estimated Compressors Necessary[2]	Estimated Glycol Dehydrators Necessary[2]
Blanding sub-basin	38	2	38
Monument upwarp	8	2	8
Paradox fold and fault belt	20	2	20
Total	**66**	**6**	**66**

Note: Calculations are based on development on BLM lands only and specifically reflect the life of the RMP.

[1] The number of oil and natural gas wells was calculated as a cumulative total, not independently. For the purpose of analyzing impacts of mineral decisions on the total number of oil and natural gas wells, BLM lands designated as NSO were not included because they are not considered available for development.

[2] Necessary compressors were calculated at 0.063 per well (minimum of 2 per RFD area). Necessary glycol dehydrators were calculated at 1 per well (Trinity and Nicholls 2006).

Gas-fired Compressors

The adverse impacts of gas-fired compressors on air quality under Alternative B would be similar to or less than those described for Alternative A because fewer compressors would be constructed, with fewer emissions than Alternative A. All projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative B.

Glycol Dehydrators

The adverse impacts of glycol dehydrators on air quality under Alternative B would be similar to or less than those described for Alternative A. All projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative B.

Flaring

The adverse impacts of well flaring on air quality under Alternative B would be similar to or less than those described for Alternative A because fewer wells would be drilled than under Alternative A. All projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative B.

Vehicle Exhaust

The adverse impacts of vehicle exhaust on air quality under Alternative B would be similar to or less than those described for Alternative A because fewer wells and infrastructure would be drilled and constructed, so fewer vehicles would be required for construction and maintenance than predicted under Alternative A. All projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative B.

Fugitive Dust (Construction Period)

Fugitive-dust concentrations under Alternative B would be similar to or less than those described for Alternative A, for reasons as discussed above: fewer wells would require fewer vehicles and surface disturbances would potentially produce fugitive dust. All projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative B.

Cumulative Assessment of Projected Emissions

When cumulative, expected BLM project-related emissions were combined with available background concentration data, all total air pollutant concentrations would be well below the applicable NAAQS for BLM wells under Alternative B (the same as Alternative A).

Assuming appropriate applications of air pollution control measures, no long-term, adverse air quality impacts would result from oil and gas development under Alternative B.

4.3.1.2.2.2. Impacts of Recreation Decisions on Air Quality Under Alternative B

Under Alternative B, recreation-management decisions would place more restrictions on motorized OHV use, when compared to Alternative A.

Recreation management decisions under this alternative that limit or reduce surface and vegetation disturbance and OHV and other off-trail access, and improve existing road and trail surfaces are likely to produce negligible impacts on short-term air quality and negligible to minor, beneficial impacts on long-term air quality. This is because the beneficial outcomes include site-specific reduced PM_{10} and other wind-borne particulates due to less erosion of exposed soils (and less production of fugitive dust) as vegetation and soil cohesion improve over time, and because the short-term air quality impacts would most likely not be measurable in the Monticello PA. Thus, the adverse impacts of recreation on air quality under Alternative B are would be similar to or less than those described for Alternative A.

4.3.1.2.3. ALTERNATIVE C

Alternative C is projected to have a similar impact on air quality in the Monticello PA as Alternative A because the management decisions that could impact air quality would be similar.

4.3.1.2.3.1. Impacts of Mineral Decisions on Air Quality Under Alternative C

Mineral management decisions under Alternative C would increase opportunities for oil and gas extraction approximately 1% as compared to Alternative A. The calculated wells for each RFD area in Alternative C are listed in Table 4.9.

Table 4.9. Average Predicted Oil and Gas Wells on BLM Lands within RFD Areas under Alternative C for the Life of the RMP

RFD Area	Average Predicted Oil and Gas Wells[1]	Estimated Compressors Necessary[2]	Estimated Glycol Dehydrators Necessary[2]
Blanding sub-basin	41	3	41
Monument upwarp	9	2	9
Paradox fold and fault belt	24	2	24
Total	**74**	**7**	**74**

Note: Calculations are based on development on BLM lands only and specifically reflect the life of the RMP.

[1] The number of oil and natural gas wells was calculated as a cumulative total, not independently. For the purpose of analyzing impacts of mineral decisions on the total number of oil and natural gas wells, BLM lands designated as NSO were not included because they were not considered available for development.

[2] Necessary compressors were calculated at 0.063 per well (minimum of 2 per RFD area). Necessary glycol dehydrators were calculated at 1 per well (Trinity and Nicholls 2006).

Gas-fired Compressors

The adverse impacts of gas-fired compressors on air quality under Alternative C would be the same as those described for Alternative A because the number of predicted gas compressors under this alternative is the same as under Alternative A. All projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative C, with the same impacts as discussed under Alternative A.

Glycol Dehydrators

The adverse impacts of glycol dehydrators on air quality under Alternative C would be the same as those described for Alternative A because the number of dehydrators predicted under this alternative would be similar to Alternative A. All projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative C.

Flaring

The adverse impacts of well flaring on air quality under Alternative C would be the same or slightly increased when compared to Alternative A because more wells are predicted under this alternative than under Alternative A. All projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative C.

Vehicle Exhaust

The adverse impacts of vehicle exhaust on air quality under Alternative C would be the same as those described for Alternative A because the level of construction, minerals-related travel, and well maintenance would be practically the same as under Alternative A. All projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative C.

Fugitive Dust (Construction Period)

Fugitive-dust concentrations under Alternative C would be the same as those described for Alternative A, for reasons as discussed above: the level of development between the two alternatives is practically the same. All projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative C.

Cumulative Assessment of Projected Emissions

When cumulative expected BLM project-related emissions were combined with available background concentration data, all totals were well below the applicable NAAQS for BLM wells under Alternative C, with cumulative impacts the same as Alternative A.

Assuming appropriate application of control measures, no appreciable, long-term, adverse air quality impacts are projected due to oil and gas development under Alternative C.

4.3.1.2.3.2. Impacts of Recreation Decisions on Air Quality Under Alternative C

Under Alternative C, recreation management decisions would place minor additional restrictions on motorized vehicle use as compared to Alternative A.

Recreation management decisions under this alternative that limit or reduce surface and vegetation disturbance and OHV and other off-trail access, and improve existing road and trail surfaces are generally expected to produce negligible impacts on short-term air quality and negligible to minor beneficial impacts on long-term air quality. These beneficial outcomes include site-specific reduced PM_{10} and other wind-borne particulates due to less erosion of exposed soils as vegetation and soil cohesion improve over time. Short-term benefits to air quality would most likely not be measurable in the overall PA.

The adverse impacts of recreation on air quality under Alternative C are expected to be similar to those described for Alternative A because the minerals and recreation decisions would allow surface disturbances and emissions similar to those allowed under alternative A.

4.3.1.2.4. ALTERNATIVE D

Alternative D is projected to have a similar overall impact on air quality in the Monticello PA as Alternative A because the management decisions that could impact air quality would be similar.

4.3.1.2.4.1. Impacts of Mineral Decisions on Air Quality Under Alternative D

Mineral-extraction management decisions under Alternative D would increase opportunities for oil and gas extraction approximately 1% as compared to Alternative A and Alternative C. The calculated wells for each RFD area in Alternative D are listed in Table 4.10.

Gas-fired Compressors

The adverse impacts of gas-fired compressors on air quality under Alternative D would be similar to those described for Alternative A because the number of predicted compressors would be the same. As discussed for Alternative A, all projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative D.

Table 4.10. Average Predicted Oil and Gas Wells on BLM Lands within RFD Areas under Alternative D over the Life of the RMP

RFD Area	Average Predicted Oil and Gas Wells[1]	Estimated Compressors Necessary[2]	Estimated Glycol Dehydrators Necessary[2]
Blanding sub-basin	41	3	41
Monument upwarp	9	2	9
Paradox fold and fault belt	25	2	25
Total	**75**	**7**	**75**

Note: Calculations are based on development on BLM lands only and specifically reflect the life of the RMP.

[1] The number of oil and natural gas wells was calculated as a cumulative total, not independently. For the purpose of analyzing impacts of mineral decisions on the total number of oil and natural gas wells, BLM lands designated as NSO were not included because they are not considered available for development.

[2] Necessary compressors were calculated at 0.063 per well (minimum of 2 per RFD area). Necessary glycol dehydrators were calculated at 1 per well (Trinity and Nicholls 2006).

Glycol Dehydrators

The adverse impacts of glycol dehydrators on air quality under Alternative D would be similar to those described for Alternative A because a similar number of dehydrators are predicted under this Alternative as under Alternative A. All projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative D.

Flaring

The adverse impacts of well flaring on air quality under Alternative D would be similar to or slightly greater than those described for Alternative A because the number of wells predicted under this alternative would be slightly increased, when compared to Alternative A. All projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative D.

Vehicle Exhaust

The adverse impacts of vehicle exhaust on air quality under Alternative D would be similar to or slightly greater than those described for Alternative A for reasons as discussed under Alternative C: a slight increase in the number of predicted wells would likely increase the number of vehicles required for well construction and maintenance. All projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative D.

Fugitive Dust (Construction Period)

Fugitive-dust concentrations under Alternative D would be similar to or slightly greater than those described for Alternative A for the reasons described above: an increase in the number of vehicles required to construct and maintain the increased number of predicted wells would slightly increase the amount of fugitive dust. All projected estimated emissions would be well below the applicable NAAQS for BLM sources under Alternative D.

Cumulative Assessment of Projected Emissions

When cumulative expected BLM project-related emissions were combined with available background concentration data, all totals would be well below the applicable NAAQS for BLM wells under Alternative D.

Assuming appropriate application of control measures, no appreciable, long-term, adverse air quality impacts are projected due to oil and gas development under Alternative D.

4.3.1.2.4.2. Impacts of Recreation Decisions on Air Quality Under Alternative D

Under Alternative D, recreation management decisions would place minor additional restrictions on motorized vehicle use as compared to Alternative A.

Recreation management decisions under this alternative that limit or reduce surface and vegetation disturbance and OHV and other off-trail access, and improve existing road and trail surfaces are generally expected to produce negligible impacts on short-term air quality and negligible to minor beneficial impacts on long-term air quality. These beneficial outcomes include site-specific reduced PM_{10} and other wind-borne particulates due to less erosion of exposed soils as vegetation and soil cohesion improve over time. Short-term benefits to air quality would most likely not be measurable in the overall PA.

The adverse impacts of recreation on air quality under Alternative D are expected to be similar to those described for Alternative A.

4.3.1.2.5. ALTERNATIVE E

Alternative E is projected to have a lower overall impact on air quality in the Monticello PA than Alternative A because less surface disturbances and emissions would be allowed under this alternative than under Alternative A.

4.3.1.2.5.1. Impacts of Mineral Decisions on Air Quality Under Alternative E

Mineral-extraction management decisions under Alternative E would reduce opportunities for oil and gas extraction approximately 26% as compared to Alternative A. The calculated wells for each RFD area in Alternative E are listed in Table 4.11.

Gas-fired Compressors

The adverse impacts of gas-fired compressors on air quality under Alternative E would be less than those described for Alternative A because fewer wells are predicted for construction during the life of the RMP. All projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative E.

Glycol Dehydrators

The adverse impacts of glycol dehydrators on air quality under Alternative E would be less than those described for Alternative A because fewer dehydrators would be constructed under this alternative than under Alternative A. All projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative E.

Table 4.11. Average Predicted Oil and Gas Wells on BLM Lands within RFD Areas under Alternative E over the Life of the RMP

RFD Area	Average Predicted Oil and Gas Wells[1]	Estimated Compressors Necessary[2]	Estimated Glycol Dehydrators Necessary[2]
Blanding Sub-basin	36	3	36
Monument Upwarp	3	2	3
Paradox Fold and Fault Belt	15	2	15
Total	**54**	**7**	**54**

Note: Calculations are based on development on BLM lands only and specifically reflect the life of the RMP.

[1] The number of oil and natural gas wells was calculated as a cumulative total, not independently. For the purpose of analyzing impacts of mineral decisions on the total number of oil and natural gas wells, BLM lands designated as NSO were not included because they are not considered available for development.

[2] Necessary compressors were calculated at 0.063 per well (minimum of 2 per RFD area). Necessary glycol dehydrators were calculated at 1 per well (Trinity and Nicholls 2006).

Flaring

The adverse impacts of well flaring on air quality under Alternative E would be less than those described for Alternative A for reasons as discussed above: fewer predicted wells under this alternative would have fewer impacts on air quality from less flaring. All projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative E.

Vehicle Exhaust

The adverse impacts of vehicle exhaust on air quality under Alternative E would be less than those described for Alternative A because fewer vehicles would be required to construction and maintain wells, when compared to Alternative A. All projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative E.

Fugitive Dust (Construction Period)

Fugitive-dust concentrations under Alternative E would be less than those described for Alternative A because, as discussed above, fewer vehicles would be used to construction and maintain wells, when compared to Alternative A. All projected estimated emissions would be well below the applicable NAAQS for BLM wells under Alternative E.

Cumulative Assessment of Projected Emissions

When cumulative expected BLM project-related emissions were combined with available background concentration data, all totals would be well below the applicable NAAQS for BLM wells under Alternative E.

Assuming appropriate application of control measures, no appreciable, long-term, adverse air quality impacts are projected due to oil and gas development under Alternative E.

4.3.1.2.5.2. Impacts of Recreation Decisions on Air Quality Under Alternative E

Under Alternative E, recreation management decisions would place additional restrictions on motorized vehicle use as compared to Alternative A, specifically for lands with non-WSA wilderness characteristics.

Recreation management decisions under this alternative that limit or reduce surface and vegetation disturbance and OHV and other off-trail access, and improve existing road and trail surfaces would produce negligible impacts on short-term air quality, and negligible to minor, beneficial impacts on long-term air quality. These beneficial outcomes would include site-specific reduced PM_{10} and other wind-borne particulates due to reduced erosion of exposed soils as vegetation and soil cohesion improve over time. Short-term benefits to air quality would most likely not be measurable in the overall project area.

The adverse impacts of recreation on air quality under Alternative E would be similar to or less than those described for Alternative A.

4.3.1.3. Summary of Impacts

Based on the projected low level of development and relatively small changes in expected recreational use from any of the proposed alternatives, management decisions associated with all the alternatives are projected to have virtually identical impacts on air quality.

Proposed management decisions under all alternatives have the potential to impact air quality in the following ways:

- Recreation and mineral (oil and gas development and extraction) activities would emit pollutants while they are occurring (e.g., vehicle emissions, well operations, compressor engines, etc.), along with producing fugitive dust from automobiles, OHVs, construction, and mineral extraction. Air quality impacts from the projected emissions related to these activities would be negligible.
- Air quality impacts from prescribed fire-management decisions would generally be adverse and take the form of particulate matter (primarily $PM_{2.5}$) and carbon dioxide (CO_2). Adverse mpacts would generally be short-term, with minor long-term impacts.
- Livestock grazing, riparian, soil and watershed, travel, vegetation and TES vegetation, wildlife, and woodlands management decisions are generally projected to produce negligible effects on short-term air quality and negligible to minor, beneficial impacts on long-term air quality unless they affect other management decisions.
- Land and realty management decisions, outside of those related to compressor stations discussed later, are projected to have no significant impact on air quality unless they affect other management decisions.
- Cultural, paleontological, special status species, and visual resource management decisions are projected to have only minor, indirect, long-term beneficial impact on air quality unless they affect other management decisions.

4.3.1.4. Mitigation Measures

Required mitigation measures are outlined in state and federal policies and regulations that govern the air quality permit process and include application of the BACT; compliance with

appropriate dust-abatement measures for construction, demolition, clearing, or excavation of land; management of emissions to prevent deterioration to air quality in PSD Class I air sheds; and restrictions imposed by regulatory agencies and management authorities on equipment and vehicle air emissions.

Additional mitigation measures may include additional surface stabilization, lower vehicle speed limits, and reclamation to improve surface vegetation.

4.3.1.5. Unavoidable Adverse Impacts

Prescribed fire would result in degradation of air quality because smoke and from an increase in wind-borne particulates (PM_{10} and $PM_{2.5}$) resulting from loss of vegetative cover unless revegetation treatments are consistently implemented and evaluated for success with current monitoring techniques. Adverse impacts to air quality are not expected under any of the proposed mineral-development alternatives.

4.3.1.6. Short-term Use versus Long-term Productivity

Prescribed fire may result in short-term and, to a lesser degree, long-term degradation of air quality because of an increase in wind-borne particulates (PM_{10} and $PM_{2.5}$) due to loss of vegetation. Such degradation is not expected to be substantial if revegetation measures are adequately monitored and supported for regrowth. Adverse impacts to air quality are not expected under any of the proposed mineral-development alternatives.

4.3.1.7. Irreversible and Irretrievable Impacts

There are irretrievable impacts to air quality that would occur over the life of the RMP. A number of activities contribute to the degradation of air quality, including smoke from prescribed burning, dust from motor vehicle travel on dirt roads, and industrial emissions to the atmosphere from motor vehicles and energy production. While these activities individually may not cause a significant quantity or duration of impacts, they would occur continuously over the life of the plan at some interval or frequency, and contribute some level of emissions to the air. Since the impacts would be continuous, impacts to air quality would be irretrievable over the life of the plan. However, because the impacts would cease if the activities ended, they would not be irreversible.

4.3.2. Cultural Resources

Impacts to the cultural resources of the Monticello FO would primarily result from surface and subsurface disturbance such as development projects, recreational use/OHV travel, and fire management. Impacts might, however, also result from specific cultural-resource management decisions and non-surface visual and noise disturbances. These latter impacts would be felt primarily at sites or locations deemed sacred or traditionally important by Native American tribes and used by these groups in ways that might be disrupted by visual obstructions and/or noise levels.

Because the majority of cultural resources identified in the Monticello PA consist of archaeological sites, the primary resource impacts-related concern would be disturbance of the artifacts, features, and architecture of sites in ways that reduce their integrity and the potential to recover data and alter their association with traditional values. Archaeological data consist of

both objects (in the broad sense of artifacts, architecture, features, etc.) and the spatial (horizontal and vertical) relationships among them. Our ability to interpret and understand the past is based on recovering not only its material culture in the form of artifacts, buildings, and the built environment but also on the spatial relationships among different aspects of that culture. Thus, surface and subsurface disturbances that not only destroy material culture but also the spatial relationships that are key to understanding and interpreting it can have the greatest adverse impact on cultural resources. Impacts include elimination or reduction of the data, including the setting and physical integrity of sacred or other sites, National Register of Historic Places (NRHP)–listed or –eligible sites, landscapes, and cultural-landscape areas; disruption or reduction of the religious values of sites and areas; and damage to traditional use areas or resource sites. In general, impacts on cultural resources from surface disturbance are long-term (i.e., permanent): once an archaeological site has been damaged or disturbed, the impact typically cannot be reversed. Short-term visual or noise impacts, however, can often be mitigated or accommodated.

Potential impacts to cultural resources from the proposed management decisions are difficult to precisely quantify as the revised DRMP management decisions do not stipulate specific areas where surface-disturbing activities are likely to occur, nor have the exact locations of all cultural resources been identified in the PA. However, it is possible to estimate impacts based on the proposed general locations of activities and the relationships of these areas of activity to zones where cultural resources are more or less likely to be found.

Impacts on cultural resources may be direct, indirect, negligible, or nonexistent, depending on the resource-management decision. Specifically, DRMP decisions for air quality, health and safety, and soils and watersheds would have negligible or very minor direct or indirect impact on cultural resources within the Monticello PA: protection of air quality, maintaining public safety around abandoned mine land sites (AMLs) and reducing the risks of hazardous materials spills, protecting sensitive soils, and safeguarding streams, creeks, and other waterways would not affect management decisions to inventory and protect cultural resources. Therefore, they will not be considered further in this analysis. All other resource decisions that could potentially impact cultural resources either beneficially or adversely are discussed in detail below.

Analyzing impacts to cultural resources involves developing methods for assessing the impacts of nonspecific and/or program management decisions on areas where the precise number, type, and location of cultural resources are either poorly known or unknown. As described in Chapter 3, no more than approximately 10% of the Monticello PA has been systematically inventoried for cultural resources, and surveying the entire area would not be feasible within the parameters of an RMP (i.e., at the programmatic level of analysis and resource management). Therefore, it is not possible to determine, at the planning stage, if site-specific management decisions would affect cultural resources because many areas are lacking data on the location, type, and number of the cultural resources that lie within them.

Importantly, a management prescription common to all five of the proposed RMP alternatives is that efforts to identify and assess cultural resources will be conducted as part of compliance with Section 106 of the National Historic Preservation Act (NHPA) prior to any site-specific actions. However, to conduct any kind of impact analysis, it is necessary to estimate the densities of sites that may be affected by management decisions under this DEIS. Including a site or sites in management decisions does not imply that they would necessarily be affected in any particular

way. Management activities could have beneficial, adverse, or negligible impacts to cultural resource sites, and, by using the Section 106 process, adverse impacts can nearly always be avoided or mitigated. The goal of this analysis is to assess the relative impact of management decisions on cultural resources in a consistent and replicable manner.

The BLM developed a model of cultural-resource site density at a landscape level as a means of estimating the effect of management decisions on the resource. This model built upon techniques used by other researchers in the region to estimate site densities (e.g., Tipps et al. 1988). The goal of the model is to be able to estimate whether large or moderate numbers of sites are probable within a given area of the landscape. The model is not designed to predict specific site locations, nor does it intend to determine that certain portions of the landscape may or may not be used in any particular way. It is a mechanism for assessing relative site densities. The model supplements, but does not replace, what Monticello FO resource specialists, who make land use decisions based on site-specific information, already know.

While this site-density prediction model is not perfect, it is sufficiently accurate to be used as a tool for analyzing potential impacts of management decisions on cultural resource sites. It has between a 70% and 80% success rate in defining 160-acre quadrants with 1, 2, or more cultural resource sites. The model is used in the analysis of impacts in this DRMP as a way to gauge whether a proposed management decision under a particular alternative would involve more acres of high or medium site-density land than another. The model cannot predict numbers of sites affected by decisions, nor should it be considered a replacement for cultural inventory. As noted, Section 106 of the NHPA requires that all specific actions with the potential to involve cultural resources must be supported by efforts, such as an inventory, to document cultural resources.

To assess the impacts of proposed management actions, it is important to ask how likely they are to produce surface-disturbing activities within high, medium, or low site-density zones. It is assumed that the potential for disturbance would be proportional to the total acres of land in each site-density category within the area likely to be disturbed. For example, assume that a proposed management area contains 100 acres, 20 acres (20%) of which the site-density model has classified with high site- density and 80 acres (80%) of which it has classified with medium or low site-density. Assume also that a particular management decision is expected to disturb 50 acres within that 100-acre area. It follows logically that 10 acres (20%) of that disturbance would affect the high site-density area, and 40 acres (80%) would affect the medium or low site-density area. Again, while not precise, this method results in a quantifiable assessment of probable relative effects of proposed management decisions.

4.3.2.1. Impacts Common to All Alternatives

Certain management decisions for various resource programs would apply to all of the proposed DRMP alternatives. These decisions have the potential to impact cultural resources in a variety of ways. For example, all alternatives stipulate that standard BLM policy and Sections 106, 110, and 111 of the NHPA should govern cultural resources. These policies and regulations call for both proactive and reactive management of cultural resources within the Monticello PA. *Proactive actions* include nominating worthy cultural sites for the NRHP, surveying areas for cultural resources in the absence of specific project-related activities establishing cultural-resource interpretation programs, and prohibiting the use of ropes and other climbing aids to access cultural sites. *Reactive actions* include conducting or requiring site-identification surveys

in response to applications for land development, use, or transfer; identifying measures to eliminate, reduce, or compensate for impacts to cultural sites resulting from management decisions; and limiting or eliminating access to cultural sites that are either being damaged by visitation or pose a threat to visitors. All of these proactive and reactive measures are designed to recognize the scientific and experimental, traditional, educational/public, and conservation values of cultural resources within the PA. Table 4.12 summarizes the anticipated impacts to cultural resources under all of the proposed alternatives.

Table 4.12. Impacts Common to All Alternatives

Resource Program	Impact on Cultural Resources
Cultural Resources	Program measures provide for avoiding, minimizing, or compensating for impacts to cultural resources, and supporting public enjoyment of the majority of the resources within the PA. These measures would result in long-term beneficial impacts to these cultural resources. The beneficial impacts would result from 1) continuing to implement policies and to follow regulations that are designed to identify important resources and either minimize or reduce impacts to them, 2) educating the public about protecting and valuing cultural resources, 3) restricting or prohibiting land uses that are known to cause direct and indirect, adverse impacts to specific cultural resources, and 4) expanding the FO staff's knowledge about the location and nature of cultural resources within their management responsibility.
Fire Management	A total of 12,760 acres would undergo prescribed fire. Approximately 10,185 acres lie in high cultural-resource site-density areas and 2,575 acres in medium site-density areas. An additional 26,412 acres would receive non-fire treatments, with approximately 20,796 acres described as high site-density and 5,616 acres as medium site-density areas. BLM fire-management policy requires surveys to identify cultural resources prior to any type of treatment for fuel reduction. Consequently, the actual risk to cultural resources within the Monticello PA from fire-management decisions would be minor because sites would be identified and the potential impacts would be mitigated.
Health and Safety	The AML program, whereby abandoned mine sites that pose a risk to human health and safety are remediated, would cause minor, direct, long-term, adverse impacts to historical structures and features associated with the mine sites because of actions required to remediate the sites. However, the AML program would be conducted in compliance with the NHPA so that avoidance or mitigation measures would be implemented as appropriate, thereby minimizing the adverse impacts.
Livestock Grazing	Maintaining the five side canyons of the Comb Wash allotment as unavailable to grazing would have long-term, beneficial impacts on cultural resources by protecting 16,599 acres of known high site-density lands from livestock trampling and rubbing. These include Mule Canyon below Highway 95, Arch Canyon, Fish Canyon, Owl Canyon, and Road Canyon.
Paleontology	Minor, adverse and beneficial impacts could occur from paleontological decisions. Beneficial impacts from predevelopment paleontological surveys could identify cultural resources and thereby allow site avoidance. Adverse impacts could result from recreational fossil collection: casual collectors may not distinguish between paleontological materials and cultural resources or may not recognize the difference between paleontological and cultural artifacts, thereby causing unintentional adverse impacts to cultural sites.

Table 4.12. Impacts Common to All Alternatives

Resource Program	Impact on Cultural Resources
Special Designations	Under all alternatives, WSAs would be managed under the IMP to protect wilderness values. The IMP stipulates that very low levels of surface disturbances would be allowed in order to maintain wilderness suitability for potential designation by Congress. The impacts would be beneficial and long term on cultural resources because surface disturbance-related impacts to cultural resources would be minimized.
Special-Status Species / Wildlife	Management decisions under these resource programs would have a direct beneficial impact on cultural resources because of spatial buffers around wildife areas that would prevent ground-disturbing activities around cultural sites within the buffer.
Vegetation	Under all alternatives, vegetation treatments would have negligible direct impacts on cultural resources because all areas proposed for treatments would have site-specific cultural inventories performed prior to treatment, and known cultural resources would be avoided. Exposure could create indirect adverse impacts, however, to avoided cultural sites in treatment areas because these sites would be noticeable to the public: treatment-avoidance of sites would make them obviously visible as areas that contrast with the surrounding treated areas, with potential disturbance through collection of artifacts.

4.3.2.2. IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Cultural-resource management decisions common to all action alternatives (B through E) would have long-term, beneficial impacts on cultural resources. These management decisions would include developing cultural resource management plans (CRMPs) or cultural special recreation management areas (CSRMAs) to inventory and protect cultural resources in specific managment areas. In additions to protecting cultural resources, these plans would designate worthy sites to include in the NRHP, as appropriate, thereby raising awareness of the importance of the sites, removing access to specific sites at risk or otherwise restricting access, and proactively reducing fire hazards around sensitive sites. These actions would reduce impacts to cultural resource sites through early identification, assessment, and implementation of protective measures.

4.3.2.3. IMPACTS FROM ALTERNATIVES

Proposed management decisions for many resource programs within the Monticello PA vary by alternative. The potential impacts of these varying decisions are discussed in the following sections by alternative.

4.3.2.3.1. ALTERNATIVE A

Impacts to cultural resources from various BLM resource program decisions under Alternative A, excluding special designations, are summarized in Table 4.13. Because special designations incorporate an array of individualized management decisions, discussion of their impact on cultural resources follows the Table 4.13 summary.

Table 4.13. Impacts to Cultural Resources under Alternative A

Resource	Impact on Cultural Resources
Cultural Resources	Under Alternative A, the cultural resources on 37,433 acres of high site-density land in the Grand Gulch Special Emphasis area (GGSE)/Grand Gulch National Historic District (GGNHD) would be designated for special management. The plans for the GGSE/GGNHD provide protection for cultural resources that supplements that afforded by Section 106 of the NHPA. Cultural resources would be regularly monitored for impacts related to permissible uses, and measures to minimize or mitigate any impacts would be implemented when necessary. Restrictions on surface disturbances would reduce the risks of adverse impacts to cultural resources. These actions would also reduce the adverse impacts to sites, locations, and landscape features that are important to Native American tribes. The Old Spanish National Historic Trail would be afforded special consideration, including beneficial development of a management plan designed to protect the resource values that have made it nationally important. Under Alternative A, no allocation or group-size limits; restrictions on camping, OHV use, pets or dogs, or grazing; fire bans, fees, or other recreational limitations would be placed upon the Comb Ridge Cultural Special-Management Area (CRCSMA), the Butler Wash area east of Comb Ridge, the Tank Bench Cultural Special-Management Area (TBCSMA), the Beef Basin Cultural Special-Management Area (BBCSMA), or Monticello PA lands outside of these areas. No special considerations would be given to the proactive conservation, interpretation, investigation, or traditional allocation of cultural resources, except on an occasional case-by-case determination. Cultural resources in these areas would be avoided or impacts to them mitigated only through development or land uses that require permits or approval from the Monticello FO. There would be no restrictions on visits to the McLoydCanyon-Moon House site, although visitors are presently causing deterioration to portions of it (personal communication with Nancy Shearin, Monticello FO, May 7, 2003). Cultural resources not associated with areas of development or permitted use would continue to be subject to direct and indirect, adverse impacts from recreational activity, including OHV travel, group and individual camping, and hiking and touring in sites. Impacts of this nature are presently not quantifiable because records of them are not kept, and many incidents are unknown to the BLM owing to the remote and undocumented locations of many cultural resources within the Monticello PA.
Livestock Grazing	Allotments within the Monticello PA, with the exception of the five side canyons of Comb Wash, would be open to grazing, though site-specific closure or restrictions could be enacted if undue damage to cultural resources from livestock grazing occurred. Open allotments include 888,111 acres, in high site-density and 748,942 acres in medium site-density areas. This represents 90% of all estimated high site-density and 94% of all estimated medium site-density lands in the Monticello PA. Making grazing unavailable in certain high site-density areas would have a long-term, beneficial impact on their cultural resources. Trampling of archaeological sites and brushing and rubbing against structures and rock-art panels by livestock would be eliminated in these areas, though damage from hoofed wildlife would continue. Alternative A grazing decisions would be expected to pose slightly greater adverse risks to cultural resources than Alternatives B, C because Alternative A leaves more acres open to grazing. Alternative A would pose roughly comparable risk to cultural resources as Alternative D. However, under any alternative, the BLM may modify livestock grazing in specific areas when undue adverse impacts to cultural resource sites occur, which would reduce long-term adverse impacts.

Table 4.13. Impacts to Cultural Resources under Alternative A

Resource	Impact on Cultural Resources
Minerals, Oil, and Gas	Approximately 417 acres of land in high site-density and 313 acres in medium site-density areas would be subject to physical disturbance of varying degrees over the life of the RMP as a result of predicted RFD oil and gas development. This amounts to approximately 0.06% of the total acres of high site-density and 0.05% of medium site-density lands available for mineral development under Alternative A. The BLM's standard procedures require inventory of areas proposed for mineral development before it can occur. These inspections allow cultural resource sites to be identified and minimization, avoidance, or mitigation measures to be implemented. The Monticello PA contains several locations and landscape features that have been deemed culturally and/or spiritually important to Native American tribes with cultural patrimony in the area. Most of these areas, including Montezuma Canyon, the San Juan River, Comb Ridge, Mancos Jim Mesa, Spanish Mossback Mesa, and Allen Canyon, would be managed under a combination of NSO, controlled surface use (CSU), and standard leasing stipulations. Applying NSO and CSU leasing stipulations and restrictions would reduce the opportunities for surface-disturbing and other landscape-altering activities that would otherwise decrease the cultural, traditional, and/or spiritual values of these resources.
Minerals, Geophysical	Direct, adverse impacts to known cultural resources and sites from geophysical activities under this alternative are likely to be negligible to minor because resources and sites would be avoided or mitigated. Surface disturbance throughout the Monticello PA from geophysical activities under this alternative is estimated to be 886 acres over the life of the RMP. Assuming that the potential for such disturbance to occur in high and medium site-density areas is equal to the ratio of these lands available for geophysical work within the PA, then surface disturbance from geophysical work would be expected on approximately 479 acres (0.05%) of high site-density and 407 acres (0.05%) of medium site-density lands.
Non-WSA Lands with Wilderness Characteristics	Under this alternative, non-WSA lands with wilderness characteristics would not be protected or managed to preserve their wilderness values. Surface disturbances, impacts to cultural resources, and the mitigation applied to reduce impacts would be the same as analyzed and discussed under each resource for Alternative A.
Riparian Resources	Riparian resource-management decisions under Alternative A would be expected to have a negligible to minor, beneficial impact on cultural resources because they would restrict surface-disturbing activities in riparian zones and floodplains. Such management actions would affect approximately 14,383 acres of high site-density and 6,314 acres of medium site-density lands within the PA. This represents approximately 1.5% of all estimated high site-density and 0.8% of all estimated medium site-density lands within the PA. Limitations on surface-disturbing activities and other landscape alterations within riparian areas would provide some beneficial protection to waterways that possess culturally important features for Native American tribes.
Special-Status Species	The impacts would be the same as those described above under Impacts Common to All Alternatives (Section 4.3.2.1).
Travel	Travel management decisions under Alternative A would close 142,008 acres to OHV use in high site-density areas. This represents 14% of all estimated high site-density lands in the PA and would have long-term, beneficial impacts on cultural resources by minimizing OHV-related surface disturbances. Travel on an additional 422,805 acres (43%) in high site-density areas would be limited to designated roads and trails, with the same expected impact because no new OHV surface disturbance would be allowed. Because 423,619 acres (43%) in high site-density areas would be open to cross-country OHV use without restrictions, OHV travel in these areas would result in long-term, adverse impacts to cultural resources.

Table 4.13. Impacts to Cultural Resources under Alternative A

Resource	Impact on Cultural Resources
Visual Resources	Approximately 395,797acres of high site-density and 330,313 acres of medium site-density lands within the Monticello PA would be designated as VRM Class I or II. This represents 40% of all high site-density and 41% of all medium site-density lands in the PA. Management of these lands, especially those managed under VRM Class I objectives, would limit ground-disturbing activities that have the potential to impact cultural resources, which would have long-term, beneficial impacts on the resource.
Woodlands	Woodland harvesting zones would not be established, and all woodland areas within the PA, outside of WSAs, developed recreation areas, selected ACECs, and select cultural-resource management areas would be available for use. Within the PA, approximately 857,000 acres of land possess pinyon-juniper woodlands suitable for harvesting. Of those lands, approximately 464,446 acres are located in high site-density and 392,559 acres in medium site-density areas. This represents approximately 47% of all estimated high site-density and 49% of all estimated medium site-density lands in the PA. Permits to harvest and gather woodland products would be processed on a case-by-case basis. Collection of woodland products, except dead wood for camp fires, would be prohibited in all WSAs, as well as in several known high site-density areas, including Arch Canyon, the Alkali Ridge National Historic Landmark, the mesa tops of the GGNHD, the BBCSMA, Fable Valley, and the CRCSMA south of Highway 95. Collection of woodland products would also be prohibited on known cultural resource sites. Further, woodland product gathering under a permit would require pregathering identification and subsequent avoidance of cultural resources. Pinyon and juniper comprise the primary woodland targets for harvesting within the PA, and these vegetation environments are linked to relatively high densities of cultural resource sites. The restrictions placed on gathering and harvesting woodland products and the limited amount of ground disturbance associated with actual gathering within the Monticello PA under Alternative A would result in a low potential for direct, adverse impacts to cultural resources. However, the potential for indirect impacts would be relatively high because of OHV travel-related surface disturbances to harvest and collect woodland products, and the potential looting and vandalism resulting from use of the harvesting areas.

Special-designations management decisions under Alternative A would have both direct and indirect, long-term impacts on cultural resources within the Monticello PA. WSAs account for 386,027 acres on land within the PA and overlap with other special designation lands (e.g., Areas of Critical Environmental Concern [ACECs]) to a great extent (see Map 81). A total of 230,969 acres in WSAs are lands classified with high site density, and 153,926 acres are classified as having medium site density (totaling 384,895 acres). The WSA acreage is the same under all of the alternatives because WSA designation is not part of the RMP. WSAs are managed under the Interim Management Policy (IMP), which imposes restrictions on ground-disturbing activities that may impair the wilderness suitability of that WSA. Actions generally considered to meet this non-impairment standard are those that are short-term, do not create surface disturbances or do not allow the construction of permanent facilities. When completed, surface disturbances may not degrade the area to such an extent that they substantially constrain Congress's decision to designate the area as wilderness. Because of these restrictions on surface-disturbing activities, the impacts to cultural resources within WSAs would be long-term, indirect, and beneficial.

In addition to WSAs, special designation areas include ACECs and wild and scenic rivers (WSRs). The following discussion addresses these other special designation areas. High cultural-

resource site-density areas pose the greatest concern for potential adverse impacts in special designation areas, so this discussion focuses on them. Special designation areas (excluding WSAs) under Alternative A encompass approximately 121,769 acres with high site-density. This represents approximately 12% of all estimated high site-density lands within the Monticello PA. Within these special designation areas, management decisions include a range of prescriptions that would benefit cultural resources by affording them direct and indirect protection from potentially adverse impacts. These decisions include implementing NSO stipulations for mineral development on approximately 2,539 acres, managing approximately 2,272 acres under VRM Class I objectives (with limitations on surface disturbances), eliminating OHV use on approximately 2,904 acres, and prohibiting mineral disposal and geophysical work on 3,171 acres of high site-density lands. Table 4.14 lists the special designation areas where these decisions apply and the acreage of high site-density lands they contain. If a special designation area is not listed in the table, either the decisions do not apply to it, or no estimated acres of high site-density lands occur within it. The restrictions noted in the table reduce the potential impacts to cultural resource sites from surface disturbance. These sites include ones identified by Native American tribes as culturally, traditionally, or spiritually important that may be located either in or adjacent to special designation areas.

Table 4.14. Acres of High Site-Density Lands in Special Designation Areas with Decisions Affecting Cultural Resources, Alternative A

Special Designation (All ACECs)	NSO for Mineral Development	Closed to Mineral Development	Closed to Mineral Disposal	Closed to Geophysical Work	Designated as VRM Class I	Closed to OHV Use
Hovenweep	267	0	267	0	0	0
Indian Creek	2,272	0	2,272	0	2,272	2,272
Lavender Mesa	0	0	632	0	0	632
Totals	2,539	0	3,171	0	2,272	2,904

Within many special designation areas, surface-disturbing activities would still be allowed, but for the most part, regulations would limit the amount of actual disturbance (e.g., CSU stipulations for mineral development and requirements for non-mechanized vegetation treatments). Many of these areas would also be managed under VRM Class II objectives, which, while less restrictive than VRM Class I, would still provide a high level of protection to cultural resources by limiting surface-disturbing activities.

4.3.2.3.2. ALTERNATIVE B

Table 4.15 summarizes impacts to cultural resources from various BLM resource program decisions under Alternative B, excluding special designations. Because special designations incorporate an array of individualized management actions, discussion of their impact on cultural resources follows the Table 4.15 summary.

Table 4.15. Impacts to Cultural Resources under Alternative B

Resource Program	Impact on Cultural Resources
Cultural Resources	The impacts to cultural resources would be the same as under Alternative A, except that 98,348 acres of land in high-density site areas would receive special management consideration (restrictions on surface disturbance and OHV use) to protect important cultural resource values. Cultural resource special management would increase the beneficial impacts. Segments of the Old Spanish National Historic Trail would be designated for types of travel that would not damage or alter their historic condition. Additionally, special recreation permits would be authorized only for heritage tours and reenactments on the trail. Limiting damaging travel and trail use would have a direct, long-term, beneficial impact on the trail because intact segments would be better preserved. Imposing private and commercial size limits for recreational and land-use groups and implementing a permit system would have long-term beneficial impacts on cultural resources in restricted areas because reducing the number of people in or near cultural resource sites at any given time would minimize deterioration and degradation. The smaller the group-size on a given site at a given time, the lower the probable adverse recreational impact to a site. Specific group-size and visitation limits for the McLoyd Canyon-Moon House ruin would be more stringent than restrictions for other sites. These limitations would directly and beneficially impact the site in the long-term.
Livestock Grazing	Approximately 137,440 acres of land would be maintained as unavailable for grazing, and additional areas would also be unavailable for grazing in at least 11 known high site-density areas. Alternative B would also restrict livestock activities to trailing in at least 4 other high site-density locations. Beyond these unavailable or restricted areas, grazing would be permitted on 1,627,623 acres of land within the Monticello PA. These lands are located in both high (882,676 acres) and medium (744,947 acres) site-density areas. This represents 90% of all estimated high site-density and 93% of all estimated medium site-density lands in the PA. Cultural resource sites in these areas would be exposed to potentially adverse trampling by livestock. Alternative B would leave approximately the same total number of acres open to grazing as Alternatives A and C; however, Alternative B has approximately 5,435 fewer acres in high site-density areas than does Alternative A. Alternative B leaves the same number of acres in high site-density areas open to grazing as Alternative C, and approximately 9,200 fewer total acres than Alternative D. Consequently, Alternative B would presumably have a slightly lower, potentially adverse grazing impact on cultural resources than Alternatives A and D and roughly the same as Alternative C.
Minerals, Oil, and Gas	The impacts to cultural resources would be the same as under Alternative A, except that approximately 338 acres of land in high site-density and 298 acres in medium site-density areas would be subject to varying degrees of disturbance over the life of the RMP, based on the RFD predicted development of oil and gas resources. This would be approximately 0.04% of the total acres of high site-density and 0.04% of medium site-density lands available for mineral development under Alternative B. The exact number of sites involved in development cannot be predicted at this time; however, impacts to specific sites are not expected to be any greater than under Alternative A because Alternative B specifies the same level of identification of sites and avoidance, minimization, or mitigation of impacts. Alternative B decisions could have slightly less impacts on cultural landscapes in developed areas than Alternative A because the total number of acres subject to disturbance under Alternative B would be somewhat lower than Alternative A. The Monticello PA contains several locations and landscape features that have been deemed culturally and/or spiritually important to Native American tribes. Most of these areas, including Montezuma Canyon, the San Juan River, Comb Ridge,

Table 4.15. Impacts to Cultural Resources under Alternative B

Resource Program	Impact on Cultural Resources
	Mancos Jim Mesa, Spanish Mossback Mesa, and Allen Canyon, would be managed under a combination of NSO, CSU, and standard leasing stipulations. Applying NSO and CSU stipulations would reduce the opportunities for surface-disturbing activities and other landscape-altering activities that could decrease the cultural, traditional, and/or spiritual values of these resources.
Minerals, Geophysical	The impacts to cultural resources would be the same as under Alternative A, except that surface disturbance would be reduced to approximately 427 acres of high site-density and 367 acres of medium site-density lands. This represents 0.04% of all estimated high site-density and 0.05% of all estimated medium site-density lands within the PA. Alternative B would produce surface disturbance in approximately 92 fewer acres (52 in high site-density and 40 in medium site-density areas) than Alternative A.
Non-WSA Lands with Wilderness Characteristics	Under this alternative, non-WSA lands with wilderness characteristics would not be protected or managed to preserve their wilderness values. Surface disturbances, impacts to cultural resources, and the mitigation applied to reduce impacts would be the same as analyzed and discussed under each resource for Alternative B.
Riparian Resources	The same impacts are predicted as under Alternative A, except Alternative B would implement additional restrictions that would indirectly protect cultural resources within certain riparian areas. These restrictions apply to OHV use and livestock grazing (see Chapter 2 Alternatives, Riparian). The additional restrictions on the use and disturbance of riparian and floodplain resources under Alternative B are expected to produce slightly greater beneficial impacts to cultural resources in these restricted zones by further reducing opportunities for surface-disturbing activities.
Special Status Species	Limited long-term, indirect, beneficial impacts to cultural resources are likely from restrictions on surface disturbance in areas of special-species habitat. The benefit would be slightly greater than under Alternative A because the wildlife protection spatial buffers would be larger.
Travel	Because of 238,879 acres in high site-density areas would be closed to OHV use under Alternative B, there would be similar beneficial impacts, but to a greater degree, than those discussed under Alternative A. This acreage represents 24% of all estimated high site-density lands within the PA. When compared to Alternative A, travel in an additional 325,669 acres (76%) in high site-density areas would be limited to designated roads and trails with the same long-term beneficial impacts to cultural resources. No areas within the Monticello PA would be open to cross-country OHV use, with greater long-term, beneficial impacts than Alternative A because 1) 423,619 acres (43%) in high site-density areas (open under Alternative A) would be protected from travel-related surface disturbances, and 2) Alternative B would identify approximately twice as many acres for limited use (designated route restrictions) as Alternative A, which would result in long-term beneficial impacts on cultural resources.
Visual Resources	Approximately 431,797acres of high site-density and 315,022 acres of medium site-density lands within the Monticello PA would be managed under VRM Class I or Class II objectives. This represents 44% of all high site- density and 40% of all medium site-density lands in the PA. The impacts from Alternative B on cultural resources would be similar to, but greater in degree, than those under Alternative A because more area would be protected under VRM Class I and Class II designations.

Table 4.15. Impacts to Cultural Resources under Alternative B

Resource Program	Impact on Cultural Resources
Woodlands	Although 307,179 acres of high site-density and 504,391 acres of medium site-density areas would be open for woodland harvesting, there would be limited restrictions on OHV travel into these areas. These areas represent 31% of all estimated high site-density and 63% of all estimated medium site-density lands in the PA. Cultural-resources inventories would be required before woodlands could be harvested on lands within the North Comb (Comb Ridge) area north of Highway 95 and the Montezuma watershed. The Cedar Mesa Cultural SRMA, outside of the WSA, would be closed to harvesting. Gathering woodland products for private use would have a low potential for long-term, adverse impacts on cultural resources within open areas, except in instances where OHV travel to gather these products is permitted. Commercial woodland harvesting would have greater impact than private use because it would occur on a larger scale. Potential adverse impacts to cultural resources from woodlands management decisions under Alternative B would likely be slightly lower than those anticipated for Alternative A because Alternative B imposes greater travel restrictions, imposes requirements for cultural-resource surveys, and would close at least one high site-density area (Cedar Mesa) to harvesting.

Special-designations management decisions under Alternative B would have both direct and indirect long-term impacts on cultural resources within the Monticello PA. As noted with Alternative A, WSAs account for 386,027 acres on land within the PA and overlap with other special designation lands (e.g., ACECs) to a great extent (see Map 82). A total of 230,969 acres in WSAs are lands classified with high cultural resource site-density, and 153,926 acres are classified with medium site-density. All alternatives would include the same acreage for WSAs. WSAs are managed under the IMP, which imposes restrictions on surface-disturbing activities. These restrictions, the same as those described for Alternative A, would have long-term, indirect, beneficial impacts on cultural resources within these areas by reducing opportunities for disturbance.

The following discussion addresses special designation areas other than WSAs. Within these other special designation areas, the different alternatives propose an array of management actions that vary widely in the level of surface disturbance they allow or prohibit. Since high cultural-resource site-density areas pose the greatest concern for potential adverse impacts in special designation areas, this discussion focuses on them. Special designation areas that would be managed under Alternative B include approximately 151,992 acres with high site-density. This represents approximately 15% of all estimated high site-density lands within the PA. Within these special designation areas, management decisions would include a range of prescriptions that would benefit cultural resources by affording them direct and indirection protection from adverse impacts. These prescriptions would include implementing NSO leasing stipulations for mineral development on approximately 44,185 acres, closing areas to mineral development on 17,833 acres, managing approximately 61,736 acres under VRM Class I objectives (with limitations on surface disturbance), eliminating OHV use on approximately 2,904 acres, and prohibiting mineral disposal and geophysical work on 85,141 acres of high site-density lands. Table 4.16 lists the special designation areas where these decisions apply and the acreage of high site-density lands they contain. If a special designation area is not listed in the table, either the decisions do not apply to it, or no estimated acres of high site-density lands occur within it. The

restrictions noted in the table reduce the risk of impact on cultural resource sites by surface-disturbing activities.

Table 4.16. Acres of High Site-Density Lands in Special Designation Areas with Decisions Affecting Cultural Resources, Alternative B

Special Designations (All ACECs)	NSO for Mineral Development	Closed to Mineral Development	Closed to Mineral Disposal	Closed to Geophysical Work	VRM Class I Designation	Closed to OHV Use
Alkali Ridge[1]	2,146	0	2,146	2,146	0	0
Hovenweep	277	0	277	277	0	0
Indian Creek	2,272	0	2,272	0	2,272	2,272
Lavender Mesa	632	0	632	632	0	632
Lockhart Basin	36,623	0	36,623	0	36,623	0
San Juan River	2,235	0	2,235	2,235	5,008	0
Valley of the Gods	0	17,833	17,833	17,833	17,833	0
Totals	44,185	17,833	62,018	23,123	61,736	2,904

[1]Includes the Alkali Ridge National Historic Landmark (2,146 acres)

Within many special designation areas, surface-disturbing activities would still be allowed, but for the most part, management decisions would limit the amount of actual disturbance (e.g., CSU leasing stipulations for mineral development, and requirements for non-mechanized vegetation treatments). Many of these areas would also be managed under VRM Class II objectives, which, while less restrictive than VRM Class I, would still provide a measure of protection to cultural resources by limiting surface-disturbing activities.

4.3.2.3.3. ALTERNATIVE C

Table 4.17 summarizes impacts to cultural resources from various BLM resource program decisions under Alternative C, excluding special designations. Because special designations incorporate an array of individualized management decisions, discussion of their impact on cultural resources follows the Table 4.17 summary.

Table 4.17. Impacts to Cultural Resources under Alternative C

Resource Program	Impact on Cultural Resources
Cultural Resources	As discussed under Alternative B, 98,348 acres of land in high-density site areas would be subject to special management consideration to protect important cultural resource values. Cultural-resource program decisions and impacts under Alternative C would be the same as discussed under Alternative B. The potential impacts related to the management of the Old Spanish National Historic Trail would be identical to those described for Alternative B. Impacts due to recreational use of cultural resources would be the same as for Alternative B, except that there would be a negligible increase in adverse impacts because of larger commercial group sizes allowed in high site-density areas.
Livestock Grazing	Potential adverse and beneficial impacts to cultural resources under Alternative C would be the same as those described for Alternative B because the two alternatives would manage approximately the same areas open, unavailable, or restricted to livestock grazing.
Minerals, Oil, And Gas	Approximately 381 acres of land in high site-density and 329 acres in medium site-density areas would be subject to varying amounts of physical disturbance over the life of the RMP. These equates to approximately 0.05% of the total acres of high site-density and 0.05% of medium site-density lands available for mineral development under Alternative C. Alternative C could have a slightly greater impact on cultural landscapes than Alternative B because the total number of acres subject to disturbance would be somewhat higher, but less than Alternative A.
Minerals, Geophysical	Impacts would be the same but slightly greater in intensity than those described under Alternative A because surface disturbance is estimated to be 903 acres over the life of the RMP. Approximately 489 acres of high site-density and 414 acres of medium site-density lands would be involved. This represents 0.05% of all estimated high site-density and 0.05% of all estimated medium-site density lands within the PA. Alternative C would produce surface disturbance in approximately 17 more acres (10 in high site-density and 7in medium site-density areas) than Alternative A.
Non-WSA Lands with Wilderness Characteristics	Under this alternative, non-WSA lands with wilderness characteristics would not be protected or managed to preserve their wilderness values. Surface disturbances, impacts to cultural resources, and the mitigation applied to reduce impacts would be the same as analyzed and discussed under each resource for Alternative C.
Riparian Resources	The impacts are identical to those discussed for Alternative B.
Special-Status Species	Limited, long-term, beneficial impacts on cultural resources would be expected in areas where spatial buffers against surface disturbance around habitats are created. Alternative C is expected to have greater long-term beneficial impact on cultural resources than Alternatives A and B because of the larger buffer areas.
Travel	The impacts would be the same as those discussed under Alternative A, except the long-term beneficial impacts would increase because of closed areas (234,890 acres [24%] in high site-density areas) and designated routes (an additional 750,153 acres [76%] in high site-density areas). The long-term adverse impacts within designated open OHV areas would be reduced to 2,311 acres (0.2% of the Monticello PA).

Table 4.17. Impacts to Cultural Resources under Alternative C

Resource Program	Impact on Cultural Resources
Visual Resources	Approximately 324,539 acres of high site-density and 242,876 acres of medium site-density lands within the Monticello PA would be managed for VRM Class I or II conditions. This represents 33% of all high site-density and 30% of all medium site-density lands in the PA. The beneficial impacts of Alternative C on cultural resources would be similar but less than with Alternative A because fewer acres would be protected under VRM Class I and Class II designations.
Woodlands	Under Alternative C, 367,319 acres of high cultural-resource site-density and 229,492 acres of medium site-density areas would be available for woodcutting. This represents 37% of all estimated high site-density and 29% of all estimated medium site-density lands within the PA. Off-road travel to gather woodland products would be permitted across a portion of the open areas. Cultural-resource inventories would be required before woodland products could be harvested on lands within the North Comb (Comb Ridge) area north of Highway 95 and the Montezuma watershed. The Cedar Mesa Cultural SRMA, outside of the WSA, would be closed to wood gathering or harvesting. Potential impacts to cultural resources from woodlands management decisions under Alternative C would probably be lower than those anticipated for Alternative A because Alternative C imposes greater travel restrictions and requirements for cultural-resource inventories.

Special-designations management decisions under Alternative C would have both direct and indirect long-term impacts on cultural resources within the Monticello PA. As noted under Alternative A, WSAs account for 384,895 acres of land within the PA and overlap with other special designations (e.g., ACECs) to a great extent (see Map 83). WSAs are managed under the IMP, which implements stringent restrictions on surface-disturbing activities (see the discussion for special designations in Table 4.13 in Section 4.3.2.3.1, Alternative A). A total of 230,969 acres in WSAs are lands classified with high cultural-resource site density. Another 153,926 acres are classified with medium site density. The same acres and management prescriptions would apply to WSAs across all alternatives. Consequently, the potential impacts on cultural resources in WSAs within special designation areas under Alternative C would be identical to those described previously for Alternatives A and B.

Special designation areas that would be managed under Alternative C include approximately 57,267 acres of lands with high cultural-resource site density. This represents approximately 6% of all estimated high site-density lands within the PA. Within these special designation areas, management actions include a range of prescriptions that would benefit cultural resources by affording them direct and indirect protection from adverse impacts. These decisions include implementing NSO leasing stipulations for mineral development on approximately 5,290 acres, closing areas to mineral development on 17,833 acres, managing approximately 22,841 acres under VRM Class I objectives (with strict limitations on surface disturbance), eliminating OHV travel on approximately 632 acres, and prohibiting mineral disposal on 23,123 acres of high site-density lands. Table 4.18 lists the special designation areas where these decisions apply and the acreage of high site-density lands they contain.

Table 4.18. Acres of High Site-Density Lands in Special Designation Areas with Decisions Affecting Cultural Resources, Alternative C

Special Designation (All ACECs)	NSO for Mineral Development	Closed to Mineral Development	Closed to Mineral Disposal	Closed to Geophysical Work	VRM Class I Designation	Closed to OHV Use
Alkali Ridge[1]	2,146	0	2,146	0	0	0
Hovenweep	277	0	277	0	0	0
Lavender Mesa	632	0	632	0	0	632
San Juan River	2,235	0	2,235	0	5,008	0
Valley of the Gods	0	17,833	17,833	0	17,833	0
Totals	**5,290**	**17,833**	**23,123**	**0**	**22,841**	**632**

[1]Includes the Alkali Ridge National Historic Landmark (2,146 acres)

If a special designation area is not listed in the table, either the decisions do not apply to it, or no estimated acres of high site-density lands occur within it. The restrictions noted in the table reduce opportunities for surface-disturbing activities to impact cultural resource sites.

Alternative C provides for approximately twice as many acres covered by NSO leasing stipulations in high site-density special designation areas as Alternative A but 8 times fewer acres than Alternative B. Alternative C would close more acres to mineral development in non-WSA special designation areas than Alternative A and the same number of acres as Alternative B. Alternative C would manage approximately 10 times more high site-density lands under VRM Class I objectives than would Alternative A but approximately 3 times less than Alternative B. Alternative C would close approximately 5 times fewer acres of land in high site-density areas to OHV travel than Alternatives A and B. Alternative C would close approximately 7 times more land in high site-density areas to mineral disposal and geophysical work than Alternative A but approximately 3 times less than Alternative B. In all cases, Alternative C would provide greater benefits to cultural resources in special designation areas than would Alternative D, which implements no special designation regulations.

Surface-disturbing activities would still be allowed, but in general, regulations would limit the level of actual disturbance (e.g., CSU stipulations for mineral development and requirements for non-mechanized vegetation treatments). Many of these areas would also be managed under VRM Class II objectives, which, while less restrictive than VRM Class I objectives, would still provide protection to cultural resources by limiting surface-disturbing activities.

4.3.2.3.4. ALTERNATIVE D

Cultural resource management decisions under Alternative D would produce all of the impacts discussed in Section 4.3.2.1, Impacts Common to All Alternatives. However, as is the case with all the other alternatives, Alternative D proposes additional decisions that would also affect cultural resources within the PA. Table 4.19 summarizes the impacts to cultural resources from resource management decisions under Alternative D, excluding special designations. Because special designations incorporate an array of individualized management actions, discussion of their impact on cultural resources follows the Table 4.19 summary.

Table 4.19. Impacts to Cultural Resources under Alternative D

Resource Program	Impact on Cultural Resources
Cultural Resources	Special management consideration would be given to 38,995 acres of land in high-density site areas to protect important cultural resource values. Alternative D would designate similar, but slightly greater, acreage in high-density site areas for specific management consideration than Alternative A but only approximately one-third the acreage of Alternatives B and C. The Comb Ridge/Butler Wash, the Tank Bench, and Beef Basin areas would not be managed as CSMAs. Because fewer acres of high site-density areas are designated for special management of cultural resources, the opportunities for long-term benefits would be reduced, and the risk that cultural resource sites in these areas could be impacted would increase. This would pose the same potential risks to cultural resources as Alternative A. The McLoyd Canyon-Moon House would be managed under Alternative D, for the most part, the same way as under Alternative C, which is also very similar to Alternative B. Consequently, potential impacts to cultural resources under Alternative D are similar to those described for Alternatives B and C. Compared to Alternative A, this alternative would be more beneficial because restrictions would be applied under this alternative to protect the site that would not be applied under Alternative A. The impact to historic trails would be the same as that of Alternative C. Potential recreation impacts on cultural resources under Alternative D would be similar to those discussed with Alternative C because the same limits are imposed on commercial group size in high site-density areas; however, Alternative D would allow four additional persons per private group. This larger group size would slightly increase the risk of potential impacts to cultural sites. The larger number of visitors per day to McLoyd Canyon-Moon House under Alternative D would intensify the potential impacts on the ruin and surrounding sites because of the "wear and tear" that comes with more foot traffic. Compared to Alternative A, this alternative would be more beneficial for the site for reasons as shown under Cultural Resources above.
Livestock Grazing	The 137,440 acres currently unavailable to grazing would be maintained, and additional acreage would be unavailable to grazing in at least 9 known high site-density areas. Outside of these areas, grazing would be permitted on 1,636,844 acres of land within the PA. These lands are located in both high (887,971 acres) and medium (748,873 acres) site-density areas. Cultural resource sites in these areas would be exposed to potential trampling by livestock as described under Alternative B. Alternative D would manage approximately 9,200 acres more than any other alternative as available to grazing. Approximately 140 less grazing acres would be located in high site-density areas under Alternative D than under Alternative A, but Alternative D would make approximately 5,295 more acres in high site-density areas available to grazing than would Alternatives B and C. Consequently, Alternative D would likely have greater potential adverse impacts on cultural resources than either Alternatives B and C and roughly the same impacts as Alternative A. Alternative D would probably also have lower potential beneficial impacts to cultural resources than Alternatives B and C, where fewer known high site-density areas would be unavailable for grazing. Potential beneficial impacts under Alternative D would be comparable to those under Alternative A.

Table 4.19. Impacts to Cultural Resources under Alternative D

Resource Program	Impact on Cultural Resources
Minerals, Oil, and Gas	Approximately 391 acres of land in high site-density and 330 acres in medium site-density areas would be impacted by varying levels of disturbance from mineral development over the life of the RMP. This surface area would be approximately 0.05% of the total acres of high site-density and 0.05% of medium site-density lands available for mineral development under Alternative D. However, impacts to specific sites are not expected to be any greater under this alternative because the same level of identification of sites and avoidance, minimization, or mitigation of impacts prior to surface disturbance would be required. Alternative D could have a slightly greater impact on cultural landscapes in developed areas than Alternative B because the total number of acres subject to disturbance would be higher. Additionally, potential impacts to cultural landscapes under Alternative D would be greater than those anticipated for Alternative B, but slightly less than Alternative A because fewer acres would be potentially impacted.
Minerals, Geophysical	Temporary surface disturbance that is reclaimed within 10 years would be prescribed under Alternative D. All geophysical work would be subject to the BLM standard policy of resource identification and avoidance, minimization, and/or mitigation of adverse impacts. For this reason, impacts to cultural resources from geophysical activities under this alternative are expected to be minimal. Approximately 924 acres can potentially be disturbed over the life of the RMP. This consists of approximately 501 acres of high site-density and 423 acres of medium site-density lands and represents 0.05% of all estimated high site-density and 0.05% of all estimated medium site-density lands within the PA. Alternative D would produce surface disturbance in approximately 38 more acres (22 in high site-density and 16 in medium site-density areas) than Alternative A. It would also produce surface disturbance in 130 more acres (74 in high site-density and 56 in medium site-density areas) than Alternative B and 21 more acres (12 in high site-density and 9 in medium site-density areas) than Alternative C.
Non-WSA Lands with Wilderness Characteristics	Under this alternative, non-WSA lands with wilderness characteristics would not be protected or managed to preserve their wilderness values. Surface disturbances, impacts to cultural resources, and the mitigation applied to reduce impacts would be the same as analyzed and discussed under each resource for Alternative D.
Riparian Resources	Impact to riparian resources under Alternative D would be the same as Alternative A.
Special-Status Species	Limited, long-term, beneficial impacts on cultural resources would result in areas where spatial buffers are created. Alternative D would likely have a greater long-term beneficial impact on cultural resources than Alternative A, which designates no buffers, but less than Alternatives B and C, which have larger buffers.
Travel	Travel would be limited to designated routes, and more acres would be placed in this category under Alternative D than under any other alternative. However, fewer acres would be closed to OHV use under Alternative D than under any other alternative. Alternative D would specify fewer acres open to unrestricted OHV use than Alternative A, more acres open than Alternative B, and the same number of acres open as Alternative C. Alternative D would have slightly greater long-term beneficial impacts on cultural resources because travel would be restricted on more acreage to designated routes (985,043 acres in high site-density areas) than with Alternative A. There would also be fewer long-term adverse impacts to cultural resources than under Alternative A because the total acreage available for open OHV use (2,311 acres) would be less.

Table 4.19. Impacts to Cultural Resources under Alternative D

Resource Program	Impact on Cultural Resources
Visual Resources	Approximately 237,057 acres of high site-density and 162,201 acres of medium site-density lands within the Monticello PA would be managed under VRM Class I or Class II objectives. This represents 24% of all high site-density and 20% of all medium site-density lands in the PA. Management of these lands, especially under VRM Class I conditions, would limit ground-disturbing activities that have the potential to impact cultural resources. The potentially adverse impacts of Alternative D decisions on cultural resources would be similar to, but less than, Alternative A because a smaller area would be protected under VRM Class I and Class II designations.
Woodlands	The impacts to cultural resources would be the same as under Alternative C, except that fewer restrictions would be placed on OHV travel to gather and transport harvested wood. Consequently, potential adverse impacts under Alternative D would likely be less than with Alternative A, which would have fewer travel restrictions.

Special-designations management decisions under Alternative D would have both direct and indirect long-term impacts on cultural resources within the Monticello PA. Under Alternative D, no ACECs would be designated nor would any Wild and Scenic River (WSR) segments be recommended as eligible for WSR status; however, existing WSAs would continue to be managed under the IMP, with stringent restrictions on surface-disturbing activities. As the same acres and management prescriptions would apply to WSAs across all alternatives, the potential impacts on cultural resources within WSAs under Alternative D would be identical to those described previously for Alternatives A, B, and C. However, Alternative D would implement no other types of special designations with their associated limitations on surface-disturbing activities. Therefore, the beneficial impacts to cultural resources in special designation areas under Alternative D would be less than those anticipated for any other proposed alternative.

4.3.2.3.5. ALTERNATIVE E

Potential impacts to cultural resources under Alternative E would be identical to those described for Alternative B, except that this alternative would proposed management decisions that would provide greater protection for cultural resources. Under Alternative E, 582,357 acres of non-WSA lands with wilderness characteristics would be closed to mineral leasing and disposal of mineral materials, managed under VRM Class I objectives, retained in federal ownership, and closed to firewood gathering, woodland harvesting and OHV use. These areas would also be excluded from rights-of-way (ROWs) permitting. It would also be recommended that these lands be withdrawn from locatable mineral entry. These actions would reduce the potential for direct and indirect adverse impacts on cultural resources by eliminating surface-disturbing activities and motorized access into more remote, generally unmonitored areas that may contain such resources. Table 4.20 summarizes the impacts of Alternative E's resource-program decisions that differ from Alternative B.

Table 4.20. Impacts to Cultural Resources under Alternative E Where They Differ from Alternative B

Resource Program	Impact on Cultural Resources
Minerals, Oil, and Gas	Approximately 327acres of land in high site-density and 192 acres in medium site-density areas would be impacted by varying degrees of disturbance over the life of the RMP. This amounts to approximately 0.03% of the total acres of high site-density and 0.02% of medium site-density lands available for mineral development under Alternative E. The precise number of sites involved in development cannot be predicted; however, impacts to specific sites are not expected to be any greater than under Alternative A because the same level of identification of sites and avoidance, minimization, or mitigation of impacts would be required. Alternative E could have slightly less impact on cultural landscapes in developed areas than Alternatives A and B because the total number of acres subject to disturbance is somewhat lower. Potential impacts to cultural landscapes under Alternative E would also be slightly less than those anticipated for Alternatives C and D. The Monticello PA contains several locations and landscape features that have been deemed culturally and/or spiritually important to Native American tribes with cultural patrimony in the area. Most of these known areas, including Montezuma Canyon, the San Juan River, Comb Ridge, Mancos Jim Mesa, Spanish Mossback Mesa, and Allen Canyon, would be managed under a combination of NSO, CSU, and standard leasing stipulations. Applying NSO and CSU stipulations would reduce opportunities for surface-disturbing and other landscape-altering activities that could decrease the cultural, traditional, and/or spiritual values of these resources.
Non-WSA lands with Wilderness Characteristics	More restrictive, beneficial, management (e.g., no surface-disturbing activities, VRM Class I designation, no OHV use or ROW permitting) would be prescribed for cultural resources within non-WSA lands with wilderness characteristics; this is particularly notable for lands in the CRCSMA and BBCSMA. Non-WSA lands with wilderness characteristics in these CSMAs would include Comb Ridge (13,760 acres), Fish and Owl Creek Canyons (3,580 acres), Road Canyon (530 acres), the San Juan River (640 acres), Dark Canyon (13,280 acres), and Butler Wash (1,180 acres).
Travel	Approximately 474,291 acres in high site-density areas would be closed to OHV use. This encompasses 48% of all estimated high site-density lands within the PA. Travel in an additional 513,062 acres (52%) in high site-density areas would be limited to designated routes. No areas within the Monticello PA would be open to unrestricted, cross-country OHV use. Alternative E would close more acres to OHV use than any other alternative, and approximately 179 miles of OHV routes would be closed in lands with non-WSA wilderness characteristics. Approximately one-third more areas would be restricted to limited use (through designated route restrictions) under Alternative E than under Alternative A. Alternative E would designate fewer acres for limited OHV use (through designated route restrictions) than would Alternatives B, C, and D, though it would close more acres to OHV use than Alternatives C and D. These travel decisions would have potential long-term beneficial impacts to cultural resource sites in high-density areas throughout the Monticello PA, and the beneficial impacts would likely be greater under Alternative E than any other alternative because fewer sites away from designated routes could be impacted by direct and indirect OHV use. Long-term adverse impacts under Alternative E would be expected to be approximately the same as under Alternative B, which has similar acreage distributed among categories of closed and limited OHV use. Alternative E would produce fewer long-term adverse impacts than Alternatives A and D, which close substantially fewer acres to OHV

Table 4.20. Impacts to Cultural Resources under Alternative E Where They Differ from Alternative B

Resource Program	Impact on Cultural Resources
	use.
Visual Resources	Approximately 565,528 acres of high site-density and 544,314 acres of medium site-density lands within the Monticello PA would be managed under VRM Class I or Class II objectives. This represents 57% of all high site-density and 68% of all medium site-density lands in the PA. Managing these lands, especially for VRM Class I objectives, would limit ground-disturbing activities that have the potential to impact cultural resources. Therefore, cultural resources located on these lands would experience a long-term benefit. Alternative E would manage the most acres of land among the alternatives under VRM Class I or Class II designations, and would have more beneficial impacts on cultural resources than Alternative A because greater restrictions would be placed on surface disturbances within the PA.
Woodlands	Alternative E would open 241,712 acres of high site-density and 129,498 acres of medium site-density areas for woodland harvesting, with limited restrictions on OHV travel. This would encompass 24% of all estimated high site-density and 16% of all estimated medium site-density lands in the PA. Alternative E would likely have a lower potential for adverse impacts than Alternatives B, C, and D because they would allow woodland harvesting on more land. It should be noted, however, that Alternatives C and D place greater restrictions on off-road travel to transport woodland products than does Alternative E. These travel restrictions would lower the potential risk of impacts to cultural resource sites.

4.3.2.4. SUMMARY OF IMPACTS

In general, impacts to cultural resources would be long-term, with short-term impacts typically being indirect and temporary, such as visual or auditory intrusions on traditional cultural sites or sacred properties. As the majority of management decisions proposed under the RMP would be for the long term, impacts to cultural resources from program decisions are considered to be long-term.

All alternatives considered in this DEIS have the potential to impact cultural resources within the Monticello PA. The risk of or potential for impact varies depending on the type of management decisions that any given alternative would implement. All alternatives would comply with applicable laws, such as the NHPA, and internal BLM policy. These laws and policies require the BLM to consider cultural resources when implementing management decisions; consider ways to avoid, minimize, or mitigate adverse impacts to important cultural resources; and consult with interested parties, including federally recognized Native American tribes.

In general, Alternative E provides the most potential beneficial impact to cultural resources within the Monticello PA of all the alternatives. This is because Alternative E would enact greater restrictions than any other alternative on surface-disturbing activities such as mineral development, recreational use, and OHV travel and would include more special designation areas and non-WSA lands with wilderness characteristics with their proposed management restrictions on surface disturbance and OHV travel and managing areas under VRM Class I and II objectives. These management decisions would reduce the opportunities for adverse impacts to

cultural resources. Alternatives B and E would focus on proactive management of cultural resources by developing integrated cultural/recreational management plans. Based upon these same decisions, Alternative C would provide the next greatest benefit to cultural resources, followed by Alternative A. Alternative D would provide the least amount of benefit to cultural resources in the Monticello PA of all the alternatives.

4.3.2.5. Mitigation Measures

All decisions and actions described under all the alternatives for the Monticello PA RMP must also comply with cultural resource laws, such as Section 106 of the NHPA, as well as internal agency guidelines. These laws and guidelines require consideration of alternatives to eliminate, reduce, and/or mitigate adverse impacts to cultural resources. Although the preferred treatment of important cultural resources within an area is complete avoidance, this is not always possible. Consequently, mitigation of impacts is an important alternative. While avoidance helps to preserve the physical archaeological record within an area, mitigation could result in the gradual elimination of the physical archaeological record and its conversion into a paper or archival record. Because mitigation of adverse impacts to a cultural resource must be specific to that resource—designating the values that render it eligible for the NRHP or important to a particular culture group, such as a Native American tribe—as well as to the nature of the impact, appropriate mitigation cannot be defined at this programmatic level of analysis. Should specific adverse impacts to individual cultural resources be identified during the site-specific NEPA and project-specific Section 106 processes, the BLM would develop and implement a mitigation plan in consultation with the Utah State Historic Preservation Office (SHPO) and other interested parties (e.g., Native American tribes), as appropriate.

4.3.2.6. Unavoidable Adverse Impacts

Because the location and nature of all cultural resources in the area under consideration are unknown, it is not possible to determine if there would be unavoidable adverse impacts to cultural resources and/or what they might be at this time. There is some potential for unavoidable adverse impacts with nearly any proposed management decision. However, following the applicable law and policy would provide opportunities for prevention and/or mitigation of many of these impacts.

4.3.2.7. Short-term Use Versus Long-term Productivity

Because the location and nature of all cultural resources in the area under consideration are unknown, it is not possible to determine if there would be changes in short-term uses or long-term productivity of these resources. However, it should be noted that adherence to applicable law and policy would prevent any loss in the long-term productivity of this resource due to previously described short-term use.

4.3.2.8. Irreversible and Irretrievable Impacts

Because the location and nature of all cultural resources in the area under consideration are unknown, it is not possible to determine if there would be irreversible and/or irretrievable impacts to cultural resources and/or what they might be. Most of the proposed management decisions include the potential for impact. However, following applicable law and policy would prevent and/or mitigate many potential impacts.

4.3.3. FIRE MANAGEMENT

Impacts to the fire management program within the Monticello PA would result from both fire and non-fire management decisions. The impacts would vary by alternative, depending on specific program prescriptions that could either directly or indirectly reduce or contribute to fuels loading or increase or decrease the risks of wildland fire.

4.3.3.1. IMPACTS COMMON TO ALL ALTERNATIVES

The management decisions common to all alternatives that impact fire management would consist of 1) establishing fire management priorities; 2) establishing fire suppression objectives; 3) using wildland fire for improving natural resources or accomplishing specific resource objectives; 4) reducing fuel loading; 5) preventing and mitigating wildland fire within the Monticello PA, and applying emergency stabilization and rehabilitation treatments to areas to protect human property and/or important natural and cultural resources.

The impacts of these decisions would directly and beneficially impact human safety and in the short-term and long-term by making the protection of human health, safety, and property (in wildland urban interfaces [WUIs] and at-risk communities) the highest priority of fire management, fire suppression, fire use for resource benefit, emergency stabilization and rehabilitation, and wildland fire prevention. Common fire management decisions would have long-term, direct and indirect, beneficial impacts on ecosystem health and watersheds by setting a high priority on the use of wildland fire (through prescribed burning), fire suppression, and emergency stabilization and rehabilitation to protect, maintain, and enhance native vegetation communities, to protect watersheds from soil erosion, and to protect land and aquatic habitat of listed and non-listed species.

Fuels treatments for the Monticello PA (proposed on 5,000 to 10,000 acres/year) would have additional long-term, beneficial impacts on vegetation communities by improving historic fire regimes to encourage native vegetation establishment and to control non-native, invasive species that could otherwise displace native vegetation. The fire management decisions common to all alternatives would directly protect known, sensitive, and valuable cultural resources and cultural landscapes by setting priorities to prevent damage to these irreplaceable resources from wildland fire.

Under all alternatives, lands and realty management actions for filming would limit the use and reduce the risks of wildland fire from pyrotechnics and explosives, as well as limit the numbers of people and vehicles in sensitive areas, thus the adverse impacts to fire management would be minor.

Minerals management decisions under all alternatives would potentially impact fire management through the creation of additional WUI areas, which could increase the likelihood for fire suppression to protect minerals infrastructure and improvements in the event of wildland fire. The potential for wildland fire in minerals development areas would be low because of fire-related mitigation applied during minerals development. Thus, the impacts would be negligible.

The proposed recreation management decisions would have minor impacts on fire management within the Monticello PA. The impacts would be minor because developing and maintaining campgrounds, trails, routes, and other recreation infrastructure would increase the number of

WUI areas, which would require increased fire suppression and would reduce the number of acres available for wildland fire use. There would be indirect, potentially adverse impacts on fire management from the increased risks of human-caused wildland fire from increased recreational use (e.g., campfires, OHV use). However, these indirect impacts would be minor because of recreational restrictions on the use of fire in recreational areas (see Table 2.1 Recreation).

4.3.3.2. ALTERNATIVES IMPACTS

Impacts to fire condition may be indirect, negligible, or non-existent, depending on the resource management decision. Specifically, resource program decisions for health and safety, livestock grazing, paleontology, soils and water resources, special status species, are expected to have little or no direct or indirect impact on fire condition within the Monticello PA. Decisions for these resources do not preclude surface disturbing activities. As such, they will not be considered further in this analysis. All other alternative decisions with the potential to impact cultural resources either beneficially or adversely are discussed below.

4.3.3.2.1. IMPACTS OF AIR QUALITY DECISIONS ON FIRE MANAGEMENT

Under all alternatives, prescribed burns would be consistent with the Utah Division of Environmental Quality (UDEQ) permitting process and timed in conjunction with meteorological conditions so as to minimize smoke impacts. In addition, the BLM would comply with the current Smoke Management Memorandum of Agreement (MOU) between BLM, USFS, and UDAQ. The MOU, in accordance with UAC regulation R301-204, requires reporting size, date of burn, fuel type, and estimated air emissions from each prescribed burn. Additional restrictions on prescribed burns and Wildland Fire Use (WFU) treatments during certain conditions or near Visual Resource Management, Class I areas would also apply. All of these restrictions could impact the size and/or timing of fire management activities such as managed wildland fire and prescribed burns. However, these limitations would not substantially reduce the effectiveness of long-term fire management.

4.3.3.2.2. IMPACTS OF CULTURAL RESOURCE DECISIONS ON FIRE MANAGEMENT

4.3.3.2.2.1. Alternative A

Under Alternative A, Grand Gulch National Historic District, consisting of 37,433 acres, would be subject to conditional fire suppression with motorized suppression methods used only if necessary to protect life or property. Comb Ridge CSMA (38,012 acres), Tank Bench CSMA (2,646 acres), Beef Basin CSMA (20,302 acres), and McLoyd Canyon-Moon House CSMA (1,607 acres) would be available for fuels treatment and fuels management activities outlined in the Moab Fire District Fire Management Plan (BLM 2005k). To reduce hazards and to restore ecosystems, authorized fuels management actions include wildland fire use, prescribed burns, and mechanical, manual, chemical, biological, and seeding treatments. Fuels treatments are focused on the desired wildland fire condition (DWFC) of restoring historic fire regimes to ecosystems when feasible, so that future wildland fire use actions can be more easily implemented. It should be noted that the Moab Fire District's revised FMP would confine virtually all (approximately 99.5%) of the proposed fire management-related vegetation treatments to the pinyon-juniper vegetation type (BLM 2005k). Accordingly, this alternative would contribute to returning approximately 38,888 acres of pinyon-juniper in these CSMAs to

DWFC, but would prevent the opportunity for fire management-associated vegetation treatments on approximately 26,902 acres of pinyon-juniper.

4.3.3.2.2.2. Alternative B

Under Alternative B, the Comb Ridge CSMA (38,012 acres) and the Tank Bench CSMA (2,646 acres) are available for non-surface-disturbing vegetation treatments, and the Beef Basin CSMA (20,302 acres) is available for any type of vegetation treatment. The Grand Gulch National Historic District (37,433 acres) is excluded from vegetation treatments, except non-motorized weed control with no surface disturbance, and the McLoyd Canyon-Moon House CSMA (1,607 acres) has no restrictions impacting decisions on fire management. Accordingly, a full array of fuels treatments would be available to contribute to returning approximately 16,546 acres of pinyon-juniper to DWFC. This represents far less acreage available for all fire management options than Alternative A. Additionally it would restrict surface-disturbing fire management treatments on approximately 49,244 acres of pinyon-juniper. A total of 20,934 acres of pinyon-juniper in these CSMAs would be available for non-surface-disturbing fire management. This would provide some assistance in moving these vegetation types towards DWFC; however, it would not be as effective as the management actions under Alternative A, which allow both surface and non-surface-disturbing treatments in these areas. Accordingly, the long-term impacts of wildland fires would be higher in these areas under this alternative than under Alternative A.

4.3.3.2.2.3. Alternative C

Under Alternative C, the Beef Basin CSMA (20,302 acres) and the McLoyd Canyon-Moon House CSMA (1,607 acres) would be managed the same as under Alternative B. The Tank Bench CSMA (2,646 acres) would be managed the same as under Alternative B except vegetation treatments and surface-disturbing land treatments consistent with DRMP/DEIS management objectives would be allowed in Outlaw Canyon and South Cottonwood Wash areas. Also under Alternative C, the Comb Ridge CSMA (38,012 acres) would be available for vegetation treatments and surface-disturbing land treatments that are consistent with management plan objectives. In the Grand Gulch National Historic District (37,433 acres), non-motorized vegetation treatments, including aerial seeding, hand reseeding, planting seedlings, and control of invasive non-native species are allowed as long as they do not impact cultural resources and are consistent with the IMP. This would represent the same types and amounts of vegetation for all fire management options as described under Alternative A. It would also allow an additional 26,902 acres of pinyon-juniper to be available for treatment with the non-motorized treatments described above. Based on the allowable treatment (approximately 60% more of the area available for treatment than under Alternative A), this alternative would likely allow more opportunities than Alternative A to move these vegetation types to DWFC, with subsequent reductions in long-term fire impacts.

4.3.3.2.2.4. Alternative D

Under Alternative D, the Tank Bench (2,646 acres) would not be managed as a CSMA, it would be managed the same as adjacent areas with no restrictions on fire management. Comb Ridge (38,012 acres) and Beef Basin (20,302 acres) would not be managed as CSMAs, but otherwise they would be managed the same as under Alternative C. The McLoyd Canyon-Moon House CSMA (1,607 acres) and the Grand Gulch National Historic District (37,433 acres) would be

managed the same as under Alternative C. This alternative would have virtually identical impacts on DWFC and long-term fire impacts as Alternative C.

4.3.3.2.2.5. Alternative E

Under Alternative E, the impacts of cultural resources decisions on fire management would be same as under Alternative B, except that the Beef Basin CSMA (20,302 acres) would not be open to vegetation treatments. This would slightly increase the risk of long-term impacts of fire in the area due to increased fuel loading, relative to Alternative B.

4.3.3.2.3. Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Fire Management

Lands with wilderness characteristics would be managed to maintain these characteristics only under Alternative E. Under Alternative E, a total of 582,360 acres would be managed to maintain their wilderness characteristics. These areas would be closed to OHV use, which would reduce the risk of human-caused fire starts and virtually eliminate the risk of fire starts from motorized vehicles. Lands with wilderness characteristics would also be closed to mineral leasing and disposals and would prohibit new road construction or ROWs, which would also reduce the risk of human-caused fire starts associated with these activities and associated workers. However, lands with wilderness characteristics would also be closed to woodland harvest, which would potentially increase fuel loading unless other vegetation treatments were used in its place. Fire and fuels treatment response activities would need to be compatible with the goals and objectives of protecting non-WSA lands with wilderness characteristics. This could restrict the method used, equipment type used, and fire operations within the non-WSA lands with wilderness characteristics.

4.3.3.2.4. Impacts of Special Designations Decisions on Fire Management

Special designations affect fire management, and consequently DWFC and long-term fire risk, by restricting vegetation treatments or restricting woodland harvest. Restricting vegetation treatments prevents managers from decreasing fuel loading and moving fire return interval and vegetation composition to levels closer to historic conditions. Restricting woodland harvest reduces the amount of fuels removed from an area, and thus increases fuel loading in the conifer and pinyon-juniper vegetation types where harvest most commonly occurs. Woodland harvest acts as a *de facto* vegetation treatment; therefore, its prohibition increases the risk of large or catastrophic fires if other treatments are not utilized in its place. Special designations vary across alternatives based on size of area and type of restriction. This analysis will determine the acres of these types of restrictions due to special designations and the impacts of those acres on fire management goals and long-term fire risk. It should be noted that some of the proposed special designated areas include prohibitions on OHV use. The overall impacts of OHV restrictions are discussed in Section 4.3.3.3.7, Recreation Decisions.

Special designations in the Monticello PA include ACECs, WSRs, and WSAs. Proposed management prescriptions for WSRs have negligible impact on fire management as they do not restrict vegetation management or woodland harvest more than other management decisions. Additionally, fewer than 10 acres of fire management treatments are planned within riparian vegetation types in the Monticello PA under the Moab FMP; therefore, proposed WSRs are

unlikely to affect or be affected by potential fire management actions. Accordingly, WSR impacts on fire management are not analyzed further.

Under all alternatives, a total of 386,027 acres are WSAs. These acreages would be closed to woodland harvest and surface-disturbing vegetation treatments. Accordingly, this acreage (approximately 22% of the planning area) would have limited means to proactively reduce fuel loading or to move vegetation types to DWFC. However, over the long-term, some vegetation treatments may be allowed if they are non-impairing. These would include reseeding with native species after a fire or pruning. However, stand conversion activities such as mechanical removal of pinyon-juniper encroachment or Douglas fir encroachment on aspen would not be permitted (H-8550-1 - Interim Management Policy For Lands Under Wilderness Review). Fire suppression would be permitted with the understanding that it be conducted with a minimum amount of mechanical and/or motorized resources.

ACECs have various management decisions by alternative for vegetation treatments. All ACECs are considered under Alternatives B and E, no ACECs are considered under Alternative D. See Section 4.3.14, Special Designations, for a list of proposed ACECs by alternative.

4.3.3.2.4.1. Alternative A

Under Alternative A, a total of 488,616 acres of land would be designated as ACECs. These ACECs are shown in Table 4.88. Restrictions on vegetation treatments and woodland harvest within these ACECs could impact fire management. Under this alternative, a total of 385,857 acres of land within these ACECs would not allow surface-disturbing vegetation treatments. This represents approximately 22% of the public lands in the Monticello FO that would have limited means to decrease fuel loading or to move vegetation types to DWFC. Additionally, a total of 114,723 acres (approximately 6% of the FO) would be restricted from either private or commercial woodland harvest. Although woodland harvest is not specifically targeted as a fire management activity, it does provide opportunities to thin dead wood from pinyon-juniper and conifer vegetation types. Thus, woodland harvest acts as a *de facto* vegetation treatment, and its prohibition increases the risk of large or catastrophic fires if other treatments are not utilized in its place.

4.3.3.2.4.2. Alternative B

Alternative B would carry forward the existing ACECs from Alternative A; however, some of them would be of different size or have different restrictions. A total of 521,141 acres of lands would be designated as ACECs under this alternative. Of these lands, a total of 166,611 acres (9% of the planning area) would be restricted from surface-disturbing vegetation treatments. This would provide slightly less opportunities to decrease fuel loading and move vegetation towards DWFC than Alternative A. This alternative would also prohibit private or commercial woodland harvest on 521,171 acres (approximately 29% of the planning area) of ACEC lands. This would result in much more acreage of pinyon-juniper and conifer vegetation that is likely to experience fuel loading or that would require active vegetation treatments to reduce fuel loading than under Alternative A.

Access to designated campsites was correlated with reduced human-caused fire ignitions in the Moab Fire District from 1999 to the present time in spite of increased levels of visitation (BLM 2005k). Under this alternative, a total of 315,371 acres would include restrictions on dispersed

camping, which would continue to slightly lower the risk of human-caused fire ignitions in the Cedar Mesa, Indian Creek, and Shay Canyon ACECs.

4.3.3.2.4.3. Alternative C

Alternative C would have seven designated ACECs. A total of 76,764 acres of lands would be designed as ACECs under this alternative. However, because of ACEC decisions, including management restrictions placed on areas that would no longer be designated as ACECs, a total of 105,532 acres (6% of the planning area) would be restricted from surface-disturbing vegetation treatments. This would result in slightly increased opportunities to decrease fuel loading and move vegetation towards DWFC as under Alternative B, and substantially more opportunities than Alternative A. This alternative would prohibit private or commercial woodland harvest on 106,502 acres (approximately 6% of the planning area) of existing or proposed ACEC lands. This would result in virtually identical impacts to those described under Alternative A; however, it would result in approximately five times more total acres where pinyon-juniper and conifer vegetation would be open for fuel reduction resulting from woodland harvest than Alternative B. Overall, Special Designation decisions under Alternative C would provide more opportunities for fire management than Alternative A or B. Accordingly, Alternative C would likely result in less long-term fire risk to these areas than these alternatives.

Under this alternative, a total of 119 acres would include restrictions on dispersed camping, which would continue to slightly lower the risk of human-caused fire ignitions in the Shay Canyon ACEC.

4.3.3.2.4.4. Alternative D

Alternative D would designate no ACECs. However, it does impose restrictions on ACEC areas proposed under the other alternatives. This includes restrictions on surface-disturbing vegetation treatments on a total of 6,600 acres. This relatively low acreage with restrictions would result in substantially more opportunities to decrease fuel loading and move vegetation towards DWFC than under Alternative A. This alternative would also prohibit private or commercial woodland harvest on 82,594 acres (approximately 5% of the planning area) of ACEC lands. This would result in approximately five times more total acres where pinyon-juniper and conifer vegetation types would be open for fuel reduction resulting from woodland harvest. Overall, Special Designation decisions under Alternative D would provide more opportunities for fire management than Alternatives A, B, or C. Accordingly, Alternative D would likely result in less long-term fire risk to these areas than Alternatives A or B.

4.3.3.2.4.5. Alternative E

In general, Alternative E would have the same impacts as those under Alternative B. This would slightly increase the risk of wildfire in this area.

4.3.3.3. Summary of Impacts

4.3.3.3.1. Air Quality Decisions

Under all alternatives, prescribed burns would be consistent with the UDEQ permitting process and timed in conjunction with meteorological conditions so as to minimize smoke impacts. In addition, the BLM would comply with the current Smoke Management MOU between BLM,

USFS, and UDAQ. This may restrict the use of prescribed fire in terms of timing and size of treatments.

4.3.3.3.2. Cultural Resource Decisions

The majority of cultural resource decisions affecting fire management are associated with restrictions in CSMAs. As stated previously, restrictions on vegetation treatments and woodland harvest can lead to fuel loading, particularly in pinyon-juniper and conifer vegetation types, thereby resulting in increased risk of large catastrophic fires. Table 4.21 below summarizes these proposed restrictions by alternative.

Table 4.21. Acreage of CSMA Restrictions on Fire Management and Fuels Treatment (acres)

Restriction	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
No Surface-disturbing Vegetation Treatments	37,363	83,935	37,363	0	104,237
No Woodland Harvest	37,363	105,033	62,717	60,068	105,033

As shown in this table, Alternative E restricts fire management on the most CSMA lands, followed by Alternatives B, C, A, and D, respectively.

4.3.3.3.3. Fire Management Decisions

Under all alternatives of the Monticello FO RMP, 5,000 to 10,000 acres would be treated annually across the planning area depending on budgetary and time constraints. The majority of these treatments would likely be concentrated in the pinyon-juniper vegetation type, including historical sagebrush/grassland that has been encroached upon by pinyon-juniper (BLM 2005k). Approximately 92% of this vegetation type is in fire regime/condition class (FRCC) 3, which indicates that it suffers high departure (>66% variation) from historical fire return interval and/or vegetation condition/fuel loading. The main reasons the majority of the pinyon-juniper in the planning area falls within this FRCC are 1) loss of native understory of pinyon-juniper stands; 2) cheatgrass invasion of disturbed pinyon-juniper stands; and 3) fuel loading in uncharacteristically thick pinyon-juniper stands (BLM 2005k). The Moab Fire District Fire Management Plan has a long-term goal to treat up to approximately 41,000 acres of pinyon-juniper vegetation in the Monticello PA with prescribed fire (14,600 acres) and non-fire treatments (26,400 acres) over the next 10-year period. These treatments would take place in five Fire Management Units (FMUs) throughout the planning area. These treatment acreages are only approximate long-term goals, but are the best available estimates for the purposes of analysis.

If the Moab Fire District is able to successfully implement fuels treatments over a maximum number of desired acres in a given year, a general transition toward improved FRCC and DWFC in the Monticello FO could eventually be realized. Landscape-level fuel treatments require a long-term commitment of resources to implement, monitor, and maintain; implementation can depend on a myriad of factors such as climate, funding, threats or infestation from invasive species, and other variables; and, acreage goals can be altered or transformed by unexpected factors such as catastrophic wildland fire, drought, or changes in habitat for T&E species. In

consideration of these many aspects, improved FRCC and DWFC as well as other management goals and objectives may take generations for actual accomplishments to be realized.

4.3.3.3.4. Lands and Realty Decisions

Under all alternatives, minimum impact criteria for filming would limit the use of pyrotechnics and explosives, as well the numbers of people and vehicles in sensitive areas. This would provide a slight decrease in the risk of inadvertent fire starts from human causes.

4.3.3.3.5. Minerals Decisions

Minerals decisions impacting fire management are largely associated with potential increased risk of human-caused fires because of mineral development. These impacts are best compared by showing relative difference in acreage of lands open for surface-disturbing minerals development for each alternative (Table 4.22).

Table 4.22. Acreage of Planning Area Lands Open and Closed to Surface-disturbing Mineral Development (% of Planning Area)

Development	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Leasable					
Open (Standard or Special Stipulations)	1,238,230 (69%)	1,241,910 (70%)	1,348,973 (76%)	1,383,283 (77%)	758,930 (43%)
Closed (NSO/ Closed)	546,540 (31%)	541,717 (30%)	434,652 (24%)	401,028 (22%)	1,025,378 (57%)
Locatable					
Open	1,652,743 (93%)	1,521,656 (85%)	1,637,688 (92%)	1,737,999 (97%)	1,489,722 (83%)
Withdrawn	132,380 (7%)	263,467 (15%)	147,435 (8%)	47,124 (3%)	295,401 (16%)
Saleable					
Open/Open Special Conditions	1,389,256 (78%)	1,241,904 (70%)	1,348,968 (76%)	1,383,277 (77%)	758,930 (43%)

In general, Alternative E has the least amount of land available for surface-disturbing mineral extraction, followed by Alternatives B, A, C, and D respectively. However, the alternatives are very similar in the amount of area they make available for mineral development. Additionally, it should be noted that the actual amount of development predicted over the life of the plan is relatively low; therefore, mineral development activities would likely have a relatively low impact on fire management and fire risk in comparison to other human activities such as recreational visitation.

4.3.3.3.6. Non-WSA Lands with Wilderness Characteristics Decisions

Lands with wilderness characteristics would be managed to maintain these characteristics only under Alternative E, under which a total of 582,360 acres would be managed. These areas would

be closed to OHV use, mineral leasing, and mineral disposals, which would reduce the risk of human-caused fire starts. However, lands with wilderness characteristics would also be closed to woodland harvest, which would potentially increase fuel loading unless other vegetation treatments were used in its place.

4.3.3.3.7. Recreation Decisions

Recreation decisions impacting fire management include restrictions on woodland harvest, which could increase fuel loading and thus fire risk as stated previously; and restrictions on permitted visitation, campfires, dispersed camping, and OHV use, which slightly decrease the risk of human-caused wildland fire starts. A summary of these restrictions by alternative is provided in Table 4.23 below.

Table 4.23. Recreation Restrictions Impacting Fire Management and Risk (acres)

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Fuels Removal Restrictions					
No Woodland Harvest*	89,271	506,028	129,950	126,456	510,152
Camping Restrictions					
No Campfires	375,734	378,562	0	0	378,562
No Dispersed Camping	385,937	130,294	41,023	10,203	130,294
OHV Use Categories					
Open to Cross-Country Travel	611,310	0	0	0	0
Limited to Existing/Designated Routes	789,170	1,359,417	1,362,142	1,780,807	812,683
Closed	276,430	423,698	418,667	0	970,435

*Acreage overlaps with woodland harvest restrictions in Table 4.21.

Alternatives E and B have the most restrictions on woodland harvest, followed by Alternatives C, D, and A, respectively. Accordingly, recreation decisions under Alternatives B and E would likely have more impacts on fire management and long-term risk of large and/or catastrophic fires than C, D, and A. Conversely, Alternatives B, E, and A restrict campfires and dispersed camping much more than Alternatives C and D. This indicates that these alternatives would have less risk of human-caused wildland fire than Alternatives C and D. Alternative A, in particular, lessens risk due to limitations on dispersed camping on Cedar Mesa.

In terms of travel-related risks of human-caused wildland fire, all of the action alternatives would have much less risk of human-caused fires than Alternative A. This is due to the prohibition on motorized cross-country travel under those alternatives. In terms of the amount of acreage where motorized travel would be limited to existing/designated routes, Alternative D has the most acreage, followed by Alternatives C and B, which have similar acreages, then Alternatives E and A. In terms of areas closed to motorized travel, Alternative E has the greatest acreage, followed

by Alternatives B and C. Alternative A has much less area closed to motorized travel than B or C, and Alternative D has no area closed. In broad terms, Alternatives E, B, and C provide the least amount of travel-related risk to fire management. Alternative D would have some additional risk and Alternative A would have substantially more risk than Alternatives E, B, and C.

4.3.3.3.8. Special Designations Decisions

Overall, designation of proposed ACECs and the subsequent restrictions on these areas would have the greatest impact on fire management activities in the planning area. Table 4.24 below summarizes the restrictions of fire and fuels treatments and woodland harvest in the planning area.

Table 4.24. Acreage of ACEC Restrictions on Fire Management and Fuels Treatment (acres)

Restriction	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
No Surface-disturbing Vegetation Treatments	386,857	166,611	105,532	61,660	187,354
No Woodland Harvest*	114,723	521,171	106,502	82,594	521,171

*Acreage overlaps with woodland harvest restrictions in Table 4.21.

Alternative A restricts the most ACEC area from vegetation treatments, followed by Alternatives E, B, C, and D respectively. Alternatives E and B restrict the most area from woodland harvest, followed by Alternatives A, C, and D. Overall, Alternative A would likely restrict fire management the most, followed by Alternatives E, B, C, and D. Accordingly, Alternative D would likely result in the least amount of fire risk to these areas, followed by Alternatives C, B, E, and A respectively.

4.3.3.4. Mitigation Measures

Management common to all alternatives, described in Chapter 2, would serve to mitigate potential significant adverse impacts to fire management and fire risk. These include fire management treatments and prioritization, and fire suppression activities that would be designed to prevent impacts to people, property, and key ecosystem components.

4.3.3.5. Unavoidable Adverse Impacts

The prohibition of fuels reduction and vegetation treatments in various areas throughout the field office may have unavoidable impacts by increasing the long-term risk of large and/or catastrophic fires. These areas include CSMAs, ACECs, and SRMAs, as described in Chapter 2 and Sections 4.3.3.2.2, 4.3.3.2.3, and 4.3.3.2.6 respectively. If such fires occur, this would have an avoidable adverse impact on the resources, time and money needed to suppress such fires, as well as the potential subsequent loss of property and natural resource values.

4.3.3.6. Short-term Use versus Long-term Productivity

The unavoidable impacts described above would potentially impact the long-term efficiency of fire management in the planning area. However, if non-surface-disturbing vegetation treatments

and fire suppression are effectively implemented, they would not result in a long-term loss of key ecosystem components or the long-term productivity of natural resources in the planning area. There would be no irreversible impacts from fire management.

4.3.3.7. IRREVERSIBLE AND IRRETRIEVABLE IMPACTS

There would be no irreversible or irretrievable impacts to fire management (i.e., fuels treatments, fire suppression, emergency stabilization, prevention and mitigation).

4.3.4. HEALTH AND SAFETY

The sources, handling, and disposal of hazardous materials are subject to the federal and state laws discussed in Section 3.5, Health and Safety. These laws and regulations are designed to safeguard human health and safety and to protect the natural environment, and thus, minimize the short-term and long-term risks associated with the use, storage, and disposal of hazardous materials. Currently, the Monticello PA implements the Compliance Assessment—Safety, Health, and Environment (CASHE) and Environmental Management Systems (EMS) programs to manage hazardous materials.

Management decisions regarding the following resources and uses would have negligible impacts on the use, storage, and disposal of hazardous materials and so are not further analyzed in this section:

- Air Quality
- Cultural and Paleontological Resources
- Fire Management
- Lands and Realty
- Livestock Grazing
- Non-WSA Lands with Wilderness Characteristics
- Recreation and Travel
- Vegetation, including Woodlands, Riparian, Soils, and Water
- Wildlife and Special-Status Species
- Special Designations
- Visual Resources

The above resources would have negligible impacts because maintaining air pollutant concentrations below air quality standard threshold levels; protecting cultural resources and fossils; reducing fuel loads and treating vegetation to reduce the risks of wildland fire; acquiring, exchanging, and/or selling federal lands, and permitting ROWs; and protecting the wilderness values within lands with non-WSA wilderness characteristics would not affect the handling, storage, or disposal of hazardous materials nor affect the remediation of hazardous materials site. Likewise, managing recreational resources and recreational opportunities within SRMAs and the ERMA; maintaining travel access throughout the Monticello PA; providing opportunities for woodland harvesting; protecting riparian areas, sensitive soils and watersheds; protecting wildlife and federally listed species; managing WSAs, WSRs, and ACECs to protect sensitive and valued resources; and protecting scenic quality would also not affect the ability of the

Monticello FO to control or dispose of hazardous materials, or affect FO cleanup of hazardous materials spills, and hazardous waste sites.

4.3.4.1. IMPACTS COMMON TO ALL ALTERNATIVES

Under all of the alternatives, BLM management practices for dealing with hazardous substances would protect environmental resources because the authorized uses of materials that could potentially affect human health and safety would comply with federal and state requirements to reduce or eliminate any potential impacts. State, local agency, and BLM procedures would address accidental spills and releases as well as unauthorized uses. These procedures would minimize the risks of public exposure to and environmental impacts from hazardous materials.

The Monticello PA RFD predictions for oil and gas development indicate that the average number of wells drilled within the life of the RMP would range from 54 wells (less than 4 wells per year) under Alternative E to 75 wells (5 wells per year) under Alternative D. The surface disturbance resulting from constructing a well pad, road, and associated pipelines is estimated to be approximately 9.6 acres. Thus, the total projected surface disturbance for oil and gas drilling would range from 516 acres under Alternative E to 720 acres under Alternative D. Given the small number of predicted wells that would be drilled within the life of the RMP, the health and safety risks due to hazardous materials under all alternatives would be negligible. However, any mineral exploration and development activities would increase the risks in the PA, and impacts from spills or releases would be adverse and long-term. The following are oil- and gas-related development activities that would pose risks from hazardous materials under all the alternatives.

<u>Pipelines</u>

Installing pipelines and support services for them (e.g., compressor stations) would be necessary for oil and gas development. The hazardous materials associated with pipelines include diesel fuel leaks or spills from compressor stations, and benzene and hexane leaks from natural gas condensation. Leaks or ruptures in the pipelines could also pose safety and environmental risks.

The operators installing and operating oil and gas pipelines would be responsible for understanding and complying with the applicable laws and regulations governing hazardous materials. The Monticello FO would be responsible for inspecting and monitoring these operations to ensure operator compliance, which would reduce the risks of pipeline-related leaks and spills.

<u>Power Lines</u>

It may be necessary to install power lines for oil and gas development. The operators that install and maintain these power lines would be responsible for understanding and complying with the applicable laws and regulations to prevent the release of hazardous materials related to power lines and transformers (e.g., PCB leaks from electrical transformers).

<u>Transportation</u>

Mineral-development activities would increase the risks associated with transporting hazardous materials. Transportation (e.g., trucking) companies would be responsible for understanding and abiding by all applicable transportation laws and regulations, which would reduce the risks of spills or releases.

Gas Flow-Line Leakage or Ruptures

The potential would exist for natural gas flow-line leakage or ruptures during extraction and processing (see Section 3.5.2.1, Health and Safety). The U.S. Department of Transportation (DOT) data indicate that an average of one rupture annually should be expected for every 5,000 miles of pipeline, with more than 50% of ruptures resulting from heavy equipment striking the pipeline. Such ruptures could potentially cause a fire or explosion if a spark or open flame ignited the escaping natural gas. Compliance with the applicable DOT regulations discussed in Section 3.5.2.1 would reduce these risks.

Well Fires and Explosions

Even though these risks are low, oil and gas companies typically have a procedure within their emergency contingency plan to call a service company specializing in controlling and extinguishing well fires in the unlikely event of one.

Human-Caused Fires

Well-pad fires and explosions are a potential health and safety hazard, but implementing the Utah Division of Oil, Gas, and Mining (UDOGM) measures for surface fires would reduce the risks of human-caused wildland fires resulting from unsafe well practices. Well sites would be kept free of vegetation and trash to minimize fire fuel in the vicinity, thus reducing the risks to operators from this potential hazard.

Geologic Hazards

The potential risks associated with oil and gas development include geologic hazards. These hazards include hydrogen sulfide releases and abnormally high gas pressures that could result in fires and explosions. Following is a description of these risks and the standard measures required to minimize them.

- Hydrogen Sulfide—hydrogen sulfide releases (a byproduct of drilling, extraction, and processing) would be monitored by special detectors located near drill holes. If hydrogen sulfide gas was detected, then the well operator could implement a hydrogen sulfide emergency contingency plan.
- Abnormal High Pressure—High pressures could be encountered when drilling. Blowout prevention equipment would be used to control any abnormally high pressures safely. Onshore Oil and Gas Order No. 2 established the minimum equipment necessary to drill safely under high-pressure conditions, and all wells on federal mineral leases would be required to comply with this order. Wells drilled on private and state leases would be subject to similar requirements from the UDOGM. Pressure equipment would be site-specifically prescribed during the application for permit to drill (APD) permitting process, and operators would be required to maintain the equipment. The Monticello FO and the UDOGM would conduct inspections during drilling to verify compliance with these requirements, which would reduce the health and safety risks from this geologic hazard.

Abandoned Mine Land (AML)

In conformance with the BLM's long-term strategies and national policies, the Monticello FO recognizes the need to identify and address physical safety and environmental hazards at all AML sites on public lands. To accomplish this long-term goal, criteria from the national policies

would be established under all alternatives to assist in determining priorities for site mitigation and reclamation (see Table 2.1 Summary Table of Alternatives-Health and Safety, for AML program priorities). Under all alternatives, Health and Safety management decisions would prioritize all known AML sites for remediation and closure. The prioritized sites would be remediated, based on the need to protect public health and safety and watersheds, and on funds contributed by other agencies collaborating in site remediation.

Addressing the physical safety concerns and environmental hazards of AML sites would likely have long-term beneficial impacts on health and safety by reducing the risks to the public and improving the quality of natural resources. Remediation of sites would likely improve water and soil quality, therefore improving vegetation and wildlife habitat in the areas adversely impacted by mining operations. With several agencies working collaboratively to address the safety and environmental impacts, remediation would likely have a beneficial impact on BLM management decisions because the reclaimed lands would be considered in future planning for other resource uses, including consideration as potential recreation areas.

4.3.4.2. IMPACTS FROM ALTERNATIVES

Due to the small number of new oil and gas wells predicted within the LOP, and the small difference in predicted drilled wells among the proposed alternatives (54 to 75 wells), the impacts across the range of alternatives would not be broad. The greater the acreage open to oil and gas development, the more oil and gas infrastructure (e.g., pipelines, power lines, transportation routes) would be necessary; therefore, it was assumed that the alternative with more predicted development would have a slightly higher risk from hazardous materials than the alternative with less. For example, the potential health and safety risks and adverse impacts would be slightly higher with Alternative C than Alternative D because more acres would be open to development and thus would likely require more oil and gas infrastructure. The types of hazardous materials possibly resulting from oil and gas development include sodium hydroxide, diesel fuel, methanol, hydrochloric acid, acetic acid, zinc and copper compounds, and propane (see Section 3.5.2.1, Health and Safety, for a list of typical hazardous materials and their uses in oil and gas development).

4.3.4.2.1. ALTERNATIVE A

Under Alternative A, approximately 1,238,230 acres (69% of the PA) would be open to oil and gas exploration and development with standard and special (timing and CSU) lease stipulations. Oil and gas development under this alternative would potentially create health and safety risks from the use, generation, storage, transportation, and/or disposal of hazardous materials used in minerals exploration and development.

4.3.4.2.2. ALTERNATIVE B

Under Alternative B, approximately 1,241,910 acres of BLM-administered lands would be open for oil and gas development with standard and special lease stipulations (70% of the PA). This represents a 1% increase in the total amount of acres available for leasing compared to Alternative A and would present a negligible increase in the potential use, generation, storage, transportation, and/or disposal of hazardous materials.

4.3.4.2.3. ALTERNATIVE C

Under Alternative C, approximately 1,348,973 acres of BLM-administered lands would be open for oil and gas development with standard and special lease stipulations (76% of the PA), a 7% increase in the total area available when compared to Alternative A. Thus, Alternative C would minimally increase the use, generation, storage, transportation, and/or disposal of hazardous materials, with a minimal increase in the potential health and safety risks of these substances when compared to Alternative A.

4.3.4.2.4. ALTERNATIVE D

Under Alternative D, approximately 1,383,283 acres of BLM-administered lands would be open for oil and gas development with standard and special lease stipulations (78% of the PA), a 9% increase in the total amount of acres available under Alternative A. The impacts would be similar to Alternative C because of the relative sizes of the areas.

4.3.4.2.5. ALTERNATIVE E

Under Alternative E, approximately 758,928 acres of BLM-administered lands would be open for oil and gas development with standard and special lease stipulations (43% of the PA). This represents a 26% decrease in the total amount of acres available under Alternative A. Thus, Alternative E would moderately decrease the potential risks to human health and safety from oil and gas-related use, generation, storage, transportation, and/or disposal of hazardous materials.

4.3.4.3. SUMMARY OF IMPACTS

Mineral management decisions would increase the risk of impacts due to hazardous materials. Due to the small amount of predicted wells throughout the life of the RMP, however, the difference in impacts among Alternatives A, B, C, and D would be negligible. Alternative E would moderately reduce risks to health and safety because the area available for mineral leasing under standard and special leasing regulations would be substantially less.

4.3.4.4. MITIGATION MEASURES

Using signs to identify the location of underground pipelines would help reduce the potential for pipeline ruptures by heavy equipment. No additional mitigation would be required to reduce impacts from hazardous materials because it is assumed that users and producers would comply with existing federal and state laws and regulations pertaining to the use, generation, storage, transportation, and disposal of hazardous materials. Compliance with existing regulations would reduce the health and safety risks to a minor or low level.

4.3.4.5. UNAVOIDABLE ADVERSE IMPACTS

The risks from hazardous materials would increase during mineral exploration and development, causing potentially unavoidable adverse impacts including the possible release of hydrogen sulfide (a byproduct of drilling, extracting, and processing), abnormally high pressure during drilling, seismic activity, gas flow-line leakage or rupture, well fires, and explosions. Risks and impacts would increase due to the disruption of mineral operations if these events occurred and the subsequent release of hazardous materials into the environment. It should be noted that the natural release of hydrogen sulfide is not covered under the Comprehensive Environmental

Response Compensation and Liability Act (CERCLA), but it could be a potential hazard according to the Occupational Safety and Health Administration (OSHA). All gases resulting from oil and gas exploration and production streams are CERCLA exempt (EPA 2002).

4.3.4.6. SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

Short-term mineral development or other resource use in the PA would not result in impacts to long-term productivity or ability to control and manage hazardous materials.

4.3.4.7. IRREVERSIBLE AND IRRETRIEVABLE IMPACTS

There are no irreversible or irretrievable impacts to the control or management of hazardous materials stemming from any of the alternatives.

4.3.5. LANDS AND REALTY

Lands and Realty is a resource use rather than an environmental component. Consequently impacts to lands and realty are determined by the emphasis of other resource programs. The discussion of the effects on lands and realty in each alternative will be limited to the effects on permitted or authorized uses and land tenure adjustments (LTAs).

Impacts to the lands and realty program stem from those resource decisions that limit or hinder permitting rights-of-way (ROWs) or other land use authorizations, or affect the BLM's ability to acquire and dispose of land or make other LTAs. Restrictions to protect wildlife, vegetation, recreation, riparian areas, soils/watersheds, visual resources, special status species, and cultural resources programs can collectively impact the lands and realty program by limiting surface disturbing activities and allowable land use authorizations. As such, potential impacts from these program decisions will be analyzed in this chapter.

ROWs are issued for the placement of roads, powerlines, pipelines, communications sites, and wind and solar energy sites on public lands. Within the RMP, such decisions primarily result from minerals (access routes, pipelines, etc), special designations (WSAs are exclusion areas for ROWs), wilderness characteristics (could be exclusion areas for ROWs), and lands and realty itself (corridors for energy and access, filming authorizations).

The specific program management decisions regarding the following resources and resource uses would have no discernable impacts (short-term and/or long-term, as well as direct and/or indirect) on lands and realty regardless of the alternative chosen: air quality; fire management; hazardous materials management; livestock grazing; paleontological resources; and woodlands. Given the negligible impact of these resource program decisions on lands and realty, they will not be analyzed further in this chapter.

4.3.5.1. IMPACTS COMMON TO ALL ALTERNATIVES

All Wilderness Study Areas (386,027 acres), the Grand Gulch Special Emphasis area of the Cedar Mesa ACEC (49,130 acres), portions of Dark Canyon (61,735 acres), and developed recreation sites (250 acres) would be managed as ROW exclusion areas under all alternatives. Areas closed to oil and gas leasing would also be ROW exclusion areas. NSO areas would be avoidance areas for ROWs.

The impacts of these exclusion/avoidance areas include restricting the placement of ROWs and facilities, limiting future access, delaying or increasing the cost of energy supplies, and creating communications dead zones or delaying the availability of communications services. Limitations on the placement of ROWs could also result in ROWs being located in less desirable or less economically feasible locations. All of these would add to the costs of constructing and time to process ROWs.

Lands and realty program decisions would manage actions proposed for public lands in accordance with standard BLM land policies as related to Recreation and Public Purposes Act leases and other LTAs. ROWs and LTAs would continue to be granted under all of the management alternatives. The granting of ROWs would accommodate the desired placement of facilities, enhance access to facilities and all lands within the Monticello PA, and promote efficient energy supply/transmission and communications. Granting ROWs would also help to minimize the cost of energy and communications developments for the reasons discussed above, and promote trails and recreational use from the additional opportunities created along ROW access routes.

LTAs (disposals, access, easements, transportation and utility corridors, withdrawals, acquisitions) would help to facilitate access within the Monticello PA and adjoining properties, improve the BLM's management ability, reduce conflicts with adjoining landowners and surrounding communities, and accommodate surrounding communities' needs.

Impacts common to all alternatives would occur due to VRM class designation decisions, cultural resource management decisions, and special status species management decisions. All ROW grants would comply with restrictions for cultural resources and special status species and the presence of protected resources. The impact could increase the cost and time required for processing of applications, and could delay or alter the route of proposed ROWs.

Also under all alternatives, wind and solar energy development would be permissible within the Monticello PA. Authorizations for wind and energy uses would incorporate the best management practices contained in the Final Wind Energy Programmatic EIS (BLM 2005f: 2-10 to 2-24) and would be stipulated in ROW grants. Implementation of these measures would provide for the use of Monticello PA lands for alternative energy and communications uses, but utilizing the BMPs could add to the cost to site and construct facilities.

4.3.5.2. Impacts Common to All Action Alternatives

Several lands and realty decisions would have impacts common to all of the action alternatives, (all alternatives other than Alternative A). The Monticello FO would work cooperatively with the State of Utah and with private landowners to identify opportunities for LTAs using the criteria established for disposal and acquisition of lands. LTAs would facilitate BLM efforts to meet management goals and objectives, as set forth in this RMP. The application of minimum-impact filming criteria (Appendix P) would streamline the permit application process and encourage filming companies to use previously approved locations.

A West Wide Energy Corridor (WWEC) EIS for Utility Corridors in 11 Western states, including Utah, is being developed by the Washington Office of the BLM in accordance with the Energy Policy Act of 2005. Under all alternatives, these corridors and all existing utility corridors would be available for utility and other types of ROWs, which could help to minimize

the cost of energy and communications developments and encourage development of energy resources.

Under all alternatives, filming permits would be issued within the Monticello PA on a case-by-case basis. Application of the minimum impact criteria for filming permits would make the filming process more efficient by providing stipulations for mitigating filming impacts, and encourage the filming industry to use already established sites or conduct operations in areas that meet the minimal impact criteria.

Under all action alternatives, a total of 6,440 acres of land has been identified for disposal (see Appendix C). These lands meet the BLM requirements for disposal and are consistent with the LTA policies of the agency.

A summary of the acreages for avoidance, exclusion, withdrawal, and restrictions are listed in Table 4.25, and the impacts are discussed below. Generally, the impacts to lands and realty under each alternative are similar, but vary in the sizes of the affected areas within the Monticello PA.

Table 4.25. Acreage of Avoidance, Exclusion, and Recommended for Withdrawal from Mineral Entry (acres)

Restriction	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Lands Excluded from new ROWs (consistent with Closed)	385,316	416,612	395,329	386,853	974,463
Avoidance Areas for ROWs (consistent with NSO)	161,224	125,105	39,323	14,175	53,915
Lands Available for ROWs with Standard Terms and Conditions	578,604	365,170	629,472	962,283	213,290
Lands Available for ROWs with CSU/TL	659,626	876,739	719,501	421,000	545,641
Lands Recommended for Withdrawal from Mineral Entry**	110,066	257,467	102,258	45,734	769,739
Lands Available for Disposal	5,911*	6,440	6,440	6,440	6,440

*Published acreage from 1991 RMP (BLM 1991a)

** See Maps 5 - 9

4.3.5.3. ALTERNATIVES IMPACTS

4.3.5.3.1. ALTERNATIVE A

A total of 385,316 acres (within WSAs, the Grand Gulch Special Emphasis area of the Cedar Mesa ACEC, Dark Canyon, and developed recreation sites) would be exclusion areas for new ROWs. An additional 161,224 acres are avoidance areas for new ROWs. Exclusion and avoidance areas impact lands and realty by restricting the placement of ROWs and facilities, limiting future access, delaying or increasing the cost of energy supplies, and creating communications dead zones or delaying the availability of communications services. Limitations on the placement of ROWs could also result in ROWs being located in less desirable or less economically feasible locations. Alternative A has the smallest amount of exclusion areas

(though not the smallest avoidance areas), but still results in the fewest limitations on the placement of future ROWs.

Other resource management decisions could also affect or limit the placement of ROWs and facilities on BLM lands due to minerals-related timing or controlled surface use leasing limitations on surface disturbing activities. The size and duration of impacted areas, and limitations on surface disturbing activities would also likely occur because of riparian, soils and watershed, visual resources, special status species, and wildlife management decisions. Limitations on surface disturbing activities from these resource management decisions would preclude or hinder the placement of new ROWs, with potential increases in ROW construction costs, by limiting access to some areas of the Monticello PA or delaying the completion of ROWs (in the case of seasonal limitations).

Alternative A proposes to manage 659,626 acres with timing and controlled surface use leasing stipulations and 578,604 acres with standard stipulations. A total of 113,240 acres in non-WSA lands with wilderness characteristics would continue to be ROW avoidance or exclusion areas.

Minerals and energy development decisions would impact the BLM's workload (and time spent) processing ROW grants (primarily roads and pipelines). A total of 73 wells are projected to be developed under Alternative A. The ROW development associated with 73 wells is similar to that projected for Alternatives C and D, with 74 and 75 wells, respectively. However, the ROW development associated with the 73 wells in Alternative A is 11% greater than the development associated with the 66 wells predicted under Alternative B.

Under Alternative A, approximately 110,066 acres (or 6% of the PA) would be recommended for withdrawal from mineral entry (Map 5). This decision would potentially provide fewer opportunities for mineral resource development on this acreage and less production and supply of mineral resources; however, Alternative A proposes the least restrictions on surface disturbing activities, and thus would have the least impact on the construction of future ROWs.

4.3.5.3.2. Alternatives B through E

The specific acreage affected under these alternatives is shown above in Table 4.25. The impacts avoidance and exclusion areas under these alternatives would include restricting the placement of ROWs and facilities, limiting future access, delaying or increasing the cost of energy supplies, and creating communications dead zones or delaying the availability of communications services. Limitations on the placement of ROWs could also result in ROWs being located in less desirable or less economically feasible locations. All of these would add to the costs and time to process ROWs. As the number of acres of land that are exclusion areas increase, the likelihood for adverse impacts would increase because of the increasing limitations on ROW placement.

4.3.5.4. Mitigation Measures

No mitigation measures are proposed under any of the alternatives.

4.3.5.5. Unavoidable Adverse Impacts

There would be no unavoidable adverse impacts.

4.3.5.6. SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

There would be no loss of long-term productivity from short-term uses.

4.3.5.7. IRREVERSIBLE AND IRRETRIEVABLE IMPACTS

All alternatives permit LTAs that may result in the permanent loss of lands from public ownership if they enter State or private land ownership.

There are no irreversible or irretrievable impacts to Lands or Realty for any alternative.

4.3.6. LIVESTOCK GRAZING

Impacts on livestock grazing activities are generally the result of activities that affect forage levels (and are quantified as animal unit months [AUMs]). Management decisions that are likely to have the greatest beneficial impacts on livestock grazing would include vegetation treatments and fire treatments that could increase vegetation productivity and forage (AUMs) available for livestock in the long-term from improvements in vegetation communities. Management decisions that allow and activities that produce surface disturbance and reduce vegetation productivity (e.g., minerals exploration and development, right of way (ROW) construction, recreational area development, cross-country motorized off-highway vehicle [OHV] travel) or resource decisions and activities that limit surface disturbances (e.g., special designation areas, non-WSA lands with wilderness characteristics, soil and water resources, and visual resources) would also impact livestock grazing by affecting forage levels. The analyses of these impacts on livestock grazing are based on the follow assumptions:

- Livestock grazing occurs throughout the Monticello PA, and the acreages used in this analysis represent the grazing allotments on BLM-administered lands.
- Livestock grazing is and would continue to be managed in accordance with the Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah (see Appendix D). If a grazing allotment fails to meet rangeland standards, and where it is determined that livestock grazing management practices would be a substantial factor in this failure, grazing practices would be modified so that progress could be made toward achieving the standard(s). Such modifications could include a change in stocking rate, the kind of livestock, the season of use and/or length of season, or a combination of these. Livestock grazing management modifications could also include making allotments or portions of allotments temporarily unavailable to livestock grazing in order to repair or rehabilitate areas not meeting rangeland health standards. These repair and/or rehabilitation modifications could result in a short-term or long-term loss of livestock grazing acreages and AUMs available for livestock grazing.
- Changes to livestock grazing preferences found necessary through adaptive management and monitoring and inventories acceptable to the BLM Authorized Officer would be made on an allotment-specific determination during the implementation phase of the RMP. The only changes in grazing preference considered in this analysis would be the managment decisions whereby grazing allotments or portions of allotments would be proposed as unavailable for livestock grazing as part of the alternative.
- Data collected from rangeland monitoring studies would be used to assist the BLM Field Manager in determining to what extent changes to livestock grazing would be needed to

maintain or restore rangeland health, meet resource objectives, and assure that livestock use levels are sustainable. When required, temporary suspension of livestock use would be implemented to restore an area so that it could continue to sustainably support livestock grazing and other uses.

- Under all alternatives, specified allotments would undergo season-of-use changes to facilitate grazing management while maintaining rangeland health standards. Changes in season-of-use do not necessarily affect available acreage or forage in AUMs. The season-of-use changes, common to all action alternatives, are shown in Table 4.26 below.

Table 4.26. Season-of-Use Changes, under All Action Alternatives

Allotment	1991 RMP Season-of-Use	2006 RMP Proposed Season-of-Use	Season-of-Use Change
Church Rock	12/1 to 3/31	12/1 to 5/31	Increased spring use 61 days
Indian Rock	11/15 to 3/31	11/15 to 4/15	Increased spring use 15 days
Owens Dugout	11/25 to 3/31	11/25 to 4/30	Increased spring use 30 days
Laws	9/1 to 3/31	4/16 to 11/15	Decreased fall and winter use 136 days, increased spring and summer use 138 days
Bear Trap	7/15 to 11/30	12/1 to 3/15	Decreased summer and fall use 139 days, increased winter use 105 days
Monument Canyon	12/5 to 5/31	12/1 to 5/31	Increased winter use 5 days

New allotments have been established since the approval of the 1991 RMP. These allotments were split from existing allotments so there was no change in acres available for grazing or AUMs. The new areas and their seasons-of-use are shown in Table 4.27.

Table 4.27. New Allotments Created Since the 1991 RMP, Existent under All Alternatives

Allotment	2006 RMP Proposed Season-of-Use	AUMs	Acreage
South Vega	1/6 to 4/30	15	455
Upper Mail Station	11/14 to 2/28	74	1821
Big Westwater	11/25 to 4/30	50	480

While changes in these seasons-of-use are proposed in this revised RMP, they may be modified at a later date along with the seasons-of-use on other allotments as part of general allotment administration at the activity-based decision level. Compliance with existing laws and regulations and appropriate analysis would be conducted prior to any season-of-use change, and an amendment to the forthcoming revised RMP would not be required.

There are 74 grazing allotments in the Monticello PA. These grazing allotments encompass approximately 1,761,351 acres of BLM-administered land, and approximately 78,796 AUMs (active preference) of forage are administered by the Montiecello FO. The main quantitative units for comparison between alternatives are acres and AUMs available (gained or lost) to

livestock grazing use. Length of grazing season will also used when comparing grazing impacts between alternatives.

In order to calculate a loss or gain in AUMs for any area unavailable or available to livestock grazing under this revised RMP, the acreage of the area is divided by the area of the grazing allotment(s) within which it occurs. This percentage is used to calculate the number of AUMs of forage likely to occur within the area of consideration. The exception to this method would be for situations in which an entire allotment or part of an allotment allocated to a permittee separately from the other permittee(s) in the remainder of the allotment is to be unavailable to grazing. In this case, the entire grazing preference of the permittee is affected and that figure is used. It is assumed that the calculated number of AUMs in an allotment as shown in the Monticello FO Analysis of Management Situation (AMS) (BLM 2005c) correctly represents the amount of forage available.

4.3.6.1. IMPACTS COMMON TO ALL ALTERNATIVES

Management decisions common to all alternatives that would affect the livestock grazing resource by directly decreasing or increasing acres and AUMs available to livestock, are as follows:

Under the Fire Management Plan (FMP), wildland fires could be allowed to burn unless they threaten Wildland-Urban Interface (WUI) areas, threatened, endangered, or special status species, high priority sub-basins or watersheds, cultural resources and/or cultural landscapes, or sensitive ecosystems. If wildland fire occurs on rangeland, it may result in a short-term loss of acres and AUMs available to livestock because of 1) vegetation loss, and 2) because of the BLM grazing guidelines that require burned areas that are re-seeded to be rested from livestock use for at least two growing seasons after a fire. Burned areas that are not re-seeded require a minimum rest period of one growing season (BLM 1997, and BLM 1999a).

Under all alternatives, livestock grazing decisions currently do and would continue to make designated areas unavailable for grazing, including (see Table 4.28): Bridger Jack Mesa, the Grand Gulch area of Cedar Mesa, Dark Canyon (partially unavailable), Lavender Mesa, five identified mesa tops (in the White Canyon area), Pearson Canyon, Rogers Exclusion, and developed recreation sites. Note that Lavender Mesa and Bridger Jack Mesa are physically inaccessible to livestock, so the impacts to livestock grazing would be negligible. Unavailability of the Grand Gulch and Dark Canyon would have long-term, adverse impacts on livestock grazing because these areas and their potential AUMs are currently unavailable for livestock grazing and would continue to be unavailable during the life of the RMP.

For all alternatives, health and safety decisions to reduce the risks of hazardous materials spills and improve public safety around abandoned mineland (AML) sites would have negligible impacts on livestock grazing in the short term because livestock grazing acreages and AUMs would not change. In the long term, the reclamation of AML sites could potentially expand livestock grazing acreage and increase AUMs.

Table 4.28. Areas to Remain Unavailable for Grazing, Under All Alternatives

Areas Unavailable for Grazing	Allotment(s)	BLM Acres Remaining Unavailable for Grazing[1]	Justification
Bridger Jack Mesa	Indian Creek	6,260	Inaccessible to livestock, no water, sparce vegetation, protect relict vegetation
Dark Canyon (portions)	Indian Creek, White Canyon	37,690	Protect scenic quality and wildlife habitat, and maintain primitive recreational opportunities
Five mesa tops	Lake Canyon, White Canyon	46,873	No water, sparse vegetation, protect wildlife habitat
Grand Gulch	Lake Canyon, Slickhorn	15,658	Protect cultural resources
Lavender Mesa	Indian Creek	649	Inaccessible to livestock, no water, sparse vegetation, protect relict vegetation
Pearson Canyon Hiking Trail	Little Boulder	1,118	Maintain recreational opportunities
Rogers	Monument	40	Isolated by State and private land ownership, impractical to manage for livestock grazing
Comb Wash (Arch, Fish&Owl, Mule, Road)		16,599	Protect cultural and recreational values
Developed Recreation Sites		467	Protect recreational values
Total Unavailable Acres		**125,356**	

[1] Acreages for particular areas may vary slightly due to the differences in shapefiles for GIS calculations.

Proposed land disposals (6,440 acres), exchanges, and sales under lands and realty for all of the alternatives could potentially reduce acres and AUMs available for livestock grazing in the long-term. Land acquistions would potentially increase livestock grazing acreages and AUMs. Construction of energy or communication sites, or ROWs could result in a short-term loss of acres and AUMs during construction and a permanent loss if the structure or ROW prohibits grazing indefinitely in the area.

Surface disturbing activities due to minerals exploration and development would result in in both short-term losses of AUMs and total acres accessible for livestock grazing during exploration drilling and geophysical exploration, until the disturbed areas are reclaimed. There would be long-term losses of AUMs and livestock grazing acreage from surface disturbances if wells were drilled and developed for production of oil and gas (this would include losses of AUMs and

acreage from related infrastructure and pipelines construction) for the production life of the well, and from the extraction of locatable and saleable minerals. The potential long-term loss of livestock grazing acreage from oil and gas development is predicted to range from 699 acres under Alternative A to 518 acres under Alternative E. Disturbance from any type of construction could indirectly and adversely affect livestock by increasing the numbers of exotic, invasive and/or noxious weed species, many of which are toxic to livestock (Young et al. 1999) or unpalatable and could result in a loss of grazable acres or AUMs. The noise, dust, and human presence associated with certain construction activities (e.g., minerals access road construction, well drilling, and pipeline construction/maintenance) could decrease the acreages or AUMs in the short-term.

Grazing would be unavailable on existing developed recreation sites (presently ecompassing approximately 467 acres) or future developed recreation sites, with permanent losses of livestock grazing acreage and AUMs within the new site developments.

Since livestock grazing can have adverse impacts on riparian ecosystems (Armour et al. 1991), it may be necessary to modify grazing practices when it is determined that a riparian area is identified as "Functioning at Risk" (see Table 3.23) and livestock have been determined to be a causal factor in this condition. Restrictions could be imposed under all alternatives (in compliance with BLM Riparian Policy) within the 28,997 acres of riparian areas, causing a short-term loss of acres and AUMs available to livestock through seasonal restrictions, forage utilization limits, or making affected riparian areas unavailable for livestock grazing.

Generally, highly dispersed livestock grazing has minor impact on soils, but modified management practices may be necessary where soils are found to be sensitive to disturbances by livestock. This could result in a decrease in acres and AUMs available to livestock.

Existing vegetation treatments would be maintained through retreatment of sites, and new treatments would be implemented as needed to meet management objectives. Vegetation treatments would reduce livestock grazing acreages and AUMs in the short-term, but could increase the AUMs available in the long term for livestock from potentially increased vegetation productivity after the site has been rehabilitated.

In general, where livestock grazing could potentially impact the habitats of special status species and species that are listed, or proposed for listing, or candidates for listing under the Endangered Species Act (ESA), changes would be made to grazing management practices to protect species and their habitat. This could decrease AUMs and acreages available to livestock and/or increase management requirements under the terms and conditions of the permit.

Any area available for grazing because of other resource management activities that had previously been unavailable could increase the number of acres and AUMs available to livestock if conditions allow.

If an allotment occurs in bighorn sheep habitat, it would not be possible to change the animal permitted in that allotment from cattle to sheep. Domestic sheep can transmit diseases such as pneumonia to native bighorn sheep, which is thought to have caused high numbers of bighorn sheep fatalities (Foreyt and Jessup 1982, Jessup 1985). Forage and water competition by livestock also creates stress to bighorn sheep, and all such interactions would be avoided (Desert Bighorn Council 1990).

The Comb Wash Allotment (those areas closed by court order and encompassing approximately 16,599 acres and 337 AUMs within Mule Canyon below U-95, and Arch, Fish, Owl, and Road Canyons) would be unavailable to livestock grazing under all alternatives. This would result in a long-term, adverse impact from loss of forage for livestock grazing. The impact would be minor because the unavailable acreages total less than 0.01% of the available livestock acreage within the Monticello PA.

Special designation decisions for all alternatives would make acreages within Bridger Jack Mesa (6,225 acres), Dark Canyon (61,660 acres), and Lavender Mesa (649 acres) unavailable for livestock grazing in order to protect scenic quality, natural values, and relict vegetation. The impacts to livestock grazing would be negligible within Bridger Jack and Lavender Mesas because, as mentioned above, these areas are physically inaccessible to livestock. Managing portions of Dark Canyon as unavailable to livestock grazing would have minor, adverse impacts due to limits on livestock-related water development construction and maintenance, and limits on livestock grazing fencing installation, because much of the area lies within a WSA.

Wildlife and fisherie decisions under all alternatives would manage the five mesa tops as unavailable to livestock grazing in order to protect bighorn sheep habitat. This would have negligible impacts on livestock grazing because available forage is sparse, and no water is available.

For all alternatives the acreages and AUMs unavailable to livestock grazing within the Comb Wash Allotment would leave a total of 1,744,752 acres and 78,459 AUMs available for livestock grazing.

4.3.6.2. Impacts Common to All Action Alternatives

Under all action alternatives, cultural resources decisions in special designation areas would prescribe special conditions to protect at-risk resources from possible damage due to livestock grazing. This could result in fewer acres or AUMs available in the long-term for livestock if it is determined that site closures are necessary in order to protect cultural resources. The impacts would be minor because livestock grazing limitations and/or unavailability would be site-specific within the approximately 62,567 acres encompassing the Comb Ridge, Beef Basin, Tank Bench, and McLoyd Canyon-Moon House Cultural Special Management Areas (CSMAs).

Recreation decisions for all action alternatives would protentially restrict livestock grazing, with a potential loss of acres and AUMs, if it is determined that livestock pose a risk of damaging cultural/recreation resources (e.g., petroglyph or pictograph panels, and interpretive sites).

Recreation-related travel decisions under all of the action alternatives would limit motorized OHV use by reducing the current level of open, cross-country use from 611,310 acres to no acre open under Alternatives B and E, and 2,311 acres under Alternative C and D. This would have 1) long-term, direct, beneficial impacts on livestock grazing from reduced noise and human-activity-related disturbances to livestock, and 2) indirect, beneficial impacts on livestock grazing from potential improvements in forage productivity through reduced surface disturbance impacts to vegetation.

4.3.6.3. ALTERNATIVES IMPACTS

Under all alternatives, there would be negligible impacts to livestock grazing from decisions on air quality, paleontology, non-WSA lands with wilderness characteristics, WSAs and WSRs, visual resources, and woodlands, so these resources will not be discussed and analyzed further. The impacts would be negligible because meeting National Ambient Air Quality Standards (NAAQS) and Prevention of Significant Deterioration (PSD) program air quality standards, allowing scientific study and recreational collection of fossils, protecting wilderness values within WSAs and non-WSA lands with wilderness characteristics, maintaining ORVs along eligible WSR segments, protecting scenic quality, and maintaining sustainable woodland resources for harvesting would not change the size of grazing allotments, improve or degrade forage productivity or utilization levels, or change AUMs for livestock grazing.

4.3.6.3.1. ALTERNATIVE A

4.3.6.3.1.1. Impacts of Cultural Resource Decisions on Livestock Grazing Under Alternative A

Under this alternative, cultural resource management decisions for the Comb Ridge, Beef Basin, and Tank Bench areas would not restrict or impact current livestock grazing activities. Within the Grand Gulch Special Emphasis Area, livestock grazing would be available except for approximately 16,316 acres in Grand Gulch and its tributaries (a decrease of approximately 0.9% of the total area within the Monticello PA available for livestock grazing). However, as discussed above under Impacts Common to All Alternatives, the Grand Gulch Special Emphasis Area is and would remain closed to grazing, with minor impacts to grazing from the relatively small area unavailable for grazing, in order to protect cultural resources.

4.3.6.3.1.2. Impacts of Livestock Grazing Decisions on Livestock Grazing Under Alternative A

Impacts would be the same as those discussed under Impacts Common to All Alternatives.

4.3.6.3.1.3. Impacts of Mineral Decisions on Livestock Grazing Under Alternative A

The predicted RFD surface disturbance due to oil and gas development that would occur under this alternative would be approximately 699 total acres, which would have minor, long-term impacts on livestock grazing from loss of acreages and AUMs through surface disturbances, and wellpad and access road construction. The impacts would be negligible to minor because the size of the affected area would be relatively small (0.04% of available livestock grazing acreage within the PA).

4.3.6.3.1.4. Impacts of Recreation Decisions on Livestock Grazing Under Alternative A

As discussed under Impacts Common to All Alternatives, Pearson Canyon and all developed recreation sites would be unavailable to livestock grazing. The impacts of these management decisions would have negligible to minor impacts on livestock grazing as Pearson Canyon (1,118 acres) and existing recreational facilities (totaling approximately 467 acres) comprise a relatively small area (approximately 0.08% of the total area available for livestock grazing within the

Monticello PA). Under this alternative, livestock grazing would be allowed within the San Juan SRMA and the Cedar Mesa C-SRMA, with beneficial impacts to livestock from maintained grazing acreages and AUMs.

4.3.6.3.1.5. Impacts of Riparian Decisions on Livestock Grazing Under Alternative A

There are no specific management decisions under this alternative that would impact riparian resources. However, as discussed under impacts common to all alternatives, there would be potentially short term and long term impacts to livestock grazing from acres made unavailable to livestock to protect Functioning At Risk riparian resources.

4.3.6.3.1.6. Impacts of Special Designation Decisions on Livestock Grazing Under Alternative A

As discussed under impacts common to all alternatives, livestock grazing would be unavailable in the Bridger Jack ACEC (6,260 acres), canyon bottoms of Dark Canyon ACEC (37,690 acres), and Lavender Mesa ACEC (649 acres), with impacts to livestock grazing as discussed in that subsection. The impacts from management of WSAs and WSRs would be minor because, while no areas are unavailable to livestock grazing, limits on surface disturbances could limit improvements in livestock-water structures, and fencing.

4.3.6.3.1.7. Impacts of Special Status Species Decisions on Livestock Grazing Under Alternative A

Under Alternative A, there are no special status species decisions that restrict or make livestock grazing acreages unavailable. Thus, the impacts to livestock grazing from special status species decisions would be negligible.

4.3.6.3.1.8. Impacts of Travel Decisions on Livestock Grazing Under Alternative A

The continuation of current travel decisions would have long term impacts on livestock grazing from motorized OHV use on 611,310 acres designated as open to cross-country use. The adverse impacts would result from 1) engine noise-related, and human activity and presence-related disturbances to livestock, and 2) surface disturbances to forage productivity.

4.3.6.3.1.9. Impact of Vegetation Decisions on Livestock Grazing Under Alternative A

Under Alternative A, existing vegetation treatments would be maintained and new treatments applied on 232,130 acres that could adversely impact livestock grazing in the short term and/or long term, depending on the type of treatment (BLM 1991b): mechanical treatments could remove shrub and woodland shelter need by livestock for cover, prescribed burning could potentially create conditions for the establishment or spread of toxic, invasive plant species that lack forage value. However, maintaining existing vegetation treatment areas and applying new treatments would also have long-term, beneficial indirect impacts on livestock from potentially improved forage conditions. Protection of relict vegetation within the Lavender Mesa and Bridger Jack Mesa ACECs would have negligible impacts on livestock grazing, as discussed above under Special Designation, because the mesas are and would remain inaccessible to livestock.

4.3.6.3.1.10. Impacts of Wildlife and Fisheries Decisions on Livestock Grazing Under Alternative A

There are no specific management decisions that would impact livestock grazing, except for the five mesa tops discussed above under Impacts Common to All Alternatives.

4.3.6.3.2. ALTERNATIVE B

4.3.6.3.2.1. Impacts of Cultural Management Decisions on Livestock Grazing Under Alternative B

The Comb Ridge, Tank Bench, and Beef Basin Cultural Special Management Areas (CSMAs) would be open to grazing under this alternative, but with stipulations to restrict livestock access if cultural resources become impacted. Compared to Alternative A, the impacts would be the same (negligible) because these areas would remain available for livestock grazing.

4.3.6.3.2.2. Impacts of Livestock Grazing Decisions on Livestock Grazing Under Alternative B

The following areas (shown in Table 4.29 below) would be unavailable for grazing (with a reduction in available AUMs) under this alternative, in addition to those listed for all alternatives in Table 4.28 above. Compared to Alternative A, the reduction in acreages and AUMs would have long-term, adverse impacts on livestock grazing because grazing opportunities would be lost for the life of the proposed RMP.

Table 4.29. Acres and AUMs of Forage Unavailable under Alternative B in Addition to Those Listed under Alternative A (No Action)[1]

Area Unavailable for Livestock Grazing	Allotment(s)	BLM Acres Unavailable for Grazing	Forage Lost (AUMs)
Dodge Canyon	Dodge Canyon	1,598	110
Horsehead Canyon	Montezuma Canyon	571	38
Portions of Butler Wash Canyons	Perkins Brothers, Tank Bench/ Brushy Basin, White Mesa	208	20
Slickhorn Canyon	Perkins Brothers	2,600	210
Rone Bailey Mesa	Upper Mail Station	1,162	68
Mule Canyon (including North and South Forks north of U-95)	Comb Wash, Texas-Muley	3,308	157
Rogers	Rogers	40	No active preference allotted
Subtotal		9,487	603
Alternative A closures		16,599	337
Total		**26,086**	**940**

[1]Acreages are for BLM-administered land only.

These restrictions would allow a total of 1,735,265 acres and 77,856 AUMs available for livestock grazing under this alternative. This would be a 0.5% reduction in livestock grazing acres (and 0.8% fewer AUMs) when compared to Alternative A.

4.3.6.3.2.3. Impacts of Mineral Decisions on Livestock Grazing Under Alternative B

Under Alternative B, it is predicted that 636 acres of land would be disturbed due to oil and gas development during the life of the revised RMP. This is 63 fewer acres than Alternative A, and compared to Alternative A this alternative would have fewer adverse impacts on livestock grazing from the potential reduction in AUMs due to minerals exploration and development.

4.3.6.3.2.4. Impacts of Recreation Management Decisions on Livestock Grazing Under Alternative B

Grazing would be allowed within special recreation management areas (SRMAs), with a timing restriction in the riparian areas within the San Juan River SRMA (affecting the Perkins Brothers, East League, and McCracken Wash Allotments) that confines the grazing season to the period of October 1 through May 31. There would be no change in the season of use as the current seasons of use fall within the prescribed period. Under this alternative, although grazing would be allowed in the Cedar Mesa Cultural SRMA, at-risk cultural resources would be protected against possible damage due to grazing. Thus, grazing areas could potentially become unavailable, resulting in a loss of acres and AUMs, if it is determined that livestock pose a risk of damaging cultural resources. As discussed above, this management prescription would be the same discussed under impacts common to all action alternatives, with negligible impacts on livestock grazing activities and opportunities because of the likelihood that a relatively small area would become unavailable to livestock grazing. The impacts of recreation-related OHV travel decisions would be the same as discussed under Impacts Common to All Action Alternatives. Compared to Alternative A, recreation management decisions under Alternative B would have the same impacts.

4.3.6.3.2.5. Impacts of Riparian Management Decisions on Livestock Grazing Under Alternative B

This alternative would restrict grazing access in the following riparian areas, and would allow trailing only: Moki Canyon, Lake Canyon, Harts Canyon, and Indian Creek from Kelley Ranch vicinity to Forest Service. These decisions would restrict livestock grazing and have long-term, adverse, but minor, impacts on opportunities for livestock grazing in these riparian areas. Compared to Alternative A, the riparian decisions under Alternative B would have the same impacts because the degree of impacts to livestock grazing would be the same.

4.3.6.3.2.6. Impacts of Special Designation Management Decisions on Livestock Grazing Under Alternative B

The proposed Shay Canyon ACEC is the only special designation area that would change its status from open to limited to livestock trailing only under this alternative. The ACEC would be reduced in size, its acreage decreasing from 1,770 acres under Alternative A to 119 acres under Alternative B. So, there would be a loss of grazing acreage under this alternative. Compared to

Alternative A, special designation decisions under this alternative would have the same (negligible) impacts on livestock grazing because the affected area is relatively small.

4.3.6.3.2.7. Impacts of Special Status Species Management Decisions on Livestock Grazing Under Alternative B

Livestock grazing would be prohibited between March 20 and May 15 on allotments within sage grouse habitat. In year-round habitat, grazing would be limited as necessary to maintain and/or improve habitat in areas within six miles of active sage-grouse strutting ground. Allotments subject to these restrictions are Sage Flat, Upper East Canyon, Sage Grouse and Dry Farm. The impacts on grazing would be negligible, as the prohibitions would not make livestock grazing unavailable on the affected allotments, but temporally restricted to protect species habitat. Compared to Alternative A, this alternative would have the same impacts.

4.3.6.3.2.8. Impacts of Travel Decisions on Livestock Grazing Under Alternative B

Travel decisions to reduce acreages of open motorized OHV travel from 611,310 acres to no acres would have long term, beneficial impacts on livestock by reducing noise and human presence disturbances and surface disturbances to livestock forage. Compared to Alternative A, this alternative would be more beneficial to livestock grazing because potential impacts to livestock from motorized OHV travel would be substantially less.

4.3.6.3.2.9. Impacts of Vegetation Management Decisions on Livestock Grazing Under Alternative B

Under this alternative, vegetation treatment on 1,000 acres of existing land treatments would continue and new treatments on 6,600 acres per year would be implemented. During the life of the proposed RMP, this would result in approximately 152,000 acres of vegetation treatments throughout the Monticello PA. Compared to Alternative A, this would be a reduction of approximately 72,530 acres of vegetation treatments or 33% less than the total 232,130 acres of treatments under Alternative A. The treated areas would be unavailable for grazing in the short-term, as discussed above under management common to all alternatives,, but likely improvements to the rangeland conditions would likely result in greater AUMs available or more acres open to grazing if an area is rehabilitated to the point of meeting the Standards for Rangeland Health. Compared to Alternative A, this alternative would have less indirect, beneficial impacts on livestock grazing because fewer acres would be treated to improve vegetation communities and AUMs.

It is important to note that not all of these treated areas would lead to an increase in acres or AUMs available to livestock. At this programmatic level of analysis, no specific areas for these vegetation treatments have been established, and it is not possible to determine whether there would be an increase or decrease in AUMs or acreage without data on treatment site locations or rehabilitation goals.

4.3.6.3.2.10. Impacts of Wildlife Management Decisions on Livestock Grazing Under Alternative B

Spring grazing (April 15 to June 15) would be eliminated on grazing allotments or pastures of the allotments that occur within pronghorn habitat. These allotments, as shown in Table 4.30, are: Hart Draw (partial), Mail Station, Upper Mail Station, Dry Valley/Deer Neck, Lone Cedar, and Tank Draw (see Appendix D).

Table 4.30. Changes to Livestock Season of Use in Certain Allotments under Alternative B as Compared to Alternative A (No Action)

	Total BLM Acres in Allotment or Part of Allotment	Alternative A Season of Use	Alternative B Proposed Season of Use	Change In Number of Days of Access	Percent Change in Season of Use
Mail Station	6,499	11/01 to 4/30	11/01 to 4/15	- 15	- 6%
Upper Mail Station	1,821	11/14 to 2/28	11/14 to 2/28	0	0%
Dry Valley/Deer Neck	4,172	12/01 to 4/30	12/01 to 4/15	- 15	- 7%
Lone Cedar	18,426	12/01 to 4/30	12/01 to 4/15	- 15	- 7%
Tank Draw	9,454	12/01 to 4/30	12/01 to 4/15	- 15	- 7%
Hart Draw (partial)	69,470	10/16 to 6/15	10/16 to 4/15	- 61	- 25%

Since these are seasonal restrictions, there would be no change in acreage or AUMs available for livestock, so the impacts on livestock grazing would be negligible. The impacts of this alternative, when compared to Alternative A would be the same.

4.3.6.3.3. ALTERNATIVE C

Management of cultural, Special Designation (ACEC), recreation, and riparian resources decisions would also the same as discussed under Alternative B, with the same impacts to livestock grazing.

4.3.6.3.3.1. Impacts of Livestock Grazing Decisions on Livestock Grazing Under Alternative C

Table 4.31 lists the areas that would be unavailable to grazing under this alternative, in addition to those listed under Alternative A in Table 4.28.

The same areas would be available for grazing for the life of this plan under Alternative C as in Alternative B, with the exception of Mule Canyon which would be unavailable for grazing below U-95. These restrictions would allow a total of 1,736,589 acres and 77,898 AUMs to be available for livestock grazing under this alternative. This is 0.5% fewer acres and 0.7% fewer AUMs than Alternative A.

Table 4.31. Acres and AUMs of Forage Unavailable under Alternative C in Addition to Those Listed under Alternative A (No Action)[1]

Area Unavailable for Livestock Grazing	Allotment(s)	BLM Acres Unavailable for Grazing	Forage Lost (AUMs)
Dodge Canyon	Dodge Canyon	1,598	110
Horsehead Canyon	Montezuma Canyon	571	38
Portions of Butler Wash Canyons	Perkins Brothers, Tank Bench/ Brushy Basin, White Mesa	208	20
Slickhorn Canyon	Perkins Brothers	2,600	210
Rone Bailey Mesa	Upper Mail Station	1,162	68
Mule Canyon (South of U-95)	Comb Wash, Texas-Muley	1,984	115
Rogers	Rogers	40	No active preference allotted
Subtotal		8,163	561
Alternative A closures		16,599	337
Total		**24,762**	**898**

[1]Acreages are for BLM-administered land only.

4.3.6.3.3.2. Impacts of Mineral Decisions on Livestock Grazing Under Alternative C

Approximately 710 acres are predicted to have minerals-related surface disturbance under this alternative during the life of the revised RMP. This is 11 acres or 1.7% more than Alternative A, so compared to Alternative A, there would likely be a slightly greater long-term, adverse (but minor) reduction in acreages and AUMs from loss of vegetation due to wellpad, access road, infrastructure construction, and from mineral extraction.

4.3.6.3.3.3. Impacts of Special Status Species Management Decisions on Livestock Grazing Under Alternative C

Livestock grazing under Alternative C would be prohibited between March 20 and May 15 on allotments within sage grouse habitat. In year-round habitat, grazing levels would be limited as necessary to maintain and/or improve habitat in areas within six miles of active sage-grouse strutting ground. Allotments subject to these restrictions would be Sageflat, Upper East Canyon, Sage Grouse and Dry Farm. The impacts on grazing would be the same as discussed under Alternative B (negligible), as the prohibitions would not make livestock grazing unavailable on the affected allotments, but temporally restricted to protect species habitat. Compared to Alternative A, this alternative would have the same impacts.

4.3.6.3.3.4. Impacts of Travel Decisions on Livestock Grazing Under Alternative C

The impacts from travel decisions would be the same as discussed under Alternative B because the travel decisions are similar. While approximately 2,311 acres would be managed as open to cross-country OHV use, these areas are relatively small, located in close proximity to each other, and are currently used as OHV play areas. Thus, the impacts to livestock grazing would be negligible.

4.3.6.3.3.5. Impacts of Vegetation Management Decisions on Livestock Grazing Under Alternative C

Vegetation treatments on 1,500 acres of existing land treatments would continue, and new treatment would be annually conducted on 7,800 acres. Grazing on these areas would be temporarily suspended, but in the long-term could possibly result in an increase in AUMs available to livestock.The impacts to livestock grazing would be the same as discussed under Alternative B, but to a slightly greater degree, as more acreage would be treated. Compared to Alternative A, Alternative C impacts on livestock grazing would have more potentially adverse impacts because 9,300 acres would be treated annually to improve rangeland conditions and vegetation communities (approximately 186,000 over the life of the revised RMP), which would be 20% fewer acres throughout the Monticello PA than the proposed acreage treatments under Alternative A.

4.3.6.3.3.6. Impacts of Wildlife Management Decisions on Livestock Grazing Under Alternative C

Current grazing management would continue and, where possible, would be altered to benefit forb production on pronghorn ranges in the following grazing allotments: Mail Station, Upper Mail Station, Dry Valley/Deer Neck, Lone Cedar, Tank Draw and Hart Draw. This could result in fewer AUMs available to livestock than under Alternative A, but there are no specific prescriptions under this alternative, and therefore quantitative analysis is not possible. When compared to Alternative A, this alternative would have the same impacts on livestock grazing.

4.3.6.3.4. ALTERNATIVE D

Management of cultural and recreation resources as they affect livestock grazing would be the same as all other action alternatives as discussed in the Alternative B analysis above. Management of riparian resources as it pertains to grazing would be the same as Alternative A.

4.3.6.3.4.1. Impacts of Livestock Grazing Decisions on Livestock Grazing Under Alternative D

The areas listed in Table 4.32 would be unavailable to grazing for the life of this plan, in addition to those listed under Alternative A in Table 4.28:

Table 4.32. Changes to Livestock Season of Use in Certain Allotments under Alternative D as Compared to Alternative A (No Action)

Area Unavailable for Livestock Grazing	Allotment(s)	BLM Acres Unavailable for Grazing	Forage Lost (AUMs)
Portions of Butler Wash Canyons	Perkins Brothers, Tank Bench/ Brushy Basin, White Mesa	208	20
Slickhorn Canyon	Perkins Brothers	2,600	210
Rone Bailey Mesa	Upper Mail Station	1,162	68
Rogers	Rogers	40	No active preference allotted
Mule Canyon (below U-95)	Comb Wash	1,984	115
Subtotal		5,994	413
Alternative A closures		16,599	337
Total		**22,593**	**750**

[1]Acreages are for BLM-administered land only.

These restrictions would leave a total of 1,738,758 acres and 78,046 AUMs available for livestock grazing under this alternative. This would be 0.3% fewer acres and 0.5% fewer AUMs than Alternative A, with the same impacts as discussed under Alternative A.

4.3.6.3.4.2. Impacts of Mineral Decisions on Livestock Grazing Under Alternative D

Under this alternative, RFD predictions of minerals development indicate that approximately 721 acres would lose the potential for livestock grazing due to surface-disturbing oil and gas exploration and development activities. This is 22 acres or 3.1% more than Alternative A, which, when compared to Alternative A, would have more long-term impacts to livestock grazing from the loss of AUMs.

4.3.6.3.4.3. Impacts of Special Designation Management Decisions on Livestock Grazing Under Alternative D

Under Alternative D, the only addition would be 649 acres on the Lavender Mesa that would not be managed as an ACEC and therefore would be opened to livestock grazing. However, this land is on a mesa top and is physically inaccessible to cattle, and therefore the impacts to grazing would be the same as Alternative A and as discussed in the Impacts Common to All Alternatives subsection.

4.3.6.3.4.4. Impacts of Special Status Species Management Decisions on Livestock Grazing Under Alternative D

Livestock grazing under Alternative D would be prohibited between March 20 and May 15 on allotments within sage grouse habitat. Grazing would be managed to maintain Rangeland Health. Allotments subject to these restrictions are Sageflat, Upper East Canyon, Sage Grouse and Dry

Farm. These management decisions, and their impacts on livestock grazing and AUMs, would be the same as discussed under Alternative B.

4.3.6.3.4.5. Impacts of Travel Decisions on Livestock Grazing Under Alternative D

The impacts from travel decisions would be the same as discussed under Alternative B because the travel decisions are similar, except that the impacts of open OHV use would be the negligible, as discussed above under Alternative C.

4.3.6.3.4.6. Impacts of Vegetation Management Decisions on Livestock Grazing Under Alternative D

Approximately 9,300 acres/year of new vegetation treatments would be conducted and 2,000 acres of existing treatments would be maintained per year of to improve vegetation communities within the Monticello PA. Over the life of the revised RMP, a potential total of 226,000 acres would be treated, with short-term and long-term impacts as discussed under Impacts Common to All Alternatives above. Compared to Alternative A, this alternative would have the same short-term and long-term impacts on livestock grazing because Alternative D would treat over 97% of the acreage proposed for treatment under Alternative A.

4.3.6.3.4.7. Impacts of Wildlife Management Decisions on Livestock Grazing Under Alternative D

Current grazing management would continue, and where possible, would be altered to favor forb production on pronghorn ranges in the same grazing allotments and with the same impacts as discussed under Alternative C. As also discussed under alternative C, it is not possible to analyze the management changes in a quantitative sense, but it should be noted that this management decision could decrease AUMs available to livestock to some degree within these allotments, when compared to Alternative A.

4.3.6.3.5. ALTERNATIVE E

The analysis and impacts from cultural, special designation, recreation, riparian, special status species, visual, vegetation, and wildlife resources management decisions as they pertain to livestock grazing management would be the same as discussed under Alternative B because the management decisions would be the same.

4.3.6.3.5.1. Impacts of Livestock Grazing Decisions on Livestock Grazing Under Alternative E

The following areas would be unavailable for grazing under this alternative (Table 4.33), in addition to those listed under Alternative A in Table 4.28.

These restrictions would allow a total of 1,735,265 acres and 77,377 AUMs to be available for livestock grazing under this alternative. This is 0.5% fewer acres and 0.8% fewer AUMs than Alternative A.

Table 4.33. Acres and AUMs of Forage Unavailable under Alternative E in Addition to Those Listed under Alternative A (No Action)[1]

Area Unavailable for Livestock Grazing	Allotment(s)	BLM Acres Unavailable for Grazing	Forage Lost (AUMs)
Dodge Canyon	Dodge Canyon	1,598	110
Horsehead Canyon	Montezuma Canyon	571	38
Portions of Butler Wash Canyons	Perkins Brothers, Tank Bench/ Brushy Basin, White Mesa	208	20
Slickhorn Canyon	Perkins Brothers	2,600	210
Rone Bailey Mesa	Upper Mail Station	1,162	68
Mule Canyon (including North and South Forks north of U-95)	Comb Wash	3,308	157
Rogers	Rogers	40	No active preference allotted
Subtotal		9,487	603
Alternative A closures		16,599	337
Total		**26,086**	**940**

[1]Acreages are for BLM-administered land only.

4.3.6.3.5.2. Impacts of Mineral Decisions on Livestock Grazing Under Alternative E

Under Alternative E, it is predicted that 518 acres of land would be disturbed due to minerals exploration and development. This is 181 fewer acres than proposed under Alternative A, or 25.9% less, but the impacts to grazing would be the same as discussed under Alternative A, but to a lesser degree, because fewer acres available for grazing and fewer AUMs would be lost in the long-term from minerals-related surface disturbances.

4.3.6.3.5.3. Impacts of Non-WSA Lands with Wilderness Characteristics on Livestock Grazing Under Alternative E

Potential beneficial impacts to livestock grazing could occur due to the 582,357 acres of non-WSA lands with wilderness characteristics not being available for surface disturbing activities or recreational OHV travel. Forage would not be reduced due to surface disturbing activities (road construction, oil and gas facilities, ROWs, etc). In addition, conflicts with motorized recreational users (livestock harassment, noise, gates left open, etc.) would be eliminated in non-WSA lands with wilderness characteristics. Compared to Alternative A, this alternative would be more beneficial because there would be a reduced potential for forage reductions from surface disturbance activities.

4.3.6.4. SUMMARY OF IMPACTS

Grazing restrictions due to resource management decisions would cause the following losses to acres and AUMs under each alternative (Table 4.34):

Table 4.34. BLM Acres Unavailable for Grazing and AUMs Lost to Livestock Grazing Under Each Alternative

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Acres	16,599	26,086	24,762	22,593	26,086
AUMs	337	940	898	750	940

When subtracted from the 1991 RMP totals of 1,760,584 BLM acres and 78,796 AUMs, proposed livestock grazing restrictions would leave the following total acreages available for grazing (Table 4.35):

Table 4.35. Total Acres Available to Livestock under Each Alternative and Comparisons Between Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Acres available	**1,744,752**	**1,735,265**	**1,736,589**	**1,738,758**	**1,735,265**
Compared to A	--	0.5% less	0.5% less	0.3% less	0.5% less
Compared to B	0.4% more	--	0.1% more	0.2% more	same
Compared to C	0.5% more	0.1% less	--	0.1% more	0.1% less
Compared to D	0.3% more	0.2% less	0.1% less	--	0.2% less
Compared to E	0.4% more	same	0.1% more	0.2% more	--

Total AUMs available under each alternative are listed in Table 4.36:

Table 4.36. Total AUMs Available under Each Alternative and Comparisons Between Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
AUMs available	**78,459**	**77,856**	**77,898**	**78,046**	**77,856**
Compared to A	--	0.8% less	0.7% less	0.5% less	0.8% less
Compared to B	0.8% more	--	0.1% more	0.3% more	same
Compared to C	0.7% more	0.1% less	--	0.2% more	0.1% less
Compared to D	0.5% more	0.3% less	0.2% less	--	0.3% less
Compared to E	0.8% more	same	0.1% more	0.3% more	--

As shown in the above table, there is very little difference between the numbers or acres and AUMs available when analyzed within the context of the area available for livestock grazing within the PA.

Disturbance caused by minerals extraction would have the following impacts in terms of annual acres under each alternative (Table 4.37):

Table 4.37. Annual Acres of Disturbance Due to Minerals Extraction Activities Under All Alternatives

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Acres of disturbance	**699**	**636**	**710**	**721**	**518**
Compared to A	--	9.0% less	1.5% more	3.0% more	25.9% less
Compared to B	9.9% more	--	11.6% more	13.4% more	18.5% less
Compared to C	1.5% less	10.4% less	--	1.5% more	27.0% less
Compared to D	3.0% less	11.8% less	1.5% less	--	28.2% less
Compared to E	34.9% more	22.7% more	37.1% more	39.2% more	--

As shown, Alternative D would have the highest degree of surface disturbance and Alternative E would have the least.

4.3.6.5. Mitigation Measures

All mitigation measures to minimize or avoid impacts have been addressed in the management common to all subsections found in Chapter 2 and in livestock grazing practices described in Appendices A, I, and O.

4.3.6.6. Unavoidable Adverse Impacts

The loss due to other management decisions that cause permanent surface disturbances (e.g., trail construction, facility construction, wellpad access roads) of acres or AUMs that would otherwise be available for livestock use would be unavoidable. Unavoidable adverse impacts would also include invasive weed species that become established and spread as a result of soil and vegetation disturbances (including those disturbances caused by livestock). Impacts adjacent to livestock management facilities such as water troughs and handling facilities would be unavoidable. Some conflicts with recreational activities would be unavoidable.

4.3.6.7. Short-term Use versus Long-term Productivity

Management decisions for some resources would cause short-term, adverse impacts to livestock grazing but would eventually be a benefit to the resource and contribute to long-term productivity. Vegetation treatments, fire management treatments, and woodland harvesting would cause short-term loss of acres and AUMs available to livestock from vegetation and surface disturbances, but would potentially contribute to a greater area and amount of forage in the long-term by improving the productivity of vegetation and reducing woodlands.

4.3.6.8. Irreversible and Irretrievable Impacts

Irretrievable impacts to the livestock grazing resource would include the establishment and spread of weedy, exotic, and/or noxious native-vegetation-displacing plant species that could occur as a result of surface disturbances from minerals development; vegetation and fire

treatments, woodland harvesting, and improper livestock management. Irreversible impacts to acres and AUMs available to livestock would occur anywhere a permanent structure is constructed, which would eliminate vegetation productivity for use as livestock forage.

4.3.7. MINERALS

This section presents the environmental consequences of resource management decisions proposed under each of the alternatives described in Chapter 2 on mineral resource development. Existing conditions concerning minerals are described in Chapter 3.

Negligible impacts to mineral resource development would result from from air quality, fire, health and safety, livestock grazing, paleontology, travel, or woodlands management decisions. The impacts would be negligible because maintaining air quality within NAAQS thresholds through appropriate mitigation; identifying and reducing wildland fire risks; reducing the risks of hazardous spills; maintaining safety around AML sites; establishing utilization levels and applying grazing standards and guidelines; designating recreational OHV access within the planning area; and permitting woodland harvesting would not reduce the opportunities for minerals leasing or for the exploration and development of mineral resources. Therefore, the impacts of management actions for these resources or programs on mineral resource development will not be analyzed further in this section. No impacts to mineral resource development would result from "casual use" activities.

For the Monticello PA and the expected number of wells (76 wells over the life of the plan) and other mineral development air quality does reach a level that precludes or impairs mineral resource development. In full field development scenarios, or if production was substantially higher than predicted, air quality could become more impacted and would be analyzed in future environmental documentation. Further discussion of air quality can be found in Chapters 2 and 3.

In accordance with BLM policy and its recognition of the National Energy Policy and Conservation Act of 2000 (EPCA), as discussed in Chapters 2 and 3, mineral resource development would be allowed throughout the Monticello PA subject to standard terms and conditions unless precluded by other program prescriptions, as specified in this Draft RMP.

Stipulations would be developed in the plan where necessary to mitigate the impacts of oil and gas and other mineral activity (see Appendix A). The stipulations would apply to all surface disturbing activities, aside from the exception, modification, and waiver situations as determined by an Authorized Officer and guided by the criteria in Appendix A. The area specific restrictions on surface disturbing activities listed in Table A.1 vary by alternative and detail limits on timing, surface use, and occupancy, as well as closures throughout the Monticello FO.

As described in Chapter 3, mineral resources are categorized into three mineral program types: leasable, locatable, and saleable. Leasable minerals are subject to disposal by lease under the authority of the Minerals Leasing Act of 1920, as amended, and include oil, natural gas, coal, potash, and tar sands.

Locatable minerals are usually the base and precious metal ores, ferrous metal ores, and certain classes of industrial minerals for which acquisition is made by staking a mining claim (location) over the deposit and then acquiring the necessary permits to explore or mine. For purposes of this planning effort these include uranium and vandium, placer gold, and limestone.

Saleable minerals are defined as mineral commodities sold by sales contract from the federal government. Saleable minerals are generally common varieties of construction materials and aggregates, such as sand, gravel, and roadbed and ballast material. For purposes of this planning effort these include sand and gravel, building stone, and clay.

The BLM allocates land as available or unavailable for use for the three mineral programs, and stipulates conditions of use. *Leasing* uses Standard Lease Terms, Special Conditions (Timing Limitations and/or Controlled Surface Use, TL/CSU), No Surface Occupancy, and closed. Lands classified for *locatable* minerals are identified as open to mineral entry or recommended for withdrawal from mineral entry. Lands recommended for withdrawal will be managed as prescribed in the RMP until such time as they are actually withdrawn by Congress. Lands identified for *saleable* minerals are identified as open with standard terms and conditions, open with special conditions, or closed.

Summaries of the RFD scenario for leaseable, locatable, and saleable minerals as well as predicted geophysical exploration activity levels are summarized below and discussed in detail in the Mineral Potential Report and RFD.

4.3.7.1. SUMMARY OF LEASEABLE RFD

The RFD prepared for this DRMP utilizes data on past and current development to predict future development for all lands in the Monticello PA, both BLM lands and non-BLM lands (BLM 2005b, 2005d). The RFD estimates the average acreage of disturbance per well (including the well pad, roads, and pipelines) to be 9.6 acres; the total number of existing oil and gas wells to be 1,615; and the existing surface disturbance as 15,504 acres.

The BLM administers 38.2% of the lands in the Monticello PA (see Table 4.1). Assuming the RFD applies uniformly across all lands in the Monticello PA, any calculations made, in conjunction with the disturbance per well number (9.6 acres) and the alternatives matrix in Chapter 2, can be used to estimate potential mineral resource development impacts (measured in number of wells and resulting acres of surface disturbance) on BLM lands for each alternative.

For the purposes of this analysis, it was assumed that the number of wells likely to be drilled under each alternative would be proportional to the acreage of land open for mineral resource development under that alternative. For example, if an alternative had 90% of BLM lands in the Monticello FO open for development, it would be assumed that 90% of the RFD on BLM lands would be drilled under that alternative. Table 4.38 shows the acreages of and predicted number of wells on BLM lands over the life of the RMP within the three RFD areas, which are to be the focus of this analysis and of future oil and gas development within the Monticello FO.

Table 4.38. Baseline/RFD Acreages of Lands and Predicted Number of Wells in the Three RFD Areas over the Life of the RMP

RFD Area	Acreage		BLM% of Total	Wells	
	Total	BLM		Total	BLM
Paradox Fold and Fault Belt	531,671	257,412	48	53	25
Blanding Sub-basin	1,173,537	405,664	35	120	42
Monument Upwarp	1,950,562	734,523	38	23	9
TOTAL	**3,655,770**	**1,397,599**		**196**	**76**

4.3.7.2. Summary of Geophysical RFD

Calculations can be made regarding impacts of geophysical exploration on BLM lands for each alternative in conjunction with the disturbance associated with linear miles of source line within the Monticello FO (disturbance of 2,236 acres caused by 1,230 linear miles of source line; BLM 2005d) and the alternatives matrix in Chapter 2. It is assumed that the linear miles of source line likely to be used under a given alternative would be proportional to the acreage of land open for mineral resource development under that alternative.

4.3.7.3. Summary of Locatable RFD and Saleable RFD

The same procedure can be applied to calculations regarding impacts of locatable and saleable mineral resource development on BLM lands for each alternative, in conjunction with the acres of disturbance within the Monticello FO (disturbance of 360 acres caused by locatable mineral resource development and of 491 acres caused by saleable mineral resource development; BLM 2005b) and the alternatives matrix in Chapter 2. It is assumed that the acreage likely to be developed for locatable and saleable mineral resources under a given alternative would be proportional to the acreage of land open for these types of development under that alternative.

As mentioned in the introduction to Chapter 4, short-term impacts are those that would last for up to 5 years, and long-term impacts are those that would be longer than 5 years and/or would last for the life of the RMP or beyond. Because the impact indicators for this resource were number of wells and the number of acres available for mineral resource development over the life of the RMP, short-term impacts were not distinguished from long-term impacts.

4.3.7.4. Impacts Common to All Alternatives

During the life of this RMP, 27 dry holes, 20 abandoned wells, and all 480 currently abandoned wells would be successfully reclaimed. This would result in 5,059 acres reclaimed over the life of this RMP. This will result in the surface being reclaimed, the restoration of vegetation and soils, and the wells being rehabilitated back to proper functioning condition.

Additionally, during the life of the Plan, approximately 559 linear miles of source line for 2-D and 3-D geophysical exploration would be conducted on BLM lands and would result in approximately 886 acres of surface disturbance, which would be reclaimed within 10 years. This exploration would beneficially impact mineral resource development and production in that it would improve the data available for making prudent mineral resource development decisions

(BLM 2005d). Geophysical exploration can increase the probability of drilling a successful well and reduce the amount of unnecesseary exploratory drilling (such as step-out drilling) which could reduce operational costs and make mineral development more profitable. This is a beneficial impact.

Under all alternatives, standard conditions (e.g., standard lease terms, best management practices [BMPs], conditions of approval (COAs), and standard operating procedures [SOPs]) are applied to all mineral development activities on a site specific basis. These standard conditions include compliance with non-discretionary laws (e.g., threatened and endangered species and cultural laws) and are intended to mitigate impacts to other resources (e.g., VRM, cultural, wildlife, soils, vegetation, recreation). The standard conditions add to operation costs and often result delays in processing applications and operations.

4.3.7.4.1. Impacts of Cultural Resource Decisions on Mineral Resource Development

Under all of the alternatives, the development of specific restrictions in new Cultural Resource Management Plans (CRMPs) for culturally sensitive areas such as Cedar Mesa could slow the processing of proposed mineral resource development for these areas. Generally, more rigorous protection or mitigation measures would be applied in culturally sensitive areas. Such plans may specify monitoring systems, protective measures, equipment used, the development of research designs, and/or treatment. These restrictions and mitigations could add to the cost (in time, labor, or materials) of gaining cultural resource clearances for a given mineral resource development project.

Grand Gulch National Historic District (37,388 acres) is closed to oil and gas leasing, closed to mineral disposal, and open to geophysical exploration, except for the Special Emphasis area. There would be an adverse impact on the development of 37,388 acres as these resources would not be available for development and production and royalties would be reduced. The Old Spanish Trial and Hole-in-the-Rock trail would be managed for historic values. The prescriptions would generally be impairments to mineral development; but are not expected to be prohibitive.

4.3.7.4.2. Impacts of Lands and Realty Decisions on Mineral Resource Development

Under all alternatives, including the No Action, the disposal out of federal ownership of up to 6,440 acres of BLM lands within the Monticello FO (see Appendix C and Chapter 2) would result in fewer opportunities for mineral resource development on those parcels and less production and supply of mineral resources. This is somewhat mitigated because lands are evaluated for mineral potential as part of the disposal process. High potential lands may not be disposed of because it would not be in the public interest.

WSAa are exclusion areas for ROWs but are still available to locatable minerals. Exclusion of ROWs in WSAs would have a negative impact on mineral resource development because it would be more costly and timely to develop and mitigate impacts. These impacts are also discussed under special designations because the reason for the exclusion is protection of wilderness (WSAa); however, the mechanism of exclusion of ROWs is a realty action.

4.3.7.4.3. IMPACTS OF RECREATION DECISIONS ON MINERAL RESOURCE DEVELOPMENT

Under all alternatives, including the No Action, developed recreation sites—existing and future—would be subject to NSO, recommended for withdrawal from mineral entry, and closed to mineral materials disposal. Oil and gas developers who wish to lease resources underlying developed recreation sites would be required to conduct directional drilling, which adds costs and logistical challenges to individual projects. Removing these sites from mineral entry and disposal would result in fewer options for developers of locatable and saleable resources, and potentially would lower the yield and commercial supply of these resources. It is likely that, during the life of the RMP, mineral resource development would be thus limited on more than 460 acres because they become developed recreation sites (see Section 4.3.10, Recreation) and would be a minor impact to mineral resource development.

4.3.7.4.4. IMPACTS OF RIPARIAN RESOURCE DECISIONS ON MINERAL RESOURCE DEVELOPMENT

Under all alternatives riparian areas (approximately 20,435 acres) and lands within active floodplains or within 100 meters of riparian areas would be subject to NSO. The impacts to mineral resource development resulting from protection of riparian resources on 20,435 acres would be increased costs. Producing oil and gas on lands subject to NSO is higher than it is on lands subject to standard and special stipulations due to the necessity of drilling directionally from adjacent locations where surface occupancy is allowed.

Under all alternatives minor, beneficial impacts to mineral resource development could result from allowing non-surface disturbing geophysical work within floodplains and riparian/aquatic areas. Geophysical exploration can increase the probability of drilling a successful well and reduce the amount of unnecesseary exploratory drilling. Surface disturbing exploration techniques (such as step-out drilling) could be reduced, thereby making mineral development more profitable by reducing operational costs.

Under all alternatives, oil and gas developers would be required to follow the Guidance for Pipeline Crossings (see Appendix F), including conducting hydraulic analysis during the design phase to eliminate potential environmental degradation. This may result in minor to negligible, adverse impacts to oil and gas development because it would potentially increase the up front cost of specific development projects.

Minor, beneficial impacts to mineral resource development could result from allowing mineral entry and disposal of mineral materials with an approved plan of operation within floodplains and riparian/aquatic areas. Direct beneficial impacts occur by having more acreage (20,435 acres) available for mineral resource development. Small, indirect, benefical impacts (less operating cost) occur by having sand and gravel available in locations near other mineral development operations.

4.3.7.4.5. IMPACTS OF MINERALS DECISIONS ON MINERAL RESOURCE DEVELOPMENT

Under all alternatives including the No Action alternative mineral decisions could impact development of minerals by creating restrictions between incompatiable developments. Generally, prohibitive conflicts would occur between two leasable minerals (such as oil and gas versus potash) where large acres of land would exclude other resource development. However,

potash and coal were determined to be low potential for development so this potential conflict will not be analyzed in detail for the Monticello PA.

A more likely conflict would be between Leasable and Locatable/Saleable mineral development, where placement of one facility prohibits placement of another. Small surface disturbances (e.g., gravel pits, mine locations) could impact oil and gas development. Usually, small locatable/saleable operations do not prohibit oil and gas development; they only restrict placement. Adverse impacts (e.g., increased costs due to directional drilling) may occur where placement of an oil and gas facility is required to be moved away from an existing mine/pit. For reasons stated in the MPR, development potential is low for coal, tar sand, and salt and potash resources in the Monticello FO during the foreseeable future. Thus, mineral resource development decisions would result in neglible impacts to the development of these resources under all alternatives, and these mineral resources are not discussed further in this section.

Because of rights granted to claimants under the mining laws, the BLM may impose only those surface use restrictions that are necessary to prevent undue or unnecessary degradation. Therefore, based on the RFD scenario, locatable mineral development (primarily uranium and vanadium) would likely continue during the life of the RMP, regardless of the alternative implemented. This would result in beneficial impacts to the mineral resource industry by increasing the domestic supply of uranium and vanadium. On the other hand, increased extraction of these resources would also, over time, reduce the quantities of finite uranium-vanadium resources in the Monticello FO.

4.3.7.4.6. Impacts of Soils and Watershed Decisions on Mineral Resource Development

Under all alternatives, including the No Action, any mineral resource development occurring in sensitive soils (see Chapter 2 and Section 3.14.4.3, Sensitive Soils) would require BMPs and applicable mitigation measures (Appendix A and I) to minimize impacts. Moderately and highly wind erodible soils (986,765 acres and 65 acres, respectively) would require a project proponent to comply with BMPs and mitigation measures, which could result in increased costs and time required to implement a mineral resource exploration or development project in sensitive soils. The same impact would occur for highly water erodible soils on 206,451 acres.

4.3.7.4.7. Impacts of Special Designations on Mineral Resource Development

The Monticello FO has 13 existing WSAs or ISA complexes. WSAs are areas that must be managed in a manner that does not impair their suitability for congressional designation as Wilderness (BLM 1991c; Table 4.39).

These WSA designations would continue to apply across all alternatives, including the No Action, and 386,027 acres (or 21.6%) of BLM lands would remain closed to leasing. These closures are non-discretionary. Adding to or removing acreage from these WSAs is beyond the scope of this DEIS. Maintaining the WSAs would have negative impacts upon mineral resource extraction and development because they would exclude lands from mineral resource development and lower the number of locations where potential wells could be drilled (BLM 1990; see Table 4.39). The lower number of locations could lead to a lower production and supply of oil and natural gas and fewer royalties paid to the federal government and/or the State of Utah. The finite, non-renewable resource found beneath the WSAs would not be depleted.

Table 4.39. Acres of WSAs within Each RFD Area

RFD Area	RFD Acres within WSAs	Total RFD Acres*	% of RFD within WSA
Paradox Fold and Fault Belt	10,893	268,305	4.1
Blanding Sub-basin	15,582	421,246	3.7
Monument Upwarp	359,552	1,094,076	32.9
TOTAL	**386,027**	**1,783,627**	**21.6**

* The administrative definition of RFD areas precludes WSAs, and WSAs were *not* included in the calculations and projections of the RFD (BLM 2005d). However, this number represents the total physical, geographic acreage (rather than the administrative acreage) and includes WSA acreages to depict how much of each geographic area is lost to mineral resource exploration and development due to being WSAs (i.e., closed to leasing). Note that the vast majority of RFD acres within WSAs—both in area and percentage—occur in the Monument Upwarp RFD Area.

4.3.7.4.8. Impacts of Special Status Species on Mineral Resource Development

All alternatives, including the No Action, require some degree of spatial or temporal limitation on surface disturbing activities to protect special status species and wildlife populations and their important habitats. In the case of mineral and energy resource development, specific conditions of approval or lease terms are often required to mitigate the adverse affects of development activities on special status species. Measures needed to comply with non-discretionary laws (e.g., Section 7 consultation with the U.S. Fish and Wildlife Service [USFWS]) are provided for in the Standard Lease Terms and lease notices. Under all alternatives, there is continued application of lease notices for federally listed plant and animal species as determined by Section 7 consultation between the BLM and USFWS and for any non-listed special status plant or animal species that occurs or has potential to occur in proposed lease areas.

Spatial and temporal limitations (hereafter referred to as controlled surface use and timing limitations, respectively) would have an adverse impact on mineral resource development by increasing exploration costs, time, and effort. However, the degree and magnitude of such increases depend on many factors, including the options for project siting, the locale of the lease, and the drilling window. Operators may experience adverse economic impacts if drilling operations are curtailed during special status species protection periods or if drilling operations must be moved to another area on the lease. Impacts to mineral resource development resulting from the following species and general wildlife protection measures would apply under all alternatives.

4.3.7.4.8.1. Bald Eagle

All alternatives, including the No Action, would implement controlled surface use and timing limitations near bald eagle nesting or winter roost habitat or during the nesting or roosting season. Table 4.40 summarizes the seasonal restrictions on mineral resource development by species that occur in the Monticello FO, including the bald eagle. Restrictions occur for eight months of the year. Potential adverse impacts to mineral resource development could be more time and costs for requirements such as nest monitoring or surveys, the exclusion of certain areas, avoidance of certain areas for up to eight months, and scheduling extra time for processing applications and drilling. Operators can have difficulty in scheduling a rig due to a timing limitation or may incur additional costs having a rig on stand-by.

Table 4.40. Seasonal Restrictions within Established Buffer Zones Applied to Mineral Resource Development under All Alternatives

Species	Dates	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
Burrowing owl – Nesting (0.25 mile)	3/1 – 8/31					■	■	■	■	■	■	■	■	■	■	■	■								
Cooper's hawk – Nesting (0.5 mile)	3/15 – 8/31						■	■	■	■	■	■	■	■	■	■	■								
Ferruginous hawk – Nesting (0.5 mile)	3/1 - 8/1					■	■	■	■	■	■	■	■	■	■										
Golden eagle – Nesting (0.5 mile)	1/1 - 8/31	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■								
Northern goshawk – Nesting (0.5 mile)	3/1 – 8/15					■	■	■	■	■	■	■	■	■	■	■									
Peregrine falcon – Nesting (1.0 mile)	2/1 - 8/31			■	■	■	■	■	■	■	■	■	■	■	■	■	■								
Prairie falcon – Nesting (0.25 mile)	4/1 – 8/31							■	■	■	■	■	■	■	■	■	■								
Red-tailed hawk – Nesting (0.5 mile)	3/15 – 8/15						■	■	■	■	■	■	■	■	■	■									
Short-eared owl – Nesting (0.25 mile)	3/1 – 8/1					■	■	■	■	■	■	■	■	■	■										
Swainson's hawk – Nesting (0.5 mile)	3/1 – 8/31					■	■	■	■	■	■	■	■	■	■	■	■								
Bald eagle – Nesting (1.0 mile)	1/1 – 8/31	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■								
Bald eagle – Roosting (0.5 mile)	11/1 – 3/31	■	■	■	■	■	■															■	■	■	■
Mexican spotted owl – Breeding (0.5 mile)	3/1 – 8/31					■	■	■	■	■	■	■	■	■	■	■	■								
SWW flycatcher – Breeding (0.25 mile)	5/1 – 9/30									■	■	■	■	■	■	■	■	■	■						
Yellow-billed cuckoo – Breed. (0.25 mile)	5/1 – 8/31									■	■	■	■	■	■	■	■								
California condor – Known nest (1.0 mile)	3/1 – 8/31					■	■	■	■	■	■	■	■	■	■	■	■								
Migratory birds – Known priority habitat	5/1 – 7/31									■	■	■	■	■	■										

Source: Romin and Muck 2002.

4.3.7.4.8.2. Mexican Spotted Owl (MSO)

Surveys for nesting and foraging habitat suitability and individual owls are common components of the preservation of the MSO and its habitat in the Monticello FO (see Table 4.40 for seasonal restrictions). Under all alternatives, including the No Action, two-year surveys for MSO are required in the case of permanent structures (e.g., new producing oil and gas wells), as is the occasional noise analysis if noise generating facilities are sited in or near habitat. Spatial buffers of 0.5 mile around nests or habitat are typically adequate. The full avoidance and minimization measures specified in the alternatives matrix in Chapter 2 would result in FO-wide impacts on mineral resource development similar to those described for the bald eagle (above).

4.3.7.4.8.3. Southwestern Willow Flycatcher and Western Yellow-billed Cuckoo

Under all alternatives, including the No Action, the protection of riparian habitat within the range of these two species may include surveys or monitoring, timing limitations during the nesting season (see Table 4.40), and spatial and noise buffers around suitable habitat, particularly if permanent facilities are developed nearby. A 300-foot buffer around suitable riparian habitat is required year-round to prevent surface disturbing activities. This particular species management decision would have a negative, minor impact on individual mineral resource development projects sited near riparian areas. Costs, time, and effort may increase if surveys are conducted to find out if the habitat is suitable, and if it is suitable, costs, time, and effort may increase again in the re-routing and re-siting of facilities and/or directional drilling. The full avoidance and minimization measures specified in the alternatives matrix in Chapter 2 would result in impacts on mineral resource development similar to those described for the bald eagle (above).

4.3.7.4.8.4. Endangered Colorado River Fishes

Within the Monticello FO, mineral resource development may encroach on riparian habitat in the 100-year floodplain of designated critical habitat for the bonytail, humpback chub, Colorado pikeminnow, and razorback sucker. Under all alternatives, including the No Action, restrictions on development in and around riparian habitat would have impacts on mineral resource development similar to those described for the riparian habitat of the southwestern willow flycatcher and the western yellow-billed cuckoo (above). Additionally, any water depletion affecting the Colorado River system requires consultation with the USFWS and would likely result in operators paying water depletion fees if they are using surfacewater to supply drilling operations. This would likely increase both development time and costs.

4.3.7.4.8.5. California Condor

Under all alternatives, including the No Action, mineral resource development in the Monticello FO would be timed and sited to avoid the nesting season (see Table 4.40) and locales of California condor. The protection of nesting habitat for this species may involve measures similar to those described for the southwestern willow flycatcher and the western yellow-billed cuckoo (above). No permanent structures or roads, including new producing oil and gas wells and access roads, would be allowed within 1.0 mile of known condor nest sites. This particular species management decision would have a negative, minor impact on individual mineral resource development projects sited near known nest sites. Costs, time, and effort may increase if surveys are conducted to find out if nests are nearby, and if nests are nearby, costs, time, and

effort may increase again in the re-routing and re-siting of facilities. The full avoidance and minimization measures specified in the alternatives matrix in Chapter 2 would result in impacts on mineral resource development similar to those described for the bald eagle (above).

4.3.7.4.8.6. Migratory Birds and Raptors

Under all alternatives, including the No Action, occupied, migratory bird habitat would require mineral resource developers to avoid surface disturbing activities during nesting season. This in turn would result in impacts on mineral resource development similar to those described for the bald eagle (above).

4.3.7.4.8.7. Summary of Impacts Common to All Special Status Species Decisions on Mineral Resource Development

Exact acreages of habitat to be restricted would depend on the results of field surveys associated with specific projects within the Monticello FO and cannot be quantified at this time. However, some general conclusions can be drawn regarding the timing limitations. As is evident from Table 4.40, developers would be able to conduct mineral resource exploration, development, and production without timing limitations for only one month out of the year (i.e., October). The fall and winter months (i.e., September through February) would have the fewest timing limitations on mineral resource development, while the spring and summer months (i.e., March through August) would have the most. The most restrictive months of the year would be May through July; nearly all timing limitations would be in effect during that period. Together, these decisions would result in relatively minor impacts to mineral resource development at the FO-wide level.

4.3.7.4.9. Impacts of Visual Resource Decisions on Mineral Resource Development

Mineral resource development would be subject to the VRM class objectives of the area within which development would occur. VRM management on areas designated as VRM Class III and IV imposes minimal restrictions on mineral resource development. Designation of an area as VRM Class I essentially closes the area to mineral resource activity. Management of areas as VRM Class II allows alteration of line, form, color and texture that characterize the existing landscape, although the resulting contrast should not attract the attention of the casual observer. Meeting VRM Class II objectives imposes additional costs on mineral resource developers.

Under all action alternatives, areas managed as VRM Classes II, III, and IV would typically be available to leasing with either standard lease terms or controlled surface use stipulations. This visual resource decision would generally have a beneficial effect on mineral resource development because more areas would be available under standard lease terms or controlled surface use stipulations, rather than being restricted with NSO. The beneficial impact would be that mineral exploration and development could still occur.

Under all action alternatives, direct, adverse impacts to mineral resource development resulting from VRM class I designations would include the exclusion of lands available for mineral resource development, a lower number of locations where potential wells could be drilled, a lower yield and commercial supply of oil and natural gas, and fewer royalties. All WSAs (386,027 acres) are managed as VRM Class I for all alternatives.

4.3.7.4.10. Impacts of Wildlife and Fisheries Decisions on Mineral Resource Development

Under all alternatives, including the No Action, surface disturbing activities resulting in long-term loss of habitat (see Section 4.3.7.4, Impacts Common to All Alternatives) would be prohibited on 56,740 acres on five mesa tops to give priority to bighorn sheep habitat improvement. This restriction would account for a 3.2% decrease in lands available for mineral resource development, which would result in less yield and commercial supply of the resource and fewer royalties paid to the federal government or the State of Utah.

On-site mitigation would be required for projects that disturb or remove the forage/browse species of bighorn sheep. This would result in adverse impacts to individual mineral resource development projects but generally does not preclude development. If a given project disturbs bighorn sheep forage in this fashion, it would be required to increase its costs, effort, and time to prepare and implement a forage-rehabilitation mitigation plan.

4.3.7.4.11. Impacts of Other Lands Managed by BLM on Mineral Resource Development

Under all alternatives, the BLM manages federal leases on certain lands not administered by the BLM, including:

- 101,720 acres within the Glen Canyon National Recreation Area (NRA),
- 366,850 acres within the Manti-LaSal National Forest, Monticello Ranger District,
- 51,610 acres within the Navajo Indian Reservation,
- 1,080 acres within Indian Trust Lands, and
- 55,390 acres on private, split-estate lands.

The impacts of permitting leasing on these non-BLM lands within the Monticello FO—a total of 576,650 acres—would have beneficial and long-term impacts upon mineral resource development, especially oil and gas. Leasing of these non-BLM lands would result in the permitting of additional wells, which in turn would result in an increase in the domestic supply of oil and gas and increased royalties to the federal government or the State of Utah. The Navajo Nation would also receive economic benefits from the leasing of their lands, including fees from the use of surface permits and ROWs. However, continued oil and gas extraction would, over time, reduce the quantities of finite fossil fuel resources in the Monticello FO.

4.3.7.5. Alternatives Impacts

4.3.7.5.1. Alternative A

4.3.7.5.1.1. Impacts of Cultural Resource Decisions on Mineral Resource Development Under Alternative A

Various CSMAs, historic districts, and historic trails have been designated throughout the Monticello FO. Some cultural designations are located within recreational designations or special designations.

- The Cedar Mesa CSRMA and its impacts on mineral resource development are discussed in full in Section 4.3.7.4.3, Impacts of Recreation Decisions on Mineral Resource Development.
- McLoyd Canyon-Moon House and the Grand Gulch Historic District are within WSAs that are managed under the IMP. This section assesses impacts of the cultural resource decisions associated with each of these entities. The impacts of other decisions regarding these entities are discussed in Section 4.3.7.4.7, Impacts of Special Designations Decisions on Mineral Resource Development.

Under the No Action Alternative cultural resource decisions regarding the 37,433-acre Grand Gulch Historic District (already within a WSA) and the 4,240-acre special emphasis area (within the historic district) would result in the entire historic district being closed to disposal of mineral materials (Table 4.41) and the special emphasis area being closed to leasing and geophysical work.

These cultural resource decisions for the Grand Gulch Historic District would have negative, minor impacts on mineral resource development, particularly mineral materials. These decisions would account for a 2.1% decrease in BLM lands available for mineral materials disposal and a 0.2% decrease in BLM lands available for leasing and geophysical work, which in turn would result in less oil and gas productivity and geophysical exploration within the historic district. Ultimately, direct impacts would be manifest as a slightly lower yield of oil and gas; less sand, gravel, building stone, and clay available for public consumption; and poorer data on the mineral resource reserves underlying the historic district. Indirect impacts would include increased time and cost of individual mineral resource development projects within this historic district because of the likelihood of needing to re-route pipelines, access roads, and well pads to avoid cultural resource sites.

4.3.7.5.1.2. Impacts of Lands and Realty Decisions on Mineral Resource Development Under Alternative A

Under the No Action Alternative, the existing transportation and utility ROW corridors would have a beneficial impact on mineral resource exploration and development because additional travel corridors would allow easier access to mineral resource development facilities, sites, and well pads within the Monticello FO.

Under Alternative A, approximately 110,066 acres would be recommended for withdrawal from mineral entry. This decision has the potential to result in fewer opportunities for mineral resource development on this acreage and less production and supply of mineral resources.

Table 4.41. Acres of BLM Lands Available for Mineral Resource Development under Each Alternative

Resource	Alternative A – No Action*	Alternative B	Alternative C	Alternative D	Alternative E
LEASABLE MINERAL RESOURCE DEVELOPMENT, INCLUDING OIL AND GAS					
Standard Lease Terms	578,604 (584,270)	365,170	629,472	962,283	213,290
Special Conditions	659,626 (815,690)				
Timing Limitations (TL)		786,489	569,657	418,242	511,649
Controlled Surface Use (CSU)		67,288	51,419	2,758	25,428
TL and CST		22,963	98,425	0	8,564
Subtotal of Open Lands	*1,238,230 (1,399,960)*	*1,241,910*	*1,348,973*	*1,383,283*	*758,929*
No Surface Occupancy	161,224 (268,080)	125,105	39,323	14,175	53,915
Closed to Leasing**	385,316 (111,170)	416,612	395,329	386,853	974,463
Due to WSAs	*386,027 (111,170)*	*386,027*	*386,027*	*386,027*	*386,027*
Due to non WSA w/ WCs	***	*0*	*0*	*0*	*582,357*
Due to ACECs	***	*26,380*	*3,895*	*0*	*9,454*
Due to WSRs	***	*7,984*	*3,968*	*0*	*0*
Due to Cultural	***	*0*	*9*	*9*	*0*
LOCATABLE MINERAL RESOURCE DEVELOPMENT (MINERAL ENTRY)					
Open	1,675,057	1,527,656	1,682,865	1,739,389	1,015,384
Withdrawn	110,066	257,467	102,258	45,734	769,739
SALEABLE MINERAL RESOURCE DEVELOPMENT (MINERAL MATERIAL DISPOSAL)****					
Standard Terms and Conditions	578,604 (584,270)	365,168	624,734	962,279	213,290
Special Conditions	810,652 (821,070)	876,736	724,234	420,998	545,641
Subtotal of Open Lands	*1,389,256 (1,405,340)*	*1,241,904*	*1,348,968*	*1,383,277*	*758,931*
Closed	395,514 (373,850)	542,402	435,338	401,026	1,025,378

*The acreages currently managed (the first acreage listed) differ from the 1991 RMP acreages (the second acreage listed in parenthesis) because of WSAs (closed to leasing under IMP after the 1991 RMP was signed), which were not taken into account at the time of the 1991 RMP. Most of these WSAs were ACECs and available for leasing subject to special conditions.

** Approximately 386,027 of these acres are closed due to WSA designation, across all alternatives (BLM 1990; see the IMP; see also Section 4.3.7.4.7 and Table 2.1, Summary of Impacts, for an itemized list of all closures and their acreages). WSA closures are non-discretionary and, thus, are beyond the scope of this EIS analysis. Due to improvements in GIS technology since the 1991 RMP and differences in datasets and methods of calculation, the Closed sub-categories (e.g., WSAs, ACECs) *do not add up to the total Closed acreage* (e.g., 385,316 under the No Action).

*** WSA designations account for all closures under the No Action.

**** See Maps 18 – 22 for mineral material disposals under each alternative.

4.3.7.5.1.3. Impacts of Mineral Decisions on Mineral Resource Development Under Alternative A

Oil and Gas Resources

In total, approximately 1,238,230 acres of BLM lands within the Monticello FO would remain administratively open for oil and gas leasing under Standard and Special lease stipulations within the three RFD development areas (see Table 4.41). Based on the proportion of BLM lands open for leasing and the RFD (BLM 2005d), it is estimated that 73 predicted oil and gas wells would be drilled over the life of the RMP (Table 4.42; Map 23). The socioeconomic analysis in this chapter (Section 4.3.12, Socioeconomic Resources) estimates the yield of oil and gas—in terms of barrels and thousand cubic feet (Mcf), respectively—that would result from implementation of the No Action Alternative.

Under this alternative, approximately 47% of all open BLM lands would be available under standard stipulations, and approximately 53% of all open BLM lands would be available under special stipulations. Oil and gas development would occur in all three RFD areas. Although the largest acreage available for development is in the Monument Upwarp RFD Area, it is worth noting that this area would likely see the least amount of development in terms of wells (i.e., 7). Among all RFD areas, it also is the one with the greatest proportion and amount of its lands subject to special stipulations from management prescriptions used to protect ACECs, WSAs, and VRM Class I or II. Most wells (i.e., 41) would be drilled in the Blanding Sub-basin RFD Area.

Under this alternative, the federal government and/or the State of Utah would continue to receive royalties from the production and sale of oil and gas (see Section 4.3.12, Socioeconomic Resources). Continued oil and gas extraction would also, over time, reduce the quantities of finite fossil fuel resources found in the Monticello FO, though it is difficult to quantify the proportional impact on these reserves.

Geophysical Exploration

Under the No Action Alternative, approximately 559 linear miles of source line for 2-D and 3-D geophysical exploration would be conducted over the life of the RMP and would result in approximately 886 acres of surface disturbance. This exploration would beneficially impact mineral resource development and production because it would refresh or increase the data available for making prudent mineral resource development decisions (BLM 2005d). More costly and surface disturbing exploration techniques (e.g., step-out drilling) would be reduced, making mineral development more profitable. Geophysical exploration would occur in all three RFD areas, as detailed in Table 4.42.

Table 4.42. Predicted Oil and Gas Wells and Geophysical Exploration on BLM Lands within RFD Areas under Alternative A–No Action, Average over the Life of the Plan (LOP) and Maximum per Year (MPY)

RFD Area	Acres of BLM Lands Available			% of BLM Lands Available	Predicted Wells*	Geophysical Exploration	
	Standard	Special	Total			Linear Miles of Source Line	Acres
AVERAGE OVER THE LIFE OF THE PLAN (LOP)							
Paradox Fold and Fault Belt	163,953	89,121	253,074	98	25	271	495
Blanding Sub-basin	270,410	127,657	398,067	98	41	205	271
Monument Upwarp	144,241	442,848	587,089	80	7	83	120
LOP TOTAL	**578,604**	**659,626**	**1,238,230**		**73**	**559**	**886**
MAXIMUM PER YEAR (MPY)**							
Paradox Fold and Fault Belt	***	***	***	***	3	25	45
Blanding Sub-basin	***	***	***	***	4	14	25
Monument Upwarp	***	***	***	***	1	6	11
MPY TOTAL	*****	*****	*****		**8**	**45**	**81**

Note: Calculations based on BLM lands only.

*Oil and natural gas wells are considered together.

**Based on the RFD (BLM 2005d), MPY reflects the maximum development that *could* occur in *any given year* of the life of the Plan. During most Plan years, development per year will be less than this maximum. To find the *average* development per year, take the value of interest in the first part of the table, Average over the Life of the Plan (LOP), and divide the value by 15, which is the number of years the Plan is expected to be in effect.

*** Same as corresponding value under Average Over the Life of the Plan (LOP).

Other Leasable Resources

Although 1,238,230 acres of BLM land are administratively open for the leasing of potash and salt and tar sands development, potential (and thus impacts) are low. The Cane Creek and Lisbon Valley Known Potash Leasing Areas (KPLAs) (less than 9,000 acres), and the White Canyon Designated Tar Sand Area (DTSA) (approximately 10,000 acres) are considered low development potential as discussed in the Mineral Potential Report for the Monticello PA (BLM 2005b, pages 34-35). Based on the low potential and infrequent development/interest in potash and salt and tar sands leasing because of mineral resource development decisions, impacts would be negligible under the No Action Alternative.

Locatable Resources

In total, approximately 1,675,057 acres of BLM land would remain open to development of uranium-vanadium, copper, gold, and limestone under the No Action Alternative. Oil and gas development has a high potential to co-occur with uranium-vanadium development and some potential to co-occur with limestone development (in the south-central and southeastern Monticello FO). However, uranium-vanadium and limestone mining operations are typically small enough to preclude conflict or adverse impacts with oil and gas development (BLM 2005d). This is evident in the Lisbon Valley area, historically a well established uranium mining district and a prolific producer of oil and gas. The impacts of any future development of locatable resources would be analyzed through site specific NEPA when and if the project(s) are proposed.

Saleable Resources

In total, approximately 1,389,256 acres of BLM land would remain open to development of sand and gravel, building stone, and clay (Map 18), and there is high potential for continued development of known deposits at existing levels throughout the life of the RMP, regardless of the alternative chosen. Although unexplored areas of high development potential are dispersed throughout the Monticello PA, and although development of these resources may be co-located with oil and gas and other mineral resource development, particularly in the northeastern portion of the Monticello PA, mineral material disposal operations are typically discrete sites, small enough to avoid conflicts with the development of other mineral resources. Negligible impacts to saleable resources from development of other mineral resources would be anticipated. Based on increased aceages available for oil and gas leasing or other mineral development, an indirect impact could be the increased need for sand and gravel for road maintenance and construction.

4.3.7.5.1.4. Impacts of Management of Non-WSA Lands with Wilderness Characteristics on Mineral Resource Development Under Alternative A

Under the No Action Alternative, no BLM lands would be managed as non-WSA lands with wilderness characteristics and therefore there would be no impacts on mineral resource development.

4.3.7.5.1.5. Impacts of Recreation Decisions upon Mineral Resource Development Under Alternative A

Under the No Action Alternative, mineral resource development in the 10,203-acre San Juan River SRMA would be subject to NSO within the 100-m riparian area and to standard or special stipulations outside that area. No impacts on mineral resource development in this SRMA would result from recreation decisions under the No Action Alternative.

Under the No Action Alternative, leasing and other mineral resource development activities would be subject to standard or special stipulations for the portions of the 375,734-acre Cedar Mesa Cultural SRMA that are outside a WSA. Therefore, no impacts on mineral resource development in these areas would result from recreation decisions under this alternative.

4.3.7.5.1.6. Impacts of Riparian Resource Decisions on Mineral Resource Development Under Alternative A

The impacts of riparian resource decisions on mineral resource development are the same for all alternatives and are discussed above under Section 4.3.7.4, Impacts Common to All Alternatives.

4.3.7.5.1.7. Impacts of Soils and Watershed Decisions on Mineral Resource Development Under Alternative A

Under the No Action Alternative, a minimum of 1,063,019 acres of BLM lands open to surface-disturbing mineral resource development (i.e., leasing under Standard or Special Stipulations, and lands that are subject to No Surface Occupancy but are Open to minerals entry, or 76.5% of open BLM lands) are overlain by sensitive soils with medium and high limitations (Table 4.43). Stipulations required to protect sensitive soils would require a project proponent to comply with BMPs and mitigation measures, which could result in increased costs and time required to implement a mineral resource exploration or development project in sensitive soils.

Table 4.43. Minimum Acreages of High- and Medium-risk Sensitive Soils within Lands Open to Surface Disturbing Mineral Resource Development, by RFD Area, under Alternative A–No Action

RFD Area	Leasing Category	Total Acreage	Largest Single Limiting Factor[2]	Acreage	% Total Acreage
Blanding Sub-basin	Standard	270,410	Alkalinity	223,674	82.7
	Special	127,657	Alkalinity	107,629	84.3
	NSO, Open to ME[1]	4,078	Alkalinity	2,971	72.9
	Subtotals	**402,145**		**334,274**	**83.1**
Monument Upwarp	Standard	144,241	Alkalinity	95,694	66.3
	Special	442,848	Alkalinity	323,125	73.0
	NSO, Open to ME[1]	142,032	Alkalinity	111,175	78.3
	Subtotals	**729,121**		**529,994**	**72.7**

Table 4.43. Minimum Acreages of High- and Medium-risk Sensitive Soils within Lands Open to Surface Disturbing Mineral Resource Development, by RFD Area, under Alternative A–No Action

RFD Area	Leasing Category	Total Acreage	Largest Single Limiting Factor[2]	Acreage	% Total Acreage
Paradox Fold and Fault Belt	Standard	163,953	Alkalinity	125,069	76.3
	Special	89,121	Rooting Depth	69,434	77.9
	NSO, Open to ME[1]	4,916	Rooting Depth	4,248	86.4
	Subtotals	**257,990**		**198,751**	**77.0**
TOTALS		**1,389,256**		**1,063,019**	**76.5**

1. NSO, Open to ME = No Surface Occupancy but Open to Mineral Entry.
2. Possible limiting factors are water erosion, wind erosion, droughty soils, excess salt, excess sodium, rooting depth, and alkalinity.

4.3.7.5.1.8. Impacts of Special Designations Decisions on Mineral Resource Development Under Alternative A

Impacts from ACECs on Mineral Resource Development

Protection of the relevant and important values indentified for ACECs generally result in "special management attention" which is usually greater restrictions on mineral resource development and other surface disturbing activities. These restrictions are often implemented with a shift away from Standard Terms and Conditions to CSU, NSO, or Closure.

Under the No Action Alternative 488,616 acres of BLM lands occur in ACECs, of which 387,535 are subject to NSO or closed to leasing. Of the 387,535 acres there are 268,138 acres closed to leasing because they are also located in WSAs. The remaining 119,397 acres have been limited as a direct result of designation of the ACECs. Closure of 6.7% of all BLM lands (119,397 acres) due to ACEC designation (Table 4.44) would have a negative impact on mineral resource extraction and development. These areas would be excluded from mineral resource development and lower the number of locations where potential wells could be drilled. The lower number of locations could indirectly lead to a lower production and supply of oil and natural gas and fewer royalties paid to the federal government and/or the State of Utah. The finite non-renewable resource found beneath these lands would not be depleted.

The exact acreage of each ACEC varies by alternative. Across all alternatives, the following existing and proposed ACECs are entirely or partially within one or more WSAs: Bridger Jack Mesa, Butler Wash North, Cedar Mesa, and Dark Canyon. For each of these ACECs, the portion(s) that overlap with a WSA would be managed as WSAs and would be impacted the same as described above for WSAs (Map 81).

Table 4.44. Acreages of Existing and Potential ACECs that are Available to Mineral Resource Development, if Designated under Alternative A – No Action

ACEC	Acres			VRM Outside WSA[2]	Acres in Each Lease Category				Other Activities Outside WSAs		
	Total	Within WSA[1]	Outside WSA		Standard	Special	NSO	Closed	Mineral Entry	Mineral Disposal	Geophysical Exploration
EXISTING											
Alkali Ridge	39,202	--	39,202	III	473	38,729	0	0	yes	yes	yes
(Alkali Ridge NHL)	(2,340)	--	(2,340)	III	(0)	(2,340)	(0)	(0)	yes	yes	yes
Bridger Jack Mesa	6,260	6,260	0	NA	13	0	0	6,247	yes	no	yes
Butler Wash North	17,464	17,464	0	I (Var.)	536	122	1,213	15,592	yes	no	yes
Cedar Mesa[4]	295,336	184,015	111,321	Var.	1,521	75,892	23,387	194,537	yes	yes	yes
(Grand Gulch SEA)	(4,240)	(4,240)	--	I	(0)	(0)	(0)	(4,240)	no	no	no
(Valley of the Gods SEA)	(31,387)	--	(31,387)	I	--	--	--	--	yes	yes	yes
(Scenic Highway Corridor)	(SEE POTENTIAL)										
Dark Canyon	61,660	61,660	0	I	114	168	0	61,377	no	no	no
Hovenweep	1,798	--	1,798	III	170	913	713	0	yes	no	yes
Indian Creek/Lockhart Basin	8,510	--	8,510	I	5	461	3,443	4,602	yes	no	yes
(Indian Creek)	(8,510)	--	(8,510)	I	(5)	(461)	(3,443)	(4,602)	yes	no	yes
(Lockhart Basin)	(SEE POTENTIAL)										
Lavender Mesa	649	--	649	NA	50	2	597	0	yes	no	yes
POTENTIAL											
(Lockhart Basin)	(0)	--	(0)	NA	(0)	(0)	(0)	(0)	--	--	--
San Juan River[3]	15,100	--	15,100	NA	0	0	0	0	--	--	--
Shay Canyon	5,448	--	5,448	III	392	3,169	0	0	yes	yes	yes
(Valley of the Gods SEA)	(SEE EXISTING)										
Scenic Highway Corridor	57,737	9,930	47,807	I (Var.)	303	2,879	65,893	9,934	--	yes	--

"NA" and "–" both mean Not Applicable. Items in parenthesis are subsets of the first number above that is *not* in parenthesis.

1. Always VRM I and Closed to leasing.
2. According to Alternatives Matrix in Chapter 2, if specified.
3. To be managed as SRMA in this alternative.
4. Portions of Cedar Mesa ACEC lie within eight WSAs.

Impacts from WSRs on Mineral Resource Development

The number of miles of recommended WSRs varies by alternative. Impacts on mineral resource development resulting from WSR decisions include prescriptions for mineral resource development in riparian and floodplain areas; these are discussed in detail above, in Section 4.3.7.4.4, Impacts of Riparian Resources Decisions on Mineral Resource Development. Many WSR recommendations prescribe NSO in riparian areas as a condition of designation. However, as NSO leasing would occur in riparian areas regardless of the WSR recommendations of these segments, designation of the following recommended segments would result in no additional impacts to mineral resource development under No Action:

- Arch Canyon (2,208 acres, BLM river miles, 6.9)
- Colorado River Segment #1 (352 acres, BLM river miles, 2.2)
- Indian Creek (1,536 acres, BLM river miles, 4.8)
- San Juan River Segment #1 (1,360 acres, BLM river miles, 8.5)
- Dark Canyon (2,048 acres, BLM river miles, 6.4)
- Fable Valley (2,176 acres, BLM river miles, 6.8)

Under the No Action Alternative, Colorado River Segments #2 and #3 and San Juan River Segments #2 through #5 have been determined to be eligible for WSR designation. Therefore, adverse impacts resulting from WSR decisions, in the form of limited mineral resource development (e.g., NSO leases and other strict limitations) would occur on 7,168 acres. This acreage accounts for a 0.4% decrease in BLM lands available for optimal mineral resource development; therefore, the impacts, although adverse, are negligible.

4.3.7.5.1.9. Impact of Special Status Species and Other Wildlife and Fisheries Decisions on Mineral Resource Development Under Alternative A

Bighorn Sheep Lambing and Rutting

Under the No Action Alternative, oil and gas exploration, development, and geophysical work would be prohibited on 329,750 acres of bighorn sheep crucial habitat (or 18.4% of all BLM lands) during the lambing season (106 days) and rutting season (92 days; Table 4.45). Other mineral resource development may continue with a plan of operation. These management decisions would result in negative, minor impacts to mineral resource development, in the form of slowed production from mineral resource development facilities in this area due to timing limitations.

Pronghorn Fawning Area

Under the No Action Alternative, oil and gas exploration, development, and/or production and geophysical work would be prohibited on the 12,960-acre pronghorn crucial habitat area (or 0.7% of all BLM lands) during the fawning season (31 days; see Table 4.45). Other mineral resource development may continue with a plan of operation. These management decisions would result in impacts similar in type to those that would occur in bighorn lambing and rutting habitat, though at slightly less magnitude.

Table 4.45. Additional Seasonal Restrictions within Established Buffer Zones Applied to Mineral Resource Development under Alternative A

Species	Dates	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
Bighorn – Lambing (329,750 acres)	4/1 – 7/15							■	■	■	■	■	■	■											
Bighorn – Rutting (329,750 acres)	10/15 – 12/31																				■	■	■	■	■
Pronghorn – Fawning (12,960 acres)	5/15 – 6/15										■	■													
Deer – Winter use (197,550 acres)	12/15 – 4/30	■	■	■	■	■	■	■	■																■

Deer Winter Range

Under the No Action Alternative, oil and gas exploration, development, and/or production and geophysical work would be prohibited on the 197,550-acre deer crucial winter range (or 11.1% of all BLM lands) during the period of critical winter use (151 days; see Table 4.45). Other mineral resource development may continue with a plan of operation. These management decisions would result in impacts similar in type to those that would occur in bighorn lambing and rutting habitat, though at slightly less magnitude.

In all, wildlife decisions necessitating special stipulations would impact various acreages at various times of the year. Under the No Action Alternative, no wildlife related timing limitations would be enforced on any acreage from July 15 through October 15 (92 days). However, the most limitations would occur from December 15–31 and for the month of April, at which times wildlife related restrictions on up to 527,300 acres (or 29.5% of all BLM lands, if habitats do not overlap) would be enforced.

4.3.7.5.1.10. Impacts of Vegetation Management Decisions on Mineral Resource Development Under Alternative A

Under the No Action Alternative, maintenance of existing vegetation treatments and the implementation of new treatments on approximately 232,130 acres of lands in the Monticello PA would have minimal impacts on exploration, development, and production of mineral resources.

Under this alternative, however Bridger Jack Mesa (5,290 acres) and Lavender Mesa (649 acres) ACECs are protected for near relict and relict vegetation. The management prescriptions include open to oil and gas leasing, but NSO. This will have an adverse impact, as the cost to directionally drill is higher than conventional vertical drilling.

The ACECs are also closed to mineral materials, which removes the acreage and minerals available. However, the mineral materials in this area are lower grade and access would be very difficult and costly.

The ACECs are available for locatable minerals with an approved plan of operation. Access would likely be along escarpments and not on the mesa tops. However, surface disturbance for ventilation shafts might be limited or more costly and be an adverse impact.

Generally, the impacts of vegetation management on mineral resource development are minor because the acreage is small and access is difficult. Additionally, most of the area is protected by the IMP as it falls within a WSA (see Section 4.3.14, Special Designations).

4.3.7.5.1.11. Impacts of Visual Resource Management Decisions on Mineral Resource Development Under Alternative A

Mineral resource development would be subject to the VRM Class objectives of the area within which development would occur. Areas managed as VRM III and VRM IV are allowed a wider range of impacts on visual resources and generally would have negligible impacts on mineral resource development in the Monticello PA. Areas managed as VRM I and VRM II result in more limitations to mineral resource development in the Monticello PA since fewer changes to the line, form, color and texture that characterize the existing landscape would be allowed. Table

4.46 quantifies the acreages of land within each VRM Class, which dictate the level of surface disturbance allowed.

Table 4.46. Acreages of Each VRM Class by Alternative

VRM Class	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
I	371,575	497,668	425,179	390,424	998,370
II	355,112	250,641	132,001	8,838	111,478
III	416,806	426,350	531,920	692,741	264,369
IV	637,875	608,463	693,995	691,119	407,459
TOTALS	**1,781,368**	**1,783,122**	**1,783,095**	**1,783,122**	**1,781,676**

Note that these acreages include WSAs, which are managed as VRM I. Table 4.39 and other tables discussing the impacts of mineral resource development decisions on mineral resource development exclude WSAs, and thus reflect different acreages.

Under the No Action Alternative, approximately 371,575 acres (or 20.9% of BLM lands) would fall into the VRM I class, and in these areas, mineral resource development would be subject to NSO or closed to leasing due to the restrictions on surface disturbance in this VRM class. Most of the lands managed as VRM Class I are also WSAs (see discussion for Impacts Common to all and Special Designations). These lands would be closed to oil and gas leasing. Lands managed as VRM Class I would have little if any surface disturbing activities, as it is difficult to accomplish oil or gas activities of any kind (directional or otherwise) and yet achieve the VRM objectives in a VRM I area. Accordingly, it is likely that such areas, including NSO areas, could have adverse impacts on mineral resource development, thus resulting in a lower number of locations where potential wells could be drilled, a lower yield and commercial supply of oil and natural gas, and fewer royalties.

Areas that inventory as VRM II but are in areas that are available to leasing subject to standard or special stipulations would be managed as VRM III, unless otherwise specified in the special management prescriptions found in the 1991 RMP. These visual resource decisions would have a beneficial, minor impact on mineral resource development because areas normally subject to NSO could be available under standard or special stipulations. The beneficial impact would take the form of simplified exploration and production, with corresponding lower costs.

4.3.7.5.2. ALTERNATIVE B

4.3.7.5.2.1. Impacts of Cultural Resource Decisions on Mineral Resource Development Under Alternative B

The Comb Ridge CSMA (38,012 acres) and the Tank Bench CSMA (2,646) would be closed to locatable mineral entry, mineral material disposal, and geophysical exploration. Oil and gas leasing and development would be subject to NSO. These cultural resource decisions would account for a 2.3% decrease in BLM lands available for mineral entry and mineral material disposal, though leasing could continue subject to NSO. The No Action Alternative does not specify restrictions on development in these CSMAs.

Impacts on mineral resource development in the historic district would be the same as impacts under the No Action Alternative, except that closing the entire historic district to geophysical

exploration under Alternative B is more restrictive than the No Action Alternative (accounting for 2.1% of all BLM lands). Because no gathering of geophysical data would occur in the historic district under Alternative B, no new data or knowledge of the mineral resource reserves underlying the historic district would be collected.

4.3.7.5.2.2. Impacts of Lands and Realty Decisions for Alternative B on Mineral Resource Development Under Alternative B

Under Alternative B, approximately 263,467 acres (or 15.0% of all BLM lands) would be recommended for withdrawal from mineral entry. This decision has the potential to result in adverse impacts of the same type as the No Action Alternative, but at a greater magnitude. Alternative B, along with Alternative E, represents the greatest acreage recommended for withdrawal.

4.3.7.5.2.3. Impacts of Mineral Decisions on Mineral Resource Development Under Alternative B

Oil and Gas Resources

Approximately 1,241,910 acres of BLM lands within the Monticello FO would be administratively open for oil and gas leasing under standard and special lease stipulations, within the three RFD development areas (see Table 4.41). Based on the proportion of BLM lands open for leasing and the RFD (BLM 2005d), it is estimated that 66 predicted oil and gas wells would be drilled over the life of the RMP (Table 4.47; Map 24; BLM 2005c). This alternative would result in an increase of approximately 3,680 acres available for development (or 0.3%) but a decrease of 7 predicted oil and gas wells (or 9.6%) compared to the No Action Alternative. See the socioeconomic analysis in this chapter (Section 4.3.12, Socioeconomic Resources) for the projected yield of oil and gas for Alternative B.

Alternative B has a slightly larger (0.3%) acreage open to leasing while but has more stipulations for protection of resources. Alternative B has less development (as measured in wells), compared to Alternative A. The increase in BLM lands administratively open to leasing compared to Alternative A is negligible.

The decrease of wells compared to the No Action Alternative could be due to the smaller acreages of BLM lands available under standard stipulations (the most open stipulations). Under Alternative B, approximately 29% of all BLM lands available for leasing would be subject to standard stipulations, and approximately 71% of all open BLM lands would be subject to special stipulations. Considerably more land is subject to special stipulations. The adverse impacts of more stipulations include increased costs for development, increased time for processing of applictions, and fewer months each year that surface disturbing activities could be conducted.

Table 4.47. Predicted Oil and Gas Wells and Geophysical Exploration on BLM Lands within RFD Areas under Alternative B, Average over the Life of the Plan (LOP) and Maximum per Year (MPY)

RFD Area	Acres of BLM Lands Available			% of BLM Lands Available	Predicted Wells*	Geophysical Exploration	
	Standard	Special	Total			Linear Miles of Source Line	Acres
AVERAGE OVER THE LIFE OF THE PLAN (LOP)							
Paradox Fold and Fault Belt	24,359	182,875	207,234	81	20	224	408
Blanding Sub-basin	148,521	217,919	366,440	90	38	188	249
Monument Upwarp	192,290	475,946	668,236	91	8	95	137
LOP TOTAL	**365,170**	**876,740**	**1,241,910**		**66**	**507**	**794**
MAXIMUM PER YEAR (MPY)**							
Paradox Fold and Fault Belt	***	***	***	***	2	21	37
Blanding Sub-basin	***	***	***	***	4	13	23
Monument Upwarp	***	***	***	***	1	7	13
MPY TOTAL	*****	*****	*****		**7**	**41**	**73**

Note: Calculations based on BLM lands only.

*Oil and natural gas wells are considered together.

**Based on the RFD (BLM 2005d), MPY reflects the maximum development that *could* occur in *any given year* of the life of the Plan. During most Plan years, development per year will be less than this maximum. To find the *average* development per year, take the value of interest in the first part of the table, Average over the Life of the Plan (LOP), and divide the value by 15, which is the number of years the Plan is expected to be in effect.

*** Same as corresponding value under Average Over the Life of the Plan (LOP).

Oil and gas development would occur in all three RFD areas. Similar to the No Action Alternative, the Monument Upwarp RFD Area would see the least amount of development in terms of wells (i.e., 8), despite having the most lands administratively open to development. Also similar to the No Action Alternative, most wells (i.e., 38) would be drilled in the Blanding Sub-basin RFD Area. In looking at the individual RFD areas, other possible factors for the notable decrease in wells under Alternative B become apparent. First, approximately 81,100 acres of open BLM lands have shifted from the Blanding Sub-basin and Paradox Fold and Fault Belt RFD Areas (the areas of more active development) to the Monument Upwarp RFD Area (the area of least development) under Alternative B. The loss of projected wells from the active areas (a loss of 8 wells, compared to the No Action Alternative) is not compensated with the gain of wells in the less active area (a gain of 1 well, compared to the No Action Alternative). Second, of the acres of BLM lands open to leasing, the Blanding Sub-basin and Paradox Fold and Fault Belt RFD areas both have more lands subject to special stipulations than standard stipulations. In the Blanding Sub-basin RFD area, 2.5 times more open lands are subject to special stipulations under Alternative B than under the No Action Alternative. In the Paradox Fold and Fault Belt RFD Area, 1.9 times more open lands are subject to special stipulations under Alternative B than under the No Action Alternative.

Ultimately, under Alternative B, the direct impacts of mineral resource development decisions on oil and gas production would be somewhat adverse compared to the No Action Alternative. A small decrease in the potential number of oil and gas wells under Alternative B (a 9.6% decrease) would lead to a small decrease in the available supply of oil and/or natural gas. The federal government and/or the State of Utah would continue to receive royalties from the production and sale of oil and gas, though at somewhat lower rates than under the No Action Alternative (see Section 4.3.12, Socioeconomic Resources). However, the decreased number of predicted wells would also decrease the rate at which finite reserves of fossil fuel resources in the Monticello FO are extracted and consumed (compared to the No Action Alternative), which would have a beneficial impact on the long-term viability and availability of these resources.

Geophysical Exploration

Under Alternative B, approximately 507 linear miles of source line for 2-D and 3-D geophysical exploration would be conducted over the life of the RMP for the purposes outlined in Section 4.3.7.1, Summary of Leasable RFD, and would result in approximately 794 acres of surface disturbance over the life of the RMP. This exploration would result in beneficial impacts to mineral resource development of the same type and quality described in Section 4.3.7.1 and for the same reasons (BLM 2005d). However, less exploration would happen under Alternative B than under the No Action Alternative; 52 fewer miles of source line (a decrease of 9.3%) would be used under Alternative B compared to the No Action Alternative. Geophysical exploration would occur in all three RFD areas, as detailed in Table 4.47.

Other Leasable Resources

Although 1,241,910 acres of BLM land would be administratively open under Alternative B for the leasing of potash and salt and tar sands (an increase of approximately 3,700 acres, or 0.3% acres, compared to the No Action Alternative); because the level of development expected is low, impacts to potash and salt and tar sands leasing due to mineral resource development decisions would be negliable; the same as impacts under the No Action Alternative.

Locatable Resources

Approximately 1,527,656 acres of BLM land would be open under Alternative B to mineral entry of uranium-vanadium, copper, gold, and limestone: a decrease of approximately 147,401 acres compared to the No Action Alternative. Impacts of locatable resource decisions under this alternative would be essentially the same as those described for the No Action Alternative, except that there would be slightly less acreage and mineral available for development. The surface disturbance and occupation associated with mining operations for uranium-vanadium, copper, gold, and limestone are usually small enough that they do not prohibit leasable mineral development and therefore the impact is neglible. Small, beneficial impacts could occur to leaseable minerals as more roads are maintained or developed for access to locatable minerals.

Saleable Resources

Approximately 1,241,904 acres of BLM land would be open to development of sand and gravel, building stone, and clay under Alternative B (Map 19). This represents a decrease of approximately 147,350 acres (11%) compared to the No Action Alternative. Impacts of saleable resource decisions under this alternative would be essentially the same as those described for the No Action Alternative, except that there would be slightly less acreage and minerals available for development. The surface disturbance and occupation associated with mining operations for sand and gravel, building stone, and clay are usually small enough that they do not prohibit leasable mineral development, and therefore the impact is neglible. Small, beneficial impacts could occur to leaseable minerals as more roads are maintained or developed for access to locatable minerals.

4.3.7.5.2.4. Impacts of Management of Non-WSA Lands with Wilderness Characteristics on Mineral Resource Development under Alternative B

Impacts under Alternative B would be the same as under Alternative A, for the same reasons.

4.3.7.5.2.5. Impacts of Recreation Resource Decisions on Mineral Resource Development Under Alternative B

Under Alternative B, in the 10,203-acre San Juan River SRMA, surface disturbance from mineral resource development on existing claims would be minimized without curtailing valid existing rights. Leasing in the SRMA would be subject to NSO. The SRMA would be closed to and recommended for withdrawal from mineral entry. Finally, the SRMA would be closed to mineral materials disposal except for the area above the rim in the vicinity of the Bluff Airport lease. These recreation decisions would account for a 0.6% decrease in BLM lands available for leasing-related surface disturbance, mineral entry, and mineral materials disposal compared to the No Action Alternative. Thus they would have generally negative but negligible impacts upon mineral resource development compared to the No Action Alternative, which does not specify restrictions on mineral resource development in this SRMA.

Under Alternative B, portions of the 375,734-acre Cedar Mesa Cultural SRMA that are outside a WSA would be leased under standard or special stipulations. As this same area presently includes some amount of land subject to NSO (and would continue this categorization under the No Action Alternative), Alternative B represents a negligible, beneficial impact to mineral resource development in comparison to the No Action Alternative. Standard and special

stipulations are the less restrictive leasing stipulations, and if more lands are available under these stipulations, a larger yield and commercial supply of oil and gas would potentially result.

4.3.7.5.2.6. Impacts of Soils and Watershed Decisions on Mineral Resource Development Under Alternative B

Under Alternative B, a minimum of 1,049,158 acres of BLM lands open to surface disturbing mineral resource development (or 76.7% of open BLM lands) are overlain by sensitive soils with medium and high limitations (Table 4.48). The particular requirements and limitations on such mineral resource development and the resulting impacts on mineral resource development would be the same as those under the No Action Alternative.

Table 4.48. Minimum Acreages of High- and Medium-risk Sensitive Soils within Lands Open to Surface Disturbing Mineral Resource Development, by RFD Area, under Alternative B

RFD Area	Leasing Stipulation	Total Acreage	Largest Single Limiting Factor[2]	Acreage	% Total Acreage
Blanding Sub-basin	Standard	148,521	Alkalinity	127,525	85.9
	Special	217,919	Alkalinity	182,212	83.6
	NSO, Open to ME[1]	39,805	Alkalinity	29,888	75.1
	Subtotals	**406,245**		**339,625**	**83.6**
Monument Upwarp	Standard	192,290	Alkalinity	133,552	69.5
	Special	475,946	Alkalinity	354,952	74.6
	NSO, Open to ME[1]	35,826	Rooting Depth	24,142	67.4
	Subtotals	**704,062**		**512,646**	**72.8**
Paradox Fold and Fault Belt	Standard	24,359	Alkalinity	19,544	80.2
	Special	182,875	Rooting Depth	142,307	77.8
	NSO, Open to ME[1]	49,473	Rooting Depth	35,036	70.8
	Subtotals	**256,707**		**196,887**	**76.7**
TOTALS		**1,241,910**		**1,049,158**	**76.7**

1. NSO, Open to ME = No Surface Occupancy but Open to Mineral Entry.
2. Possible limiting factors are water erosion, wind erosion, droughty soils, excess salt, excess sodium, rooting depth, and alkalinity.

Under Alternative B, in addition to the Gold Book Standards (BLM and FS 2005), a plan (and BLM approval) would be required for surface disturbance occurring on slopes between 21 and 40%, and no surface disturbance would be allowed on slopes over 40%. These soils and watershed management decisions would have minor, negative impacts on surface disturbing mineral resource development in several ways. For a given mineral resource development project occurring on slopes of 21–40%, costs, time, and effort for mineral resource development would increase due to the necessity of preparing and implementing an erosion control plan. For a given mineral resource development project on lands including slopes over 40%, mineral resource development facilities such as pads and pipelines would need to be re-sited or re-routed which, in addition to increasing costs, time, and effort for the project, would have the potential to be less than optimal in design, according to the specific goals of the project proponent.

4.3.7.5.2.7. Impacts of Special Designations Decisions for Alternative B on Mineral Resource Development Under Alternative B

ACECs

All ACECs are considered for management in Alternative B. ACECs are designated when special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natual systems or processes, or to protect life and safey from natural hazards.

In Alternative B, there are 521,141 acres of ACEC that require special management protection. Generally, the impacts to mineral development are increased costs to implement mitigation, delayed times for processing applications, decreased areas available for development and exploration, and limitations of the types of equipment, processes, and time available for development. All of these would be considered impediments to development and exploration for leaseable, locatable, and saleable minerals.

Under Alternative B, 521,058 acres of BLM lands would occur in ACECs (Table 4.49).

In all, 373,349 of these acres are subject to NSO or closed to leasing. If 285,782 acres (out of 373,349 acres) are closed to leasing because they are located in WSAs, the remaining 87,567 acres are limited to mineral resource development as a direct result of designation of the ACECs (see Table 4.49). Therefore, for the purposes of this analysis, implementation of Alternative B represents a closure of 4.9% of all BLM lands (87,567 acres) due to ACEC designation. ACEC designation under Alternative B has slightly less negative impact upon mineral resource development (about 1.8% less) than it does under the No Action Alternative.

WSAs

Impacts would be the same as Alternative A and were presented in Impacts Common to All.

WSRs

Under Alternative B, all WSR segments are recommended suitable.

- A total of 7,984 acres—comprising Colorado River Segment #3, Dark Canyon, and San Juan River Segments #3 and #5—are recommended with prescriptions of VRM I, closure to oil and gas development, and recommendations for withdrawal from mineral entry.

A total of 3,056 acres—comprising Colorado River Segment #2 and Fable Valley—are recommended with prescriptions of VRM II and NSO restrictions on leasing.

- A total of 2,272 acres—comprising San Juan River Segments #2 and #4—are recommended with prescriptions of VRM III and standard stipulations for leasing except in riparian areas.

Therefore, under Alternative B, a total of 11,040 acres is effectively unavailable for leasing due to WSR recommendation decisions. This unavailable acreage accounts for 2.6% of all BLM lands and amounts to a minor to negligible, adverse impact, in comparison to the No Action Alternative.

Table 4.49. Acreages of Existing and Potential ACECs that are Available to Mineral Resource Development, if Designated under Alternative B

ACEC	Acres			VRM Outside WSA[2]	Lease Stipulation (Acres)				Other Activities Outside WSAs		
	Total	Within WSA[1]	Outside WSA		Standard	Special	NSO	Closed	Entry?	Disposal?	Geophysical?
EXISTING											
Alkali Ridge	39,196	--	39,196	IV	0	37,050	2,146	0	--	--	--
(Alkali Ridge NHL)	(2,146)	--	(2,146)	NA	(0)	(0)	(2,146)	(0)	no	no	no
Bridger Jack Mesa	6,225	6,225	0	II	0	7	0	6,212	yes	no	yes
Butler Wash North	17,365	17,365	0	I	4	209	0	17,152	no	no	--
Cedar Mesa[4]	306,743	247,954	58,789	III	40,170	65,473	6,270	194,830	--	--	--
(Grand Gulch SEA)	(4,240)	(4,240)	--	NA	(0)	(0)	(0)	(4,240)	--	--	--
(Valley of the Gods SEA)	… SEE POTENTIAL …										
(Scenic Highway Corridor)	… NOT SPECIFIED …										
Dark Canyon	61,660	61,660	0	I	0	85	0	61,574	no	no	no
Hovenweep	2,439	--	2,439	III	2,412	0	0	0	yes	no	yes
Indian Creek/Lockhart Basin	56,293	6,842	49,,431	I	0	1	48,704	7,588	no	no	yes
(Indian Creek)	(8,510)	(6,842)	(1,668)	I	(0)	(1)	(3,907)	(4,602)	no	no	yes
(Lockhart Basin)	(47,783)	(0)	(47,783)	I	(0)	(0)	(44,797)	(2,986)	no	no	yes
Lavender Mesa	649	--	649	II	0	0	649	0	yes	no	yes
POTENTIAL											
(Lockhart Basin)	… SEE EXISTING …										
San Juan River[3]	7,590	--	7,590	I, II, III (Var.)	2,298	0	4,810	432	no	no	--
Shay Canyon	119	--	119	II	0	0	119	0	yes	no	yes
Valley of the Gods	22,863	--	22,863	I	0	0	0	22,863	no	no	--

"NA" and "–" both mean Not Applicable. Items in parenthesis are subsets of the first number above that is *not* in parenthesis.

1. Always VRM I, or closed to leasing.
2. According to Alternatives Matrix in Chapter 2, if specified.
3. To be managed as SRMA in this alternative.
4. Portions of Cedar Mesa ACEC lie within eight WSAs.

4.3.7.5.2.8. Impacts of Special Status Species and Other Wildlife and Fisheries Decisions on Mineral Resource Development Under Alternative B

Gunnison Sage-grouse

Under Alternative B, management decisions regarding Gunnison sage-grouse would include reserving 4,524 acres of BLM lands (or 0.2% of all BLM lands) for crucial year-round habitat.

In lek habitat on these lands (within 2.0 miles of active strutting grounds), the species management decisions detailed in the Alternatives Matrix in Chapter 2 would result in negligible, adverse impacts to mineral resource development, primarily from leasing limitations on surface use near active strutting grounds, including reduced opportunities for geophysical work and limitations on activities from March 20 through May 15 of each season. These surface and timing limitations would not prohibit or deter mineral resource development; they would merely slow down development and/or production of the resource.

Oil and gas exploration and development subject to standard stipulations would be allowed in year-round habitat on these lands (within 6.0 miles of active strutting grounds), though mineral resource developers would follow the Suggested Management Practices in the Gunnison Sage-grouse Rangewide Conservation Plan (BLM 2005l), which in some cases may necessitate more rigorous conservation practices during standard leasing. Nonetheless, adverse impacts to mineral resource development from implementation of the Gunnison Sage-grouse Rangewide Conservation Plan would be negligible.

Alternative B would result in the most restrictions on mineral resource development due to Gunnison sage-grouse management decisions.

Bighorn Sheep Lambing and Rutting

Under Alternative B, on the 453,388-acre bighorn crucial habitat area (or 25.4% of all BLM lands), the special conditions described in Chapter 2 would be enforced for the duration of the lambing season and rutting season (Table 4.50; see also the No Action Alternative for the duration). These management decisions would result in the same timing related impacts as the No Action Alternative. However, because this crucial habitat area is 123,638 acres (37.9%) larger than it is under the No Action Alternative, the net impact to mineral resource development under Alternative B would be somewhat negative compared to the No Action Alternative.

Pronghorn Fawning Area

Under Alternative B, on the 29,365-acre pronghorn crucial habitat area (or 1.6% of all BLM lands) the special conditions described in Chapter 2 would be enforced for the duration of the fawning season (46 days; see Table 4.50). These management decisions would result in minor impacts on mineral resource development, in the form of slightly slowed production from mineral resource development facilities in this area because of timing limitations, though more so than under the No Action Alternative.

Table 4.50. Additional Seasonal Restrictions within Established Buffer Zones Applied to Mineral Resource Development under Alternative B

Species	Dates	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
Gunnison sage-grouse leks (2.0 miles)																									
Non-disturbing geophysical work	3/20 – 5/15						■	■	■	■															
All permitted activities (nighttime)	3/20 – 5/15						■	■	■	■															
Bighorn – Lambing (453,388 acres)	4/1 – 7/15							■	■	■	■	■	■	■											
Bighorn – Rutting (453,388 acres)	10/15 – 12/31																				■	■	■	■	■
Pronghorn – Fawning (29,365 acres)	5/1 – 6/15									■	■	■													
Deer – Winter use (785,921 acres)	11/1 – 5/15	■	■	■	■	■	■	■	■	■												■	■	■	■
Elk – Winter use (191,173 acres)	11/1 – 5/15	■	■	■	■	■	■	■	■	■												■	■	■	■

Because this crucial habitat area is 16,405 acres (129%) larger and the fawning season is 15 days (32.6%) longer than under the No Action Alternative, impacts on mineral resource development from this wildlife decision would occur over more than twice the area and for a longer period of time under Alternative B compared to the No Action Alternative. However, considering the low acreage of BLM lands devoted to this habitat under Alternative B, even though the difference between this alternative and the No Action Alternative is dramatic, the overall impact on the FO-wide mineral resource development program remains very minor to negligible.

Deer Winter Range

Under Alternative B, on the 785,921-acre deer crucial winter range (or 44.1% of all BLM lands), the special conditions described in Chapter 2 would be enforced for 196 days of critical winter use (i.e., more than half the year; see Table 4.50). This crucial habitat area is 588,371 acres (297.8%) larger and the duration of enforcement is 45 days (29.8%) longer than under the No Action Alternative. These management decisions would result in major impacts on mineral resource development compared to the No Action Alternative, both in terms of the large area restricted as winter range and the duration of enforcement of the restrictions. Major impacts would include delays in permitting for production of mineral resources and restrictions on the period of surface disturbance.

Elk

Under Alternative B, on the 191,173-acre elk crucial winter range (or 10.7% of all BLM lands), the special conditions described in Chapter 2 would be enforced during the period of winter use (196 days, or more than half the year; see Table 4.50). These management decisions would result in impacts on mineral resource development compared to the No Action Alternative, similar to those described above for deer winter range, though over a much smaller area.

In all, wildlife decisions necessitating special stipulations would impact various acreages at various times of the year. Under Alternative B, as under the No Action Alternative, no wildlife related timing limitations would be enforced on any acreage from July 15 through October 15 (92 days). At the other end of the spectrum, restrictions from May 1 through 15 would be enforced on up to 876,736 acres (or 49% of all BLM lands, assuming overlap; see Table 4.41) under Alternative B which, throughout this analysis, is the single largest restriction of mineral resource development (in area) because of preservation of other resources.

4.3.7.5.2.9. Impacts of Vegetation Management Decisions on Mineral Resource Development Under Alternative B

Impacts to mineral resource development under Alternative B would be essentially the same as under the No Action Alternative, except that fewer acres of vegetation would be treated (1,000 acres/year), and because the same acreages of vegetation in ACECs would be protected from surface disturbance.

Impacts of Visual Resource Decisions on Mineral Resource Development Under Alternative B

Under Alternative B, approximately 497,668 acres (or 27.9% of BLM lands) would fall into the VRM I class, and in these areas, mineral resource development would be subject to NSO or closed to leasing because of the restrictions on surface disturbance in this VRM class. Adverse impacts under Alternative B would be of the same type as in the No Action Alternative, for the same reasons, but at a greater magnitude (7.0%).

4.3.7.5.3. ALTERNATIVE C

4.3.7.5.3.1. Impacts of Cultural Resource Decisions on Mineral Resource Development Under Alternative C

Under Alternative C, cultural resource decisions regarding the 38,012-acre Comb Ridge CSMA and the 37,388-acre Grand Gulch National Historic District would result in the same impacts to mineral resource development as occur under Alternative B.

Under Alternative C, the 2,646-acre Tank Bench CSMA would be open to mineral entry, mineral materials disposal, geophysical exploration, and oil and gas leasing and development with standard stipulations. The No Action Alternative does not specify cultural resource decisions affecting mineral resource development for the Tank Bench CSMA; therefore, Alternative C would result in negligible, beneficial impacts to mineral resource development in the Tank Bench CSMA, compared to the No Action Alternative. Direct impacts would include a very slight increase in oil and gas productivity and productivity of locatable and saleable minerals, as well as improved data on the mineral resource reserves underlying the CSMA.

4.3.7.5.3.2. Impacts of Lands and Realty Decisions on Mineral Resource Development Under Alternative C

Under Alternative C, approximately 147,435 acres (or 8.2% of all BLM lands) would be recommended for withdrawal from mineral entry. This decision has the potential to result in adverse impacts of the same type as the No Action Alternative, but at a much lower magnitude.

4.3.7.5.3.3. Impacts of Mineral Decisions on Mineral Resource Development Under Alternative C

<u>Oil and Gas Resources</u>

In total, approximately 1,348,973 acres of BLM lands within the Monticello FO would be administratively open for oil and gas leasing under standard and special lease stipulations within the three RFD development areas (see Table 4.41). Based on the proportion of BLM lands open for leasing and the RFD (BLM 2005d), it is estimated that 74 predicted oil and gas wells would be drilled over the life of the RMP (Table 4.51; Map 25; BLM 2005c). This alternative would result in an increase of approximately 110,743 acres available for development (or 8.9%) and an increase of 1 predicted oil and gas well (or 1.4%) compared to the No Action Alternative. See the socioeconomic analysis in this chapter (Section 4.3.12, Socioeconomic Resources) for the projected yield of oil and gas for Alternative C.

Under this alternative, approximately 47% of all open BLM lands would be available under standard stipulations, and approximately 53% of all open BLM lands would be available under special stipulations. Although the overall acreage administratively open to leasing is greater under this alternative than under the No Action Alternative, Alternative C's standard stipulations/special stipulations ratio is very similar to that of the No Action Alternative.

Oil and gas development would occur in all three RFD areas. Similar to the No Action Alternative, the Monument Upwarp RFD area would see the least amount of development in terms of wells (i.e., 9), despite having the most lands administratively open to development.

Table 4.51. Predicted Oil and Gas Wells and Geophysical Exploration on BLM Lands within RFD Areas under Alternative C, Average over the Life of the Plan (LOP) and Maximum per Year (MPY)

RFD Area	Acres of BLM Lands Available			% of BLM Lands Available	Predicted Wells*	Geophysical Exploration	
	Standard	Special	Total			Linear Miles of Source Line	Acres
AVERAGE OVER THE LIFE OF THE PLAN (LOP)							
Paradox Fold and Fault Belt	81,564	169,204	250,768	97	24	269	489
Blanding Sub-basin	254,706	142,314	397,020	98	41	205	271
Monument Upwarp	293,201	407,984	701,185	95	9	99	143
LOP TOTAL	**629,471**	**719,502**	**1,348,973**		**74**	**573**	**903**
MAXIMUM PER YEAR (MPY)**							
Paradox Fold and Fault Belt	***	***	***	***	3	25	45
Blanding Sub-basin	***	***	***	***	4	14	25
Monument Upwarp	***	***	***	***	1	7	13
MPY TOTAL	*****	*****	*****		**8**	**46**	**83**

Note: Calculations based on BLM lands only.

*Oil and natural gas wells are considered together.

**Based on the RFD (BLM 2005d), MPY reflects the maximum development that *could* occur in *any given year* of the life of the Plan. During most Plan years, development per year will be less than this maximum. To find the *average* development per year, take the value of interest in the first part of the table, Average over the Life of the Plan (LOP), and divide the value by 15, which is the number of years the Plan is expected to be in effect.

*** Same as corresponding value under Average Over the Life of the Plan (LOP).

Also similar to the No Action Alternative, most wells (i.e., 41) would be drilled in the Blanding Sub-basin RFD Area. Some notable differences in the RFD areas' leasing stipulations can be seen between Alternative C and the No Action Alternative. In the Paradox Fold and Fault Belt RFD area, under Alternative C, more than two-thirds of available lands are subject to special stipulations, whereas under the No Action Alternative, nearly two-thirds of available lands are available under standard stipulations. In the Monument Upwarp RFD area, more than twice as much land is subject to standard stipulations under Alternative C compared to the No Action Alternative, while the land subject to special stipulations decreases by only about 7.9% under Alternative C.

Ultimately under Alternative C the direct impacts of mineral resource development decisions on oil and gas production would be beneficial, but negligible, compared to the No Action Alternative. A very small increase in the potential number of oil and gas wells under Alternative C (a 1.4% increase) would lead to a very small increase in the available supply of oil and/or natural gas and in royalties (see Section 4.3.12, Socioeconomic Resources).

Geophysical Exploration

Under Alternative C, approximately 573 linear miles of source line for 2-D and 3-D geophysical exploration would be conducted over the life of the RMP for the purposes outlined in Section 4.3.7.2, Summary of Geophysical RFD and would result in approximately 903 acres of surface disturbance over the life of the RMP. This exploration would result in beneficial impacts to mineral resource development of the same type and quality described in Section 4.3.7.2 and for the same reasons (BLM 2005d), to a greater degree than the No Action Alternative. Fourteen more miles of source line (an increase of 2.5%) would be used under Alternative C compared to the No Action Alternative. Geophysical exploration would occur in all three RFD areas, as detailed in Table 4.51.

Other Leasable Resources

Although 1,348,973 acres of BLM land would be administratively open under Alternative C for the leasing of potash and salt and tar sands (an increase of approximately 110,743 acres, or 8.9%, compared to the No Action Alternative), because the level of development expected is so low, impacts to potash and salt and tar sands leasing because of mineral resource development decisions would be nearly identical to those described under the No Action Alternative.

Locatable Resources

Approximately 1,682,865 acres of BLM land would be open under Alternative C to mineral entry of uranium-vanadium, copper, gold, and limestone, a decrease of approximately 7,808 acres, or less than 1%, compared to the No Action Alternative. The types and forms of impacts under Alternative C would be the same as those described for the No Action Alternative.

Saleable Resources

Approximately 1,358,968 acres of BLM land would be open to development of sand and gravel, building stone, and clay under Alternative C (Map 20). This represents a decrease of approximately 40,288 acres compared to the No Action Alternative. Impacts under Alternative C would be essentially the same as those described for the No Action Alternative.

4.3.7.5.3.4. Impacts of Management of Non-WSA Lands with Wilderness Characteristics on Mineral Resource Development Under Alternative C

Impacts under Alternative C would be the same as under Alternative A, for the same reasons.

4.3.7.5.3.5. Impacts of Recreation Decisions on Mineral Resource Development Under Alternative C

Under Alternative C, in the 10,203-acre San Juan River SRMA, recreation decisions that pertain to mineral resource development would be the same as Alternative B, except that the entire SRMA, including the Bluff Airport vicinity, would be closed to mineral materials disposal. These recreation decisions would result in essentially the same impacts as Alternative B.

Under Alternative C, recreation decisions regarding the 375,734-acre Cedar Mesa Cultural SRMA would result in the same impacts that would occur under Alternative B.

4.3.7.5.3.6. Impacts of Soils and Watershed Decisions on Mineral Resource Development Under Alternative C

Under Alternative C, a minimum of 1,063,652 acres of BLM lands open to surface disturbing mineral resource development (or 76.6% of available BLM lands) are overlain by sensitive soils with medium and high limitations (Table 4.52). The particular requirements and limitations on such mineral resource development and the resulting impacts on mineral resource development would be the same as those under the No Action Alternative.

Table 4.52. Minimum Acreages of High- and Medium-risk Sensitive Soils within Lands Open to Surface Disturbing Mineral Resource Development, by RFD Area, under Alternative C

RFD Area	Leasing Stipulation	Total Acreage	Largest Single Limiting Factor[2]	Acreage	% Total Acreage
Blanding Sub-basin	Standard	254,706	Alkalinity	214,035	84.0
	Special	142,314	Alkalinity	117,263	82.4
	NSO, Open to ME[1]	8,213	Alkalinity	7,316	89.1
	Subtotals	**405,233**		**338,614**	**83.6**
Monument Upwarp	Standard	293,201	Alkalinity	207,717	70.8
	Special	407,984	Alkalinity	298,098	73.1
	NSO, Open to ME[1]	25,171	Alkalinity	24,069	95.6
	Subtotals	**726,356**		**529,884**	**73.0**
Paradox Fold and Fault Belt	Standard	81,564	Rooting Depth	64,994	79.7
	Special	169,204	Rooting Depth	124,877	73.8
	NSO, Open to ME[1]	5,939	Rooting Depth	5,283	89.0
	Subtotals	**256,707**		**195,154**	**76.0**
TOTALS		**1,388,296**		**1,063,652**	**76.6**

1. NSO, Open to ME = No Surface Occupancy but Open to Mineral Entry.
2. Possible limiting factors are water erosion, wind erosion, droughty soils, excess salt, excess sodium, rooting depth, and alkalinity.

Under Alternative C, the impacts of requiring a plan for slopes between 21% and 40% and implementing the Gold Book Standards (BLM and FS 2005) would be the same as Alternative B. Implementing surface disturbing mineral resource development on slopes over 40% is still generally disallowed under Alternative C, but if re-siting would cause "undue or unnecessary degradation" it may be allowed. Therefore, the negative, minor impacts of Alternative C on mineral resource development on slopes above 40% are similar in type to Alternative B but somewhat less in magnitude.

4.3.7.5.3.7. Impacts of Special Designations Decisions on Mineral Resource Development Under Alternative C

Under Alternative C, 76,764 acres of BLM lands would occur in ACECs (Table 4.53). In all, 41,876 of these acres are subject to NSO or closed to leasing. If 4,602 acres (out of 41,876 acres) are automatically closed to leasing because they are located in WSAs, we assume that the remainder—37,274 acres—has been limited to mineral resource development as a direct result of designation of the ACECs (see Table 4.53). Therefore, for the purposes of this analysis, implementation of Alternative C represents a closure of 2.1% of all BLM lands (37,274 acres) due to ACEC designation. ACEC designation under Alternative C has less of a negative impact on mineral resource development than it does under the No Action Alternative (about 4.6% less) or under Alternative B (about 2.8% less).

Under Alternative C, Colorado River Segments #2 and #3 and the Dark Canyon segment, a total of 3,968 acres, are recommended suitable for WSR designation. As the suitable segments would be managed as VRM I and II, these recommendations would effectively make these areas unavailable for leasing. This acreage accounts for a 0.2% decrease in BLM lands available for optimal mineral resource development in comparison with the No Action Alternative. Accordingly, this would result in essentially the same potential mineral resource development as the No Action Alternative.

4.3.7.5.3.8. Impacts of Special Status Species and Other Wildlife and Fisheries Decisions on Mineral Resource Development Under Alternative C

<u>Gunnison Sage-grouse</u>

Impacts to mineral resource development under Alternative C would be of the same type and quality as under Alternative B, except that the lek habitat buffer zone would be slightly smaller (i.e., a 0.6-mile buffer around lek habitat under Alternative C, compared with a 2.0-mile buffer in Alternative B), in favor of mineral resource exploration and development.

Table 4.53. Acreages of Existing and Potential ACECs that are Available to Mineral Resource Development, if Designated under Alternative C

ACEC	Acres			VRM Outside WSA[2]	Lease Stipulation (Acres)				Other Activities Outside WSAs		
	Total	Within WSA[1]	Outside WSA		Standard	Special	NSO	Closed	Entry?	Disposal?	Geophysical?
EXISTING											
Alkali Ridge	39,196	--	39,196	IV	6,032	31,018	2,146	0	yes	yes	yes
(Alkali Ridge NHL)	(2,146)	--	(2,146)	NA	(0)	(0)	(2,146)	(0)	no	no	yes
Bridger Jack Mesa	0	NA	NA	NA	13	0	0	6,212	… NOT DESIGNATED ACEC …		
Butler Wash North	0	NA	NA	NA	179	35	0	17,152	… NOT DESIGNATED ACEC …		
Cedar Mesa C-SRMA[4]	0	NA	NA	NA	77,889	32,489	15	196,349	… DESIGNATED C-SRMA …		
(Grand Gulch SEA)	(4,240)	(4,240)	--	NA	(0)	(0)	(0)	(4,240)	--	--	--
(Valley of the Gods SEA)	22,863										
(Scenic Highway Corridor)	0										
Dark Canyon	0	NA	NA	NA	0	85	0	61,574	… NOT DESIGNATED ACEC …		
Hovenweep	2,439	--	2,439	III	2,412	0	0	0	yes	no	yes
Indian Creek/Lockhart Basin	56,293	6,423	49,870	NA	5,590	37,945	5,170	7,588	--	--	--
(Indian Creek)	(3,905)	(0)	(3,905)	I	(0)	(1)	(3,907)	(4,602)	no	no	yes
(Lockhart Basin)	(0)	NA	NA	III	(5,590)	(37,944)	(1,263)	(2,986)	… NOT DESIGNATED ACEC …		
Lavender Mesa	649	--	649	II	0	0	649	0	yes	--	yes
POTENTIAL											
(Lockhart Basin)	… SEE EXISTING …										
San Juan River[3]	7,590	--	7,590	I, II, III (Var.)	0	0	4,860	2,730	no	no	--
Shay Canyon	119	--	119	II	0	0	119	0	yes	no	yes
Valley of the Gods	22,863	--	22,863	I	0	0	22,863	0	--	no	--

"NA" and "–" both mean Not Applicable. Items in parenthesis are subsets of the first number above that is *not* in parenthesis.

1. Always VRM I, or closed to leasing.
2. According to Alternatives Matrix in Chapter 2, if specified.
3. To be managed as SRMA in this alternative.
4. Portions of Cedar Mesa ACEC lie within eight WSAs.

Bighorn Sheep Lambing and Rutting

The bighorn lambing and rutting seasons are shorter under Alternative C than they are under the No Action Alternative and Alternative B (30 days shorter for lambing and 16 days shorter for rutting; Table 4.54). Under Alternative C, the lambing timing restrictions would occur on 415,395 acres of crucial lambing habitat (or 23.3% of all BLM lands). This area is larger than that designated under the No Action Alternative (by 85,645 acres, or 26.0%), but smaller than that designated under Alternative B (by 37,993 acres, or 8.4%). Because Alternative C's lambing timing limitations are less than the No Action Alternative while the crucial habitat is greater, it cannot be determined whether the net, negative impacts on mineral resource development from Alternative C are more or less than the No Action Alternative. However, the impacts on mineral resource development from Alternative C are definitively less in magnitude than Alternative B, due to the smaller acreage of habitat and the shortened duration of the timing limitations.

Under Alternative C, the rutting timing restrictions would occur across a habitat area that is essentially the same size as under Alternative B. Because Alternative C's rutting timing limitations are less than the No Action Alternative while its crucial habitat acreage is greater, it cannot be determined whether the net, negative impacts on mineral resource development from Alternative C are more or less than the No ActionAlternative. However, the impacts on mineral resource development from Alternative C are definitively less than Alternative B, due to the shortened duration of the timing limitations under Alternative C.

Pronghorn Fawning Area

Under Alternative C, impacts on mineral resource development due to pronghorn decisions would be the same as under Alternative B.

Deer Winter Range

Under Alternative C, on the 266,406-acre deer crucial winter range (or 14.9% of all BLM lands), the special conditions described in Chapter 2 would be enforced for 181 days of critical winter use (see Table 4.54). These management decisions would result the same type and quality of impacts to mineral resource development as are described under the No Action Alternative, but to a greater degree. Alternative C results in greater impacts both in terms of the larger area being restricted as winter range (larger by 68,856 acres, or 34.9% compared to the No Action Alternative) and the longer duration of enforcement of the restrictions (longer by 30 days, or 16.6% compared to the No Action Alternative).

Elk

Under Alternative C, on the 97,471-acre elk crucial winter range (or 5.5% of all BLM lands), the special conditions described in Chapter 2 would be enforced for 181 days of critical winter use (see Table 4.54). These management decisions would result in the same type and quality of impacts to mineral resource development as are described under Alternative B, but to a lesser degree. Alternative C results in fewer impacts both in terms of the smaller area being restricted as winter range (smaller by 93,702 acres, or 49.0% compared to Alternative B) and the shorter duration of enforcement of the restrictions (shorter by 15 days, or 7.7% compared to Alternative B).

Table 4.54. Additional Seasonal Restrictions within Established Buffer Zones Applied to Mineral Resource Development under Alternative C

Species	Dates	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
Gunnison sage-grouse leks (0.6 miles)																									
Non-disturbing geophysical work	3/20 – 5/15						■	■	■	■															
All permitted activities (dawn hours)	3/20 – 5/15						■	■	■	■															
Bighorn – Lambing (415,395 acres)	4/1 – 6/15							■	■	■	■	■													
Bighorn – Rutting (453,390 acres)	10/15 – 12/15																				■	■	■	■	
Pronghorn – Fawning (29,365 acres)	5/1 – 6/15									■	■	■													
Deer – Winter use (266,406 acres)	11/15 – 4/15	■	■	■	■	■	■	■															■	■	■
Elk – Winter use (97,471 acres)	11/15 – 4/15	■	■	■	■	■	■	■															■	■	■

In all, wildlife decisions necessitating special stipulations would impact various acreages at various times of the year. Under Alternative C, no wildlife related timing limitations would be enforced on any acreage from June 15 through October 15 (122 days). This amounts to less restriction to mineral resource development compared to Alternative B and the No Action Alternative, in the form of an additional month of mineral resource development without wildlife related timing limitations. At the other end of the spectrum, restrictions from November 15 through December 15 would be enforced on up to 729,567 acres (or 41% of all BLM lands, assuming overlap; see Table 4.41) under Alternative C[1]. This maximum is less restrictive than Alternative B but more restrictive than Alternative D.

4.3.7.5.3.9. Impacts of Vegetation Management Decisions on Mineral Resource Development Under Alternative C

Impacts on mineral resource development under Alternative C would be essentially the same as under the No Action Alternative, except that fewer acres of vegetation would be treated (1,500 acres/year). Although only the vegetation of the Lavender Mesa ACEC would be protected, the area of the Bridger Jack Mesa ACEC—in which surface disturbance would be allowed—is such a small proportion of the total planning area that the impacts at the PA-wide level would be essentially the same at approximately 0.03%

4.3.7.5.3.10. Impacts of Visual Resource Decisions on Mineral Resource Development Under Alternative C

Under Alternative C, approximately 425,179 acres (or 23.8% of BLM lands) would fall into the VRM I class, and in these areas, mineral resource development would be subject to NSO or closed to leasing because of the restrictions on surface disturbance in this VRM class.

Adverse impacts under Alternative C would be of the same type as the No Action Alternative, for the same reasons. The magnitude of these impacts would be greater than Alternative A (by 2.9%) but less than Alternative B.

4.3.7.5.4. ALTERNATIVE D

4.3.7.5.4.1. Impacts of Cultural Resource Decisions on Mineral Resource Development Under Alternative D

Under Alternative D, Comb Ridge would not be managed as a CSMA and no cultural resource decisions affecting mineral resource development are specified. Therefore, impacts on the mineral resource development of Comb Ridge under Alternative D would be the same as impacts under the No Action Alternative. Under Alternative D, Tank Bench would not be managed as a CSMA; however, the impacts on mineral resource development would be the same as under Alternative C. Under Alternative D, impacts to development of mineral resources underlying the Grand Gulch Historic District would be the same as Alternative B, except that "casual use"

[1] The maximum of 729,567 acres was derived from the acres subject to special stipulations in Table 4.41, rather than the maximum acreage in Table 4.54 (which would have been 817,267 acres, assuming no overlap). As 817,267 acres is greater than the acreage subject to special stipulations in Table 4.41 (729,567 acres), it is evident that there is considerable overlap among the various habitats. Therefore, at the most limited time of November 15–December 15, the maximum acreage that can be assumed is the one in Table 4.41.

geophysical exploration (as defined under 43 CFR § 3150; see Chapter 2) would be allowed, resulting in negligible but beneficial impacts in the form of improvements in the accuracy and amount of data and knowledge on the mineral resource reserves underlying the historic district.

4.3.7.5.4.2. Impacts of Lands and Realty Decisions on Mineral Resource Development Under Alternative D

Under Alternative D, approximately 47,124 acres (or 2.6% of all BLM lands) would be recommended for withdrawal from mineral entry. This decision would result in a very low level of adverse impacts to mineral resource development (see Alternative A for impact types and forms), similar to Alternative C.

4.3.7.5.4.3. Impacts of Mineral Decisions on Mineral Resource Development Under Alternative D

Oil and Gas Resources

In total, approximately 1,383,283 acres of BLM lands within the Monticello FO would be administratively open for oil and gas leasing under standard and special lease stipulations, within the three RFD development areas (see Table 4.41). Based on the proportion of BLM lands open for leasing and the RFD (BLM 2005d), it is estimated that 75 predicted oil and gas wells would be drilled over the life of the RMP (Table 4.55; Map 26; BLM 2005c). This alternative would result in an increase of approximately 145,053 acres available for development (or 11.7%) and an increase of 2 predicted oil and gas wells (or 2.7%) compared to the No Action Alternative. See the socioeconomic analysis in this chapter (Section 4.3.12, Socioeconomic Resources) for the projected yield of oil and gas for Alternative D.

Of all the alternatives, Alternative D represents the largest amount of land open for mineral resource development, under the least restrictive terms; Alternative D has the most land available under standard stipulations (at approximately 962,300 acres, or 69.6% of available lands) and represents a substantial increase in lands available under standard stipulations over the No Action Alternative—an increase of nearly 383,700 acres, or 66.3%. The shift toward standard stipulations under Alternative D also requires lowering the proportion of available lands subject to special stipulations from 53.3% of available lands under the No Action Alternative to 30.4% of available lands under Alternative D (see Table 4.55).

Oil and gas development would occur in all three RFD areas. Similar to the No Action Alternative, the Monument Upwarp RFD area would see the least amount of development in terms of wells (i.e., 9), despite having the most lands administratively open to development. Also similar to the No Action Alternative, most wells (i.e., 41) would be drilled in the Blanding Sub-basin RFD area. Between the No Action Alternative and Alternative D, leasing stipulations appear to have shifted out of special stipulations and into standard stipulations, particularly in the Monument Upwarp and Blanding Sub-basin RFD areas. It also appears that the acreage difference between the No Action Alternative and Alternative D can be found almost entirely within the Monument Upwarp RFD area: there is a difference of almost 141,000 acres between the No Action Alternative and Alternative D in the Monument Upwarp RFD area, while the other two RFD areas stay about the same size.

Table 4.55. Predicted Oil and Gas Wells and Geophysical Exploration on BLM Lands within RFD Areas under Alternative D, Average over the Life of the Plan (LOP) and Maximum per Year (MPY)

RFD Area	Acres of BLM Lands Available			% of BLM Lands Available	Predicted Wells*	Geophysical Exploration	
	Standard	Special	Total			Linear Miles of Source Line	Acres
AVERAGE OVER THE LIFE OF THE PLAN (LOP)							
Paradox Fold and Fault Belt	153,496	104,374	257,870	100	25	277	504
Blanding Sub-basin	303,258	94,233	397,491	98	41	205	271
Monument Upwarp	505,529	222,393	727,922	99	9	103	149
LOP TOTAL	**962,283**	**421,000**	**1,383,283**		**75**	**585**	**924**
MAXIMUM PER YEAR (MPY)**							
Paradox Fold and Fault Belt	***	***	***	***	3	25	46
Blanding Sub-basin	***	***	***	***	4	14	25
Monument Upwarp	***	***	***	***	1	8	14
MPY TOTAL	*****	*****	*****		**8**	**47**	**85**

Note: Calculations based on BLM lands only.

*Oil and natural gas wells are considered together.

**Based on the RFD (BLM 2005d), MPY reflects the maximum development that *could* occur in *any given year* of the life of the Plan. During most Plan years, development per year will be less than this maximum. To find the *average* development per year, take the value of interest in the first part of the table, Average over the Life of the Plan (LOP), and divide the value by 15, which is the number of years the Plan is expected to be in effect.

*** Same as corresponding value under Average Over the Life of the Plan (LOP).

Ultimately, under Alternative D, the direct impacts of mineral resource development decisions on oil and gas production would be beneficial, but negligible, compared to the No Action Alternative. A very small increase in the potential number of oil and gas wells under Alternative D (a 2.7% increase) would lead to a very small increase in the available supply of oil and/or natural gas and in royalties (see Section 4.3.12, Socioeconomic Resources).

Geophysical Exploration

Under Alternative D, approximately 585 linear miles of source line for 2-D and 3-D geophysical exploration would be conducted over the life of the RMP for the purposes outlined in Section 4.3.7.2, Summary of Geophysical RFD and would result in approximately 924 acres of surface disturbance over the life of the RMP. This exploration would result in beneficial impacts to mineral resource development of the same type and quality described in Section 4.3.7.2, for the same reasons (BLM 2005d), to a greater degree than the No Action Alternative. Under Alternative D, 26 more miles of source line (an increase of 4.7%) would be used compared to the No Action Alternative. Geophysical exploration would occur in all three RFD areas, as detailed in Table 4.55.

Other Leasable Resources

Although 1,348,973 acres of BLM land would be administratively open under Alternative D for the leasing of potash and salt and tar sands (an increase of approximately 110,743 acres, or compared to the No Action Alternative), because the level of development expected is so low, impacts on potash and salt and tar sands leasing because of mineral resource development decisions would be nearly identical to those described under the No Action Alternative.

Locatable Resources

Approximately 1,739,389 acres of BLM land would be open under Alternative D to mineral entry of uranium-vanadium, copper, gold, and limestone, an increase of nearly 64,332 acres, or 3.8% compared to the No Action Alternative. Impacts on locatable resources would be beneficial compared to the No Action Alternative, due to the increased acreage available for the development of these resources.

Saleable Resources

Approximately 1,383,277 acres of BLM land would be open to development of sand and gravel, building stone, and clay under Alternative D (Map 21). This represents a decrease of nearly 6,000 acres (0.4%) compared to the No Action Alternative. Impacts under Alternative D would be essentially the same as those described for the No Action Alternative.

4.3.7.5.4.4. Impacts of Management of Non-WSA Lands with Wilderness Characteristics on Mineral Resource Development Under Alternative D

Impacts under Alternative D would be the same as under Alternative A, for the same reasons.

4.3.7.5.4.5. Impacts of Recreation Decisions on Mineral Resource Development Under Alternative D

Under Alternative D, recreation decisions regarding the 10,203-acre San Juan River SRMA and the 375,734-acre Cedar Mesa Cultural SRMA would result in essentially the same impacts that would occur under Alternative B.

4.3.7.5.4.6. Impacts of Soils and Watershed Decisions on Mineral Resource Development Under Alternative D

Under Alternative D, a minimum of 1,069,495 acres of BLM lands open to surface disturbing mineral resource development (or 76.5% of available BLM lands) are overlain by sensitive soils with medium and high limitations (Table 4.56). The particular requirements and limitations on such mineral resource development and the resulting impacts on mineral resource development would be the same as those under the No Action Alternative.

Table 4.56. Minimum Acreages of High- and Medium-risk Sensitive Soils within Lands Open to Surface Disturbing Mineral Resource Development, by RFD Area, under Alternative D

RFD Area	Leasing Stipulation	Total Acreage	Largest Single Limiting Factor[2]	Acreage	% Total Acreage
Blanding Sub-basin	Standard	303,258	Alkalinity	249,443	82.3
	Special	94,233	Alkalinity	82,372	87.4
	NSO, Open to ME[1]	8,936	Alkalinity	7,291	81.6
	Subtotals	**406,427**		**339,106**	**83.4**
Monument Upwarp	Standard	505,529	Alkalinity	357,781	70.8
	Special	222,393	Alkalinity	171,730	77.2
	NSO, Open to ME[1]	5,240	Alkalinity	4,755	90.7
	Subtotals	**733,162**		**534,266**	**72.9**
Paradox Fold and Fault Belt	Standard	153,496	Rooting Depth	122,329	79.7
	Special	104,374	Rooting Depth	73,794	70.7
	NSO, Open to ME[1]	0	—	0	—
	Subtotals	**257,870**		**196,123**	**76.1**
TOTALS		**1,397,459**		**1,069,495**	**76.5**

1. NSO, Open to ME = No Surface Occupancy but Open to Mineral Entry.
2. Possible limiting factors are water erosion, wind erosion, droughty soils, excess salt, excess sodium, rooting depth, and alkalinity.

Under Alternative D, the impacts of requiring a plan only for slopes greater than 40% would be the same as Alternatives B and C in type. However, the impacts under Alternative D would be much less than Alternatives B and C in magnitude.

4.3.7.5.4.7. Impacts of Special Designations Decisions on Mineral Resource Development Under Alternative D

Under Alternative D, zero acres of BLM lands would be designated as ACECs (Table 4.57). Though management prescriptions are made for these parcels of land (e.g., leasing and VRM categories, whether to allow minerals entry, disposal, or geophysical work) none of these prescriptions are associated with an ACEC designation. Therefore, under Alternative D, special designation decisions regarding ACECs would have no impacts on mineral resource development.

Under Alternative D, none of the river segments recommended for WSR designation in other alternatives are recommended suitable. Therefore, under Alternative D, WSR decisions would cause no impacts on mineral resource development.

4.3.7.5.4.8. Impacts of Special Status Species and Other Wildlife and Fisheries Decisions on Mineral Resource Development Under Alternative D

Gunnison Sage-grouse

Impacts to mineral resource development under Alternative D would be of the same type and quality as under Alternative B, except that the reserved year-round habitat would be slightly smaller (at 2,877 acres, which is a decrease of 1,647 acres, or 36.4%, compared to Alternative B) and that the lek habitat buffer zone would be slightly smaller (i.e., 0.25-mile buffer around lek habitat under Alternative D, compared with the 2.0-mile buffer in Alternative B). Of all the action alternatives, Alternative D represents the fewest Gunnison sage-grouse related restrictions on mineral resource exploration, development, and production.

Bighorn Sheep Lambing and Rutting

The bighorn lambing and rutting seasons under Alternative D are identical to those under Alternative C (i.e., shorter than under the No Action Alternative and Alternative B; Table 4.58). Under Alternative D, the lambing and rutting timing restrictions would occur on 299,009 acres of crucial habitat (or 16.8% of all BLM lands). This area is smaller than that designated under the No Action Alternative (by 30,741 acres, or 9.3%), smaller than that designated under Alternative B (by 154,379 acres, or 34.1%), and smaller than that designated under Alternative C (by at least 116,386 acres, or 28.0%), making Alternative D by far the least restrictive to mineral resource exploration, development and production in terms of wildlife decisions of both timing limitations and habitat acreage restrictions. Nonetheless, impacts from these wildlife decisions would be of the type and quality described under the No Action Alternative.

Pronghorn Fawning Area

Under Alternative D, impacts on mineral resource development from pronghorn decisions would be the same in type and quality as under Alternative B, except they would occur over a smaller area: 13,961 acres (or 1.0% of all BLM lands; see Table 4.58). This crucial habitat area is approximately 1,000 acres (7.7%) larger than it is under the No Action Alternative but approximately 15,400 acres (52.5%) smaller than under Alternatives B and C. Ultimately, impacts would be greater than under the No Action Alternative but less than under Alternatives B and C.

Table 4.57. Acreages of Existing and Potential ACECs that are Available to Mineral Resource Development, if Designated under Alternative D

ACEC	Acres			VRM Outside WSA[2]	Leasing Stipulation				Other Activities Outside WSAs		
	Total	Within WSA[1]	Outside WSA		Standard	Special	NSO	Closed	Entry?	Disposal?	Geophysical?
EXISTING											
Alkali Ridge	0	NA	NA	NA	12,951	24,098	2,146	0	… NOT DESIGNATED ACEC …		
(Alkali Ridge NHL)	0	NA	NA	NA	(0)	(0)	(2,146)	(0)	no	no	yes
Bridger Jack Mesa	0	NA	NA	NA	0	0	0	6,212	… NOT DESIGNATED ACEC …		
Butler Wash North	0	NA	NA	NA	183	30	0	17,152	… NOT DESIGNATED ACEC …		
Cedar Mesa C-SRMA[4]	0	NA	NA	NA	107,355	3,038	0	196,349	… DESIGNATED C-SRMA …		
(Grand Gulch SEA)	0	NA	NA	NA	(0)	(0)	(0)	(4,240)	--	--	--
(Valley of the Gods SEA)				NA							
(Scenic Highway Corridor)				NA							
Dark Canyon	0	NA	NA	NA	232	101		61,326	… NOT DESIGNATED ACEC …		
Hovenweep				NA	2,412	0	0	0	yes	yes	yes
Indian Creek/Lockhart Basin	0	NA	NA	NA	--	--	--	--	--	--	--
(Indian Creek)	0	NA	NA	NA	107	3,802	0	4,602	… NOT DESIGNATED ACEC …		
(Lockhart Basin)	0	NA	NA	NA	5,938	40,024	0	1,821	… NOT DESIGNATED ACEC …		
Lavender Mesa	0	NA	NA	NA	649	0	0	0	… NOT DESIGNATED ACEC …		
POTENTIAL											
(Lockhart Basin)	… SEE EXISTING …										
San Juan River[3]	… NOT DESIGNATED ACEC …			II	0	0	7,590	0	--	no	--
Shay Canyon	0	--	119	III	119	0	0	0	… NOT DESIGNATED ACEC …		
Valley of the Gods	0	--	22,863	III	22,863	0	0	0	… NOT DESIGNATED ACEC …		

"NA" and "–" both mean Not Applicable. Items in parenthesis are subsets of the first number above that is *not* in parenthesis.

1. Always VRM I, or closed to leasing.
2. According to Alternatives Matrix in Chapter 2, if specified.
3. To be managed as SRMA in this alternative.
4. Portions of Cedar Mesa ACEC lie within eight WSAs.

Table 4.58. Additional Seasonal Restrictions within Established Buffer Zones Applied to Mineral Resource Development under Alternative D

Species	Dates	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
Gunnison sage-grouse leks (0.25 miles)																									
Non-disturbing geophysical work	3/20 – 5/15						■	■	■	■															
Minerals Ops activities (dawn hours)	3/20 – 5/15						■	■	■	■															
Bighorn – Lambing (299,009 acres)	4/1 – 6/15							■	■	■	■	■													
Bighorn – Rutting (299,009 acres)	10/15 – 12/15																				■	■	■	■	
Pronghorn – Fawning (13,961 acres)	5/1 – 6/15									■	■	■													
Deer – Winter use (182,315 acres)	12/1 – 4/15	■	■	■	■	■	■	■																■	■
Elk – Winter use (62,484 acres)	12/1 – 4/15	■	■	■	■	■	■	■																■	■

Deer Winter Range

Under Alternative D, on the 182,315-acre deer crucial winter range (or 10.2% of all BLM lands), the special conditions described in Chapter 2 would be enforced for 136 days of critical winter use (see Table 4.58). These management decisions would result the same type and quality of impacts on mineral resource development as are described under the No Action Alternative, but to a lesser degree. Alternative D results in fewer impacts both in terms of the smaller area being restricted as winter range (smaller by 15,235 acres, or 7.7% compared to the No Action Alternative) and the shorter duration of enforcement of the restrictions (shorter by 15 days, or 9.9%, compared to the No Action Alternative). Therefore, of all the alternatives, Alternative D represents the least amount of restriction to mineral resource development due to deer winter range decisions.

Elk

Under Alternative D, on the 62,484-acre elk crucial winter range (or 3.5% of all BLM lands), the special conditions described in Chapter 2 would be enforced for 136 days of critical winter use (see Table 4.58). These management decisions would result the same type and quality of impacts on mineral resource development as are described under Alternative B, but to a much lesser degree. Alternative D would result in fewer impacts to mineral resource development both in terms of the smaller area being restricted as winter range (smaller by 128,689 acres, or 67.3%, compared to Alternative B) and the shorter duration of enforcement of the restrictions (shorter by 60 days, or 30.6%, compared to Alternative B). Elk management decisions under Alternative E would result in the least impacts on mineral resource development of all the alternatives.

In all, wildlife decisions necessitating special stipulations would impact various acreages at various times of the year. Under Alternative D, no wildlife related timing limitations would be enforced on any acreage from June 15 through October 15—identical to Alternative C (122 days). At the other end of the spectrum, restrictions from April 1–15 and from December 1–15 would be enforced on up to 420,998 acres (or 23.6% of all BLM lands, assuming overlap; see Table 4.41) under Alternative D.[2] This acreage represents the least restriction of mineral resource development of all the alternatives.

4.3.7.5.4.9. Impacts of Vegetation Management Decisions on Mineral Resource Development Under Alternative D

Under Alternative D, no relict or near relict vegetation would be protected. Therefore, no impacts on mineral resource development would result from vegetation management decisions.

[2] The maximum of 420,998 acres was derived from the acres subject to special stipulations in Table 4.41, rather than the maximum acreage in Table 4.55 (which would have been 543,808 acres, assuming no overlap). As 543,808 acres is greater than the acreage subject to special stipulations in Table 4.41 (420,998 acres), it is evident that there is considerable overlap among the various habitats. Therefore, at the most limited times of April 1–15 and December 1–15, the maximum acreage that can be assumed is the one in Table 4.41.

4.3.7.5.4.10. Impacts of Visual Resource Decisions on Mineral Resource Development Under Alternative D

Under Alternative D, approximately 390,424 acres (or 21.9% of BLM lands) would fall into the VRM I class, and in these areas, mineral resource development would be subject to NSO or closed to leasing because of the restrictions on surface disturbance in this VRM class.

Of the action alternatives, Alternative D most closely resembles the No Action Alternative. Adverse impacts under Alternative D would be of the same type as the No Action Alternative, for the same reasons. The magnitude of these impacts would be greater than Alternative A (by 1.0%) but less than Alternatives B and C.

4.3.7.5.5. ALTERNATIVE E

4.3.7.5.5.1. Impacts of Cultural Resource Decisions on Mineral Resource Development Under Alternative E

Impacts under Alternative E would be the same as under Alternative B, except that the 38,012-acre Comb Ridge CSMA would be closed to mineral resource development instead of subject to NSO. This additional restriction on mineral resource development from cultural resource decisions would be a more adverse impact on mineral resource development than Alternative B, as not even directional drilling would be allowed in this CSMA.

4.3.7.5.5.2. Impacts of Lands and Realty Decisions on Mineral Resource Development Under Alternative E

Under Alternative E, approximately 582,357 acres of non-WSA lands with wilderness characteristics would be managed as exclusion areas for ROWs. This would limit mineral production and access for exploration. Existing production could be limited by not allowing needed ROWs. Non-WSA lands with wilderness characteristics would also be recommended for withdrawal from mineral entry, prohibiting development of uranium-vanadium, copper, gold, and limestone on 582,357 acres.

4.3.7.5.5.3. Impacts of Mineral Decisions on Mineral Resource Development Under Alternative E

<u>Oil and Gas Resources</u>

In total, approximately 758,931 acres of BLM lands within the Monticello FO would be administratively open for oil and gas leasing under standard and special lease stipulations, within the three RFD development areas (see Table 4.41). Based on the proportion of BLM lands open for leasing and the RFD (BLM 2005d), it is estimated that 54 predicted oil and gas wells would be drilled over the life of the RMP (Table 4.59; Map 27; BLM 2005c). This alternative would result in a decrease of approximately 479,300 acres available for development (or 38.7%) and a decrease of 19 predicted oil and gas wells (or 26.0%) compared to the No Action Alternative. See the socioeconomic analysis in this chapter (Section 4.3.12, Socioeconomic Resources) for the projected yield of oil and gas for Alternative E.

Table 4.59. Predicted Oil and Gas Wells and Geophysical Exploration on BLM Lands within RFD Areas under Alternative E, Average over the Life of the Plan (LOP) and Maximum per Year (MPY)

RFD Area	Acres of BLM Lands Available			% of BLM Lands Available	Predicted Wells*	Geophysical Exploration	
	Standard	Special	Total			Linear Miles of Source Line	Acres
AVERAGE OVER THE LIFE OF THE PLAN (LOP)							
Paradox Fold and Fault Belt	21,584	132,087	153,671	60	15	165	301
Blanding Sub-basin	130,253	217,905	348,158	86	36	179	237
Monument Upwarp	61,451	195,648	257,099	35	3	36	53
LOP TOTAL	**213,288**	**545,640**	**758,928**		**54**	**380**	**591**
MAXIMUM PER YEAR (MPY)**							
Paradox Fold and Fault Belt	***	***	***	***	2	15	28
Blanding Sub-basin	***	***	***	***	4	12	22
Monument Upwarp	***	***	***	***	1	3	5
MPY TOTAL	*****	*****	*****		**7**	**30**	**55**

Note: Calculations based on BLM lands only.

*Oil and natural gas wells are considered together.

**Based on the RFD (BLM 2005d), MPY reflects the maximum development that *could* occur in *any given year* of the life of the Plan. During most Plan years, development per year will be less than this maximum. To find the *average* development per year, take the value of interest in the first part of the table, Average over the Life of the Plan (LOP), and divide the value by 15, which is the number of years the Plan is expected to be in effect.

*** Same as corresponding value under Average Over the Life of the Plan (LOP).

By far, Alternative E would result in the most adverse impacts on mineral resource development, compared to the No Action Alternative. One contributing factor in the decrease of acres available and wells (compared to the No Action Alternative) is that Alternative E has the smallest acreage of BLM lands available under standard stipulations (the most open stipulations), of all the alternatives. Under this alternative, approximately 28% of all open BLM lands would be available under standard stipulations, and approximately 72% of all open BLM lands would be subject to specials. However, the greatest contributing factor in the decrease of acres available and wells is the closure of lands with wilderness characteristics (LWCs) under Alternative E.

Oil and gas development likely would occur in all three RFD areas, but most years, the Monument Upwarp RFD area would see no development in terms of wells (see Table 4.59). Alternative E is the only alternative in which the Monument Upwarp RFD area has fewer lands open to leasing than another RFD area—specifically, the Blanding Sub-basin RFD area. Indeed, the Blanding Sub-basin RFD area is the area that changes least in terms of acres available under Alternative E compared to the No Action Alternative; the Blanding Sub-basin RFD area is only 49,909 acres smaller under Alternative E. Similar to the No Action Alternative, most wells (36) would be drilled in the Blanding Sub-basin RFD area. In a comparison between Alternative E and the No Action Alternative, the notable difference between percentage of lands available and percentage of wells drilled over the life of the plan can be explained by the fact that many of the non-WSA lands with wilderness characteristics in the Monument Upwarp RFD Area, which already has a lower development potential than the other 2 RFD areas.

Ultimately, a decrease in the potential number of oil and gas wells under Alternative E (a 26% decrease) would lead to a decrease in the available supply of oil and/or natural gas. The federal government and/or the State of Utah would continue to receive royalties from the production and sale of oil and gas, though at lower rates than under the No Action Alternative (see Section 4.3.12, Socioeconomic Resources). However, the decreased number of predicted wells would also decrease the rate at which finite reserves of fossil fuel resources in the Monticello FO are extracted and consumed (compared to the No Action Alternative), which would have a beneficial impact on the long-term viability and availability of these resources.

Geophysical Exploration

Under Alternative E, approximately 380 linear miles of source line for 2-D and 3-D geophysical exploration would be conducted over the life of the RMP for the purposes outlined in Section 4.3.7.2, Summary of Geophysical RFD, and would result in approximately 591 acres of surface disturbance over the life of the RMP. This exploration would result in beneficial impacts to mineral resource development of the same type and quality described in Section 4.3.7.2, for the same reasons (BLM 2005d). However, less exploration would happen under Alternative E than under the No Action Alternative: 179 fewer miles of source line (a decrease of 32.0%) would be used under Alternative E compared to the No Action Alternative. Geophysical exploration would occur in all three RFD areas, as detailed in Table 4.59.

Other Leasable Resources

Although 758,929 acres of BLM land would be administratively open under Alternative E for the leasing of potash and salt and tar sands (a decrease of approximately 479,301 acres, or 39%, compared to the No Action Alternative), because the level of development expected is so low,

impacts on potash and salt and tar sands leasing from mineral resource development decisions would be the same as impacts under the No Action Alternative.

Locatable Resources

Approximately 1,015,384 acres of BLM land would be open under Alternative E to mineral entry of uranium-vanadium, copper, gold, and limestone, a decrease of approximately 659,673 acres, compared to the No Action Alternative. Impacts of locatable resource decisions under this alternative would be essentially the same as those described for the No Action Alternative, except that there would be slightly less acreage available for the development of these resources.

Saleable Resources

Approximately 758,931 acres of BLM land would be open to development of sand and gravel, building stone, and clay under Alternative E (Map 22). This represents a decrease of approximately 630,324 acres compared to the No Action Alternative. Impacts of saleable resource decisions under this alternative would be essentially of the same form and type as those described for the No Action Alternative, except that they would be more adverse under Alternative E.

4.3.7.5.5.4. Impacts of Management of Non-WSA Lands with Wilderness Characteristics on Mineral Resource Development Under Alternative E

Under Alternative E, approximately 582,357 acres of non-WSA lands with wilderness characteristics (or 32.6%) would be managed managed as closed to mineral leasing, proposed for withdrawal from mineral entry, ROW exclusion area, closed to disposal of mineral materials, and managed as VRM I.

These management decisions would have an adverse impact on mineral resource development. Fewer lands would be available for oil and gas leasing and subsequent mineral resource development; this would result in fewer wells drilled over the life of the RMP. Adverse impacts on mineral entry could occur because 32.6% fewer acres would be available for development of locatable minerals, resulting in less mining activity and less production of uranium-vanadium, copper, and placer gold.

4.3.7.5.5.5. Impacts of Recreation Resource Decisions on Mineral Resource Development Under Alternative E

Impacts from recreation decisions under Alternative E would be the same as under Alternative B. Impacts of recreation decisions under Alternative E would result in an adverse impact compared to the No Action Alternative, of essentially the same magnitude as Alternative B. Non-WSA lands with wilderness characteristics which would be closed to leasing, occur within many SRMAs, but these closures are not a result of recreation decisions.

4.3.7.5.5.6. Impacts of Soils and Watershed Decisions on Mineral Resource Development Under Alternative E

Under Alternative E, a minimum of 659,170 acres of BLM lands open to surface disturbing mineral resource development (or 81.1% of open BLM lands) are overlain by sensitive soils with medium and high limitations (Table 4.60). The particular requirements and limitations on such

mineral resource development and the resulting impacts on mineral resource development would be the same as those under the No Action Alternative; however, Alternative E is unique because, while it reflects the lowest minimum acreage, it also reflects the highest percentage of open BLM lands overlain by sensitive soils.

Table 4.60. Minimum Acreages of High- and Medium-risk Sensitive Soils within Lands Open to Surface-disturbing Mineral Resource Development, by RFD Area, under Alternative E

RFD Area	Leasing Category	Total Acreage	Largest Single Limiting Factor[2]	Acreage	% Total Acreage
Blanding Sub-basin	Standard	130,253	Alkalinity	110,367	84.7
	Special	217,905	Alkalinity	182,198	83.6
	NSO, Open to ME[1]	21,427	Alkalinity	19,319	90.2
	Subtotals	**369,585**		**311,884**	**84.4**
Monument Upwarp	Standard	61,451	Alkalinity	42,971	69.9
	Special	195,648	Alkalinity	153,274	78.3
	NSO, Open to ME[1]	7,960	Droughty	7,678	96.5
	Subtotals	**265,059**		**203,923**	**76.9**
Paradox Fold and Fault Belt	Standard	21,584	Alkalinity	17,702	82.0
	Special	132,087	Rooting Depth	103,840	78.6
	NSO, Open to ME[1]	24,528	Droughty	21,821	89.0
	Subtotals	**178,199**		**143,363**	**80.5**
TOTALS		**812,843**		**659,170**	**81.1**

1. NSO, Open to ME = No Surface Occupancy but Open to Mineral Entry.
2. Possible limiting factors are water erosion, wind erosion, droughty soils, excess salt, excess sodium, rooting depth, and alkalinity.

Under Alternative E, impacts on areas of over 20% slope would be the same as under Alternative B, for the same reasons.

4.3.7.5.5.7. Impacts of Special Designations Decisions on Mineral Resource Development Under Alternative E

Under Alternative E, 521,141 acres of BLM lands would occur in ACECs (Table 4.61). In all, 432,145 of these acres are subject to NSO or closed to leasing. If 393,477 acres (out of 432,145 acres) are automatically closed to leasing because they are located in WSAs or are non-WSA lands with wilderness characteristics, we assume that the remainder—38,668 acres—has been limited to mineral resource development as a direct result of designation of the ACECs (see Table 4.61). Therefore, for the purposes of this analysis, implementation of Alternative E represents a limitation of 2.2% of all BLM lands (38,668 acres) due to ACEC designation. ACEC designation under Alternative E has less of a negative impact on mineral resource development than it does under the No Action Alternative (about 4.5% less) or Alternative B (about 2.7% less). Alternative E is most like Alternative C in terms of impacts to mineral resource development from ACEC designation.

Table 4.61. Acreages of Existing and Potential ACECs that are Available to Mineral Resource Development, if Designated under Alternative E

ACEC	Acres			VRM Outside WSA and LWC[2]	Lease Stipulations (Acres)				Other Activities Outside WSAs		
	Total	Within WSA and LWC[1]	Outside WSA and LWC		Standard	Special	NSO	Closed	Entry?	Disposal?	Geophysical?
EXISTING											
Alkali Ridge	39,196	--	39,196	IV	0	37,050	2,146	0	--	--	--
(Alkali Ridge NHL)	… NOT SPECIFIED …										
Bridger Jack Mesa	6,225	6,214	11	I	0	5	0	6,220	yes	no	--
Butler Wash North	17,365	15,524	1,841	I	4	172	0	17,188	no	no	--
Cedar Mesa[3]	**306,743**	**254,879**	**51,864**	**III**	**21,524**	**27,779**	**2,560**	**254,879**	**--**	**--**	**--**
(Grand Gulch SEA)	(4,240)	(4,240)	--	NA	(0)	(0)	(0)	(4,240)	--	--	--
(Valley of the Gods SEA)	… SEE POTENTIAL …										
(Scenic Highway Corridor)	… NOT SPECIFIED …										
Dark Canyon	61,660	61,606	54	I	0	22	0	61,638	no	no	no
Hovenweep	2,439	--	2,439	III	2,412	0	0	0	yes	no	yes
Indian Crk/Lockhart Basin	56,293	31,608	24,685	I	0	0	24,508	31,785	no	no	--
(Indian Creek)	(8,510)	(8,489)	(21)	I	(0)	(0)	(21)	(8,489)	no	no	--
(Lockhart Basin)	(47,783)	(23,119)	(24,664)	I	(0)	(0)	(24,487)	(23,296)	no	no	--
Lavender Mesa	649	649	0	I	0	0	0	649	no	--	--
POTENTIAL											
(Lockhart Basin)	… SEE EXISTING …										
San Juan River[4]	7,590	2,155	5,435	I, II, III	0	0	3,567	4,023	no	no	--
Shay Canyon	119	99	20	I	0	0	20	99	no	no	no
Valley of the Gods	22,863	20,743	2,120	I	0	0	0	22,863	no	no	--

"NA" and "–" both mean Not Applicable. Items in parenthesis are subsets of the first number above that is *not* in parenthesis.

LWC = Lands with Wilderness Characteristics; bolded ACECs indicate those with LWCs.

1. Always VRM I, or closed to leasing.
2. According to Alternatives Matrix in Chapter 2, if specified.
3. Portions of Cedar Mesa ACEC lie within eight WSAs.
4. To be managed as SRMA in this alternative.

Impacts due to WSR recommendations under Alternative E would be the same in type and form as under Alternative B.

4.3.7.5.5.8. Impacts of Special Status Species and Other Wildlife and Fisheries Decisions on Mineral Resource Development Under Alternative E

Gunnison Sage-grouse

Under Alternative E, management decisions regarding Gunnison sage-grouse would be the same as under Alternative B, as would the impacts on mineral resource development from these management decisions.

Bighorn Sheep Lambing and Rutting

Under Alternative E, on the 453,386-acre bighorn crucial habitat area (or 25.4% of all BLM lands), the special conditions described in Chapter 2 would be enforced for the duration of the lambing season and rutting season (Table 4.62; see also the No Action Alternative for the duration). These management decisions would result in the same impacts as Alternative B.

Pronghorn Fawning Area

Impacts under Alternative E would be the same as under Alternative B, for the same reasons.

Deer Winter Range

Impacts under Alternative E would be the same as under Alternative B, for the same reasons.

Elk

Impacts under Alternative E would be the same as under Alternative B, for the same reasons.

4.3.7.5.5.9. Impacts of Vegetation Management Decisions on Mineral Resource Development Under Alternative E

Impacts on mineral resource development under Alternative E would be essentially the same as under Alternative B, except that fewer acres of vegetation would be treated (2,000 acres/year), and because the same acreages of vegetation would be protected from surface disturbance.

4.3.7.5.5.10. Impacts of Visual Resource Decisions on Mineral Resource Development Under Alternative E

Under Alternative E, approximately 998,370 acres (or 56.0% of BLM lands) would fall into the VRM I class, and in these areas, mineral resource development would be subject to NSO or closed to leasing because of the restrictions on surface disturbance in this VRM class. Adverse impacts under Alternative E would be of the same type as under the No Action Alternative, for the same reasons, but at a greater magnitude (35.1%). Alternative E proposes the greatest VRM related limits to mineral resource development.

4.3.7.6. Summary of Impacts

The summary of impacts on mineral resource development can be found in Table 2.2.

Table 4.62. Additional Seasonal Restrictions within Established Buffer Zones Applied to Mineral Resource Development under Alternative E

Species	Dates	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
Gunnison sage-grouse leks (2.0 miles)																									
• Non-disturbing geophysical work	3/20 – 5/15						■	■	■	■															
• All permitted activities (nighttime)	3/20 – 5/15						■	■	■	■															
Bighorn – Lambing (453,388 acres)	4/1 – 7/15							■	■	■	■	■	■	■											
Bighorn – Rutting (453,388 acres)	10/15 – 12/31																				■	■	■	■	■
Pronghorn – Fawning (29,365 acres)	5/1 – 6/15									■	■	■													
Deer – Winter use (785,921 acres)	11/1 – 5/15	■	■	■	■	■	■	■	■	■												■	■	■	■
Elk – Winter use (191,173 acres)	11/1 – 5/15	■	■	■	■	■	■	■	■	■												■	■	■	■

4.3.7.7. MITIGATION MEASURES

None of the alternatives would result in impacts that would necessitate mitigation of mineral resource development other than those found in standard operating procedures (Appendix A and I, and O). Furthermore, the various leasing stipulations and policies (see Appendix A) serve as a framework for best management practices for mineral resource development in the Monticello FO.

4.3.7.8. UNAVOIDABLE ADVERSE IMPACTS

Unavoidable, adverse impacts for mineral resource development include the slow, steady depletion of finite mineral resources under the surface of the Monticello FO, including oil, natural gas, potash, salt, tar sands, uranium-vanadium, copper, gold, limestone, sand, gravel, building stone, and clay. To a lesser extent, unavoidable, adverse impacts also include the relatively small, project-sized alterations to the geological surfaces and topography of the Monticello FO because of mineral resource extraction practices.

4.3.7.9. SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

Short-term uses of mineral resources at the predicted rate (RFD) are unlikely to affect the long-term productivity of the resource over the life of the plan.

4.3.7.10. IRREVERSIBLE AND IRRETRIEVABLE IMPACTS

The extraction and development of mineral resources from the Monticello FO would result in both an irreversible and irretrievable loss of those mineral resources because of the finite nature of the resource. The impacts would be irretrievable and irreversible because once extracted, the mineral resource cannot be used again, nor can it be replaced in the foreseeable future.

4.3.8. NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

Non-WSA lands with wilderness characteristics are areas of 5,000 acres or more, with landscapes generally in a natural or undisturbed condition. These areas also provide outstanding opportunities for solitude or primitive forms of recreation (non-motorized and non-mechanized activities in undeveloped settings). All of the alternatives would impact the values of non-WSA lands with wilderness characteristics to some degree. Generally, actions that create surface disturbance impact the natural character of these areas, and the setting for experiences of solitude and primitive recreational activities. Motorized uses in these areas detract from opportunities for both solitude and primitive forms of recreation.

Resources or uses determined to have negligible impacts on non-WSA lands with wilderness characteristics include air quality and health and safety. This is because 1) maintaining air quality within threshold levels for constituent pollutants would not affect wilderness values within the non-WSA wilderness areas, and 2) there are no abandoned mine lands, unauthorized dumping sites, or hazardous materials spills that have been identified in non-WSA lands with wilderness characteristics; therefore, it is not an issue or resource for further analysis.

4.3.8.1. Impacts of Cultural Resources Decisions on Non-WSA Lands with Wilderness Characteristics

Under all alternatives, the BLM would provide for legitimate field research by qualified scientists and institutions. These activities could create temporary surface-disturbing activities by digging and excavation. If conducted in non-WSA lands with wilderness characteristics, it would create a loss of naturalness and temporarily disturb opportunities for solitude and primitive recreation in the immediate area of research due to excavation activities. In the long-term, however, knowing more about the cultural resources of an area, interpreting the resource in an appropriate fashion, and viewing cultural resource sites in the non-WSA lands with wilderness characteristics all add to the enjoyment of these areas for primitive recreational purposes.

Protection of historic and prehistoric resources in non-WSA lands with wilderness characteristics would enhance opportunities for primitive forms of recreation. Knowing more about the cultural resources of an area, interpreting the resource in an appropriate fashion, and viewing cultural resource sites in the non-WSA lands with wilderness characteristics all add to the enjoyment of these areas for primitive recreational purposes. And, protection of cultural resources adds to the character of the setting that supports these recreational opportunities.

4.3.8.1.1. Alternative A

Alternative A would not designate any cultural special management areas, thus there would be no impacts from this decision on non-WSA lands with wilderness characteristics. Because there would be no special management prescriptions for protecting cultural resources in portions of the Butler Wash, Dark Canyon, Comb Ridge, Fish and Owl Creeks, Road Canyon, and San Juan River non-WSA lands with wilderness characteristics, archeological site integrity may be endangered by OHV use and other surface-disturbing activities that are currently allowed under the existing land use plan.

4.3.8.1.2. Alternative B

Under Alternative B, Comb Ridge would be managed as a 38,012-acre Cultural Special Management Area (CSMA). This includes all 13,760 acres of Comb Ridge, 3,580 acres of Fish and Owl Creeks, 530 acres of Road Canyon, and 640 acres of the San Juan River non-WSA lands with wilderness characteristics. Under management prescriptions for this CSMA, the area would be closed to geophysical work, closed to disposal of mineral materials, open to oil and gas leasing subject to an NSO stipulation, and closed to private and commercial firewood cutting. Vegetation treatments would be allowed by non-surface-disturbing methods only, OHV use would be limited to designated routes, the area would be closed to dispersed camping, and group sizes would be limited. Improvements for range, wildlife habitat, and watershed would be allowed. In addition, the Beef Basin would be managed as a 20,302-acre CSMA. This would include 13,280 acres of the Dark Canyon and 1,180 acres of the Butler Wash non-WSA lands with wilderness characteristics. Management would include closing the CSMA to private and commercial firewood cutting, limiting OHV use to designated routes, closing the area to dispersed camping, and limiting group size. Improvements for range, wildlife habitat, watershed, and vegetation treatments would be allowed, and primitive car camping areas would be designated in Ruin Park, Middle Park, House Park, and along the Beef Basin Loop Road within the Dark Canyon non-WSA lands with wilderness characteristics.

In both of these CSMAs, the majority of management prescriptions would protect the naturalness of the areas and continue to provide opportunities for solitude and primitive recreation. Improvements for range, wildlife habitat and watershed could diminish the naturalness of the areas, depending on the methods used in both CSMAs. In the Beef Basin CSMA, vegetation treatments could be by mechanical, biological, chemical, or fire. If mechanical treatments are used within the non-WSA lands with wilderness characteristics, the naturalness of the area would be compromised within the treatment area because it would leave an apparent imprint of human work on the land that would degrade the natural character of the non-WSA lands with wilderness characteristics. During the time of the treatments, opportunities for solitude and primitive recreation would be foregone in and around the areas being treated due to noise and human activity associated with the vegetation manipulations.

OHV use on designated routes in both CSMAs would temporarily detract from the opportunities for solitude and primitive recreation when vehicles (and associated motorized noise) are in the areas. In addition, developing a car campground in Ruin Park and designating car camping sites in Dark Canyon non-WSA lands with wilderness characteristics would detract from the naturalness of these areas and reduce opportunities for solitude and primitive recreation in the immediate areas where car camping is designated.

4.3.8.1.3. ALTERNATIVE C

Management proposed for the Comb Wash CSMA would be different from Alternative B in that the area would be open to private and commercial firewood cutting and available for vegetation treatments and surface-disturbing land treatments. These types of activities, if done within the non-WSA lands with wilderness characteristics, would have long-term impacts to the natural character of the landscape by leaving chain-sawed stumps from firewood cutting and allowing for other types of mechanical surface disturbance that do not appear natural. During the time of the activities, opportunities for solitude and primitive recreation would be interrupted by chain saw noise and other mechanical equipment as well as by the human working presence.

Management proposed for the Beef Basin CSMA would generally be the same as in Alternative B, thus the same impacts to non-WSA lands with wilderness characteristics would ensue.

4.3.8.1.4. ALTERNATIVE D

Neither Comb Ridge nor Beef Basin would be managed as a CSMA. The cultural resources in the Comb Ridge area would be managed with the same prescriptions as the surrounding lands. The cultural resources in the Beef Basin area would be managed by closing the area to private or commercial use of woodland products, and allowing for a commercial campground in the Ruin Park area. Closing the area to firewood cutting would continue to protect the wilderness characteristics within the Dark Canyon and Butler Wash non-WSA lands with wilderness characteristics. However, developing a commercial campground within the Ruin Park area would negate the naturalness of the immediate developed area and the opportunity for a primitive recreation experience would be lost within a small portion of the Dark Canyon non-WSA lands with wilderness characteristics where it would be developed.

4.3.8.1.6. ALTERNATIVE E

Management of the Comb Ridge and Beef Basin CSMAs would be similar to Alternative B, except that they would have more restrictive management placed within them. They would be closed to oil and gas leasing, closed to OHV use in those areas within the non-WSA lands with wilderness characteristics, closed to dispersed vehicle camping, and no new range improvements would be allowed. All of these management actions would fully protect the wilderness characteristics of the 13,760 acres of Comb Ridge, 3,580 acres of Fish and Owl Creeks, 530 acres of Road Canyon, 640 acres of San Juan River, 13,280 acres of the Dark Canyon, and 1,180 acres of the Butler Wash non-WSA lands with wilderness characteristics that fall within these CSMAs, as no surface-disturbing activities would be allowed.

4.3.8.1.7. CONCLUSION

Cultural resources decisions affect non-WSA lands with wilderness characteristics. Restrictive decisions to protect cultural resources also tend to protect wilderness characteristics values. Under Alternatives B, C, and E, CSMAs are established with restrictive management actions to protect cultural resources. Alternative E is the most restrictive, and fully protects the wilderness characteristics of all or portions of the five non-WSA land areas that fall within two of the CSMAs. Alternative B is very similar to Alternative E, but allows for some surface-disturbing activities associated with watershed, wildlife, range and vegetation treatments, which could affect the naturalness of portions of the non-WSA lands, if implemented. Alternative C, the Preferred Alternative, establishes the CSMAs and proposed management that would allow for more surface-disturbing activities, including private and commercial wood-cutting activities. Alternatives A and D propose no CSMAs and apply the same management as the surrounding areas. Many of those decisions would allow for surface-disturbing actions that would degrade the wilderness characteristics of the non-WSA lands.

4.3.8.2. IMPACTS OF FIRE MANAGEMENT DECISIONS ON NON-WSA LANDS WITH WILDERNESS CHARACTERISTICS

Under all alternatives, the BLM would attempt to restore natural fire regimes in fire-dependent and adapted ecosystems through the use of prescribed or managed wildland fire. The Monticello FO would base its priorities for all aspects of fire management decisions based on five categories (see Chapter 2, Table 2.1 Fire Management) to determine where fire is desired and where it is not. Further, following any wildland fire event, emergency stabilization and restoration (ESR) actions would be developed and implemented, as appropriate. Fuels treatment and management activities would be consistent with the resource goals and objectives in the RMP and may include mechanical treatments, manual treatments, prescribed fire, chemical spraying, or biological treatments and seeding.

Restoration of fire to fire-dependent and adapted ecosystems would restore a more natural vegetation community (in both species and composition) and watershed conditions and wildlife populations dependent on those communities. In the short-term, a burned landscape may reduce opportunities for primitive recreation. In the long-term, however, a more natural landscape would benefit the natural character of non-WSA lands with wilderness characteristics and enhance the setting and opportunities for primitive forms of recreation, including hiking, backpacking, hunting, wildlife viewing, and nature study. This would enhance the natural conditions of these areas.

Setting fire objectives through fire management categories would identify where fire is desired on the land, leading to the same benefits to natural conditions as restoring fire to fire-dependent and adapted ecosystems. When it is necessary to suppress fire in non-WSA lands with wilderness characteristics, development and implementation of the ESR plan would restore fire suppression disturbances to the land and vegetation (e.g., fire line construction), resulting in the restoration of the natural character of the non-WSA lands. Fuels treatments in non-WSA lands with wilderness characteristics would aid in restoration of a more natural fire regime in these lands. The use of fire to accomplish this reduction would be compatible with the natural character of these areas. The use of mechanical treatments would leave an apparent imprint of human work on the land that would degrade the natural character of the non-WSA lands with wilderness characteristics.

In the short-term, fire operations (aircraft over-flights, fire line construction, etc.) would degrade the natural landscape and character of the non-WSA lands with wilderness characteristics. The noise and presence of the people, equipment, and operations would also diminish opportunities for solitude and primitive forms of recreation. In the long-term, however, surface disturbance associated with the fire treatment would be restored, with little to no net impact on naturalness. The impacts of fire operations on opportunities for solitude and primitive recreation would cease, restoring those opportunities.

4.3.8.3. Impacts of Lands and Realty Management Decisions on Non- WSA Lands with Wilderness Characteristics

4.3.8.3.1. Impacts Common to All Alternatives

An existing utility corridor overlies slivers of Comb Ridge, Road Canyon, and San Juan River non-WSA lands with wilderness characteristics along Highway 163. Although none are currently proposed, placement of future utility ROWs within these portions of the corridors would diminish the wilderness characteristics of these areas by causing surface-disturbing activities (and possible placing surface facilities) that would no longer maintain the wilderness characteristics values in those slivers of non-WSA lands along the highway.

4.3.8.3.2. Alternative A

Four areas of non-WSA lands with wilderness characteristics, totaling 8,880 acres, intersect with proposed mineral withdrawals under Alternative A:

- 280 acres of the Dark Canyon non-WSA lands with wilderness characteristics
- 390 acres of the Gooseneck non-WSA lands with wilderness characteristics
- 3,890 acres of the Indian Creek non-WSA lands with wilderness characteristics
- 4,320 acres of the San Juan River non-WSA lands with wilderness characteristics

The proposed mineral withdrawals would preserve the naturalness and opportunities for both solitude and primitive forms of recreation in each of these areas by preventing mining claims and the noise and presence of surface disturbance, people, vehicles, and equipment associated with mining.

A total of 113,240 acres in all or portions of 19 non-WSA lands with wilderness characteristics would continue to be ROW avoidance or exclusion areas (Table 4.63).

Table 4.63. Acres of Avoidance or Exclusion for ROWs in Non-WSA Lands with Wilderness Characteristics (all acreage not under exclusion or avoidance remain open for ROWs)

Name of Non-WSA Land with Wilderness Characteristics	Total Acres	Alternative A	Alternative B	Alternative C	Alternative. D	Alternative E (all exclusion)
Arch Canyon	50	50	0	0	0	50
Bridger Jack Mesa	23,050	1,220	670	690	0	23,050
Butler Wash	1,660	40	0	0	0	1,660
Cheesebox Canyon	13,240	2,630	0	0	0	13,240
Comb Ridge	13,760	520	13,760	0	0	13,760
Cross Canyon	1,350	0	0	0	0	1,350
Dark Canyon	66,330	0	3,310	3,350	0	66,330
Fish and Owl Creeks	24,650	2,110	3,590	0	0	24,650
Fort Knocker Canyon	12,410	5,710	0	0	0	12,410
Gooseneck	3,570	0	3,570	970	0	3,570
Grand Gulch	55,240	17,810	100	70	0	55,240
Gravel and Long	36,890	6,020	0	0	0	36,890
Hammond Canyon	4,700	0	0	0	0	4,700
Harmony Flat	9,660	2,900	0	0	0	9,660
Harts Point	24,740	0	170	0	0	24,740
Hatch Lockhart Hart	1,760	0	1,760	0	0	1,760
Indian Creek	23,280	3,680	19,760	4,140	0	23,280
Lime Creek	5,560	5,530	5,560	5,560	0	5,560
Mancos Mesa	61,570	27,490	12,760	250	0	61,570
Nokai Dome	94,270	15,200	12,600	420	0	94,270
Red Rock Plateau	17,010	0	0	0	0	17,010
Road Canyon	11,320	2,220	2,080	1,540	0	11,320
San Juan River	14,340	5,110	4,820	4,180	0	14,340
Shay Mountain	6,710	0	100	100	0	6,710
Sheep Canyon	4,000	0	0	0	0	4,000
Squaw and Papoose Canyons	3,570	0	0	0	0	3,570

Table 4.63. Acres of Avoidance or Exclusion for ROWs in Non-WSA Lands with Wilderness Characteristics (all acreage not under exclusion or avoidance remain open for ROWs)

Name of Non-WSA Land with Wilderness Characteristics	Total Acres	Alternative A	Alternative B	Alternative C	Alternative. D	Alternative E (all exclusion)
Upper Red Canyon	24,920	1,500	0	0	0	24,920
Valley of the Gods	13,670	13,450	13,670	13,670	0	13,670
White Canyon	9,080	50	0	0	0	9,080
Total Acres	**582,360**	**113,240 (19%)**	**98,280 (17%)**	**34,940 (6%)**	**0 (0%)**	**582,360 (100%)**

The majority of lands within the Lime Creek and Valley of the Gods non-WSA lands with wilderness characteristics would be within ROW avoidance areas. Only the 5,110 acres in the San Juan River non-WSA would be an exclusion area, the rest would be avoidance areas. These areas are to be avoided but may be available for location of ROWs with special stipulations if the proposal meets the goals and objectives of other resources and uses in the land use plan. There are no ROW proposals for these areas at this time, and it is expected and assumed that the avoidance areas would protect the natural character of the non-WSA lands in these areas. However, the rest of the non-WSA lands with wilderness characteristics (469,120 acres) would remain available for the placement of ROWs. More permanent, long-term impacts would occur if the ROW is for an overhead powerline than for a buried pipeline. However, any surface-disturbing activity and/or placement of permanent visual facilities would detract from the natural character of the area and disrupt the setting needed to support primitive forms of recreation.

4.3.8.3.3. ALTERNATIVE B

Nine non-WSA lands with wilderness characteristics areas, totaling 49,835 acres, intersect with proposed mineral withdrawals under Alternative B:

- 40 acres of the Butler Wash non-WSA
- 280 acres of the Dark Canyon non-WSA
- 3,570 acres of the Gooseneck non-WSA
- 155 acres of the Harts Point non-WSA
- 18,870 acres of the Indian Creek non-WSA
- 5,560 acres of the Lime Creek non-WSA
- 1,530 acres of the Road Canyon non-WSA
- 6,160 acres of the San Juan River non-WSA
- 13,670 acres of the Valley of the Gods non-WSA

The proposed mineral withdrawals would preserve the naturalness and opportunities for both solitude and primitive forms of recreation in all of the Lime Creek and Valley of the Gods non-

WSAs and portions of the other seven non-WSAs by preventing mining claims and the noise and presence of surface disturbance, people, vehicles, and equipment associated with mining.

A total of 98,280 acres in all or portions of 16 non-WSA lands with wilderness characteristics would continue to be ROW avoidance or exclusion areas (see Table 4.63). All of the lands within the Comb Ridge, Gooseneck, Hatch/Lockhart/Hart, Lime Creek and Valley of the Gods non-WSA lands with wilderness characteristics would be within ROW avoidance areas. Only the 4,820 acres in the San Juan River non-WSA area would be an exclusion area, the rest would be avoidance areas. These areas are to be avoided but may be available for location of ROWs with special stipulations if the proposal meets the goals and objectives of other resources and uses in the land use plan. There are no ROW proposals for these areas at this time, and it is expected and assumed that the avoidance areas would protect the natural character of the non-WSA lands in these areas. However, the rest of the non-WSA lands with wilderness characteristics (484,080 acres) would remain available for the placement of ROWs. More permanent, long-term impacts would occur if the ROW is for an overhead powerline than for a buried pipeline. However, any surface-disturbing activity and/or placement of permanent visual facilities would detract from the natural character of the area and disrupt the setting needed to support primitive forms of recreation.

4.3.8.3.4. ALTERNATIVE C

Three non-WSA lands with wilderness characteristics areas, totaling 10,230 acres, intersect with proposed mineral withdrawals under Alternative C:

- 390 acres of the Gooseneck non-WSA
- 3,890 acres of the Indian Creek non-WSA
- 5,950 acres of the San Juan River non-WSA

The proposed mineral withdrawals would preserve the naturalness and opportunities for both solitude and primitive forms of recreation in each of these areas by preventing mining claims and the noise and presence of surface disturbance, people, vehicles, and equipment associated with mining.

A total of 34,940 acres in all or portions of 12 non-WSA lands with wilderness characteristics would continue to be ROW avoidance or exclusion areas (see Table 4.63). All of the lands within the Lime Creek and Valley of the Gods non-WSA lands with wilderness characteristics would be within ROW avoidance areas. Only the 4,180 acres in the San Juan River non-WSA would be an exclusion area, the rest would be avoidance areas. These areas are to be avoided but may be available for location of ROWs with special stipulations if the proposal meets the goals and objectives of other resources and uses in the land use plan. There are no ROW proposals for these areas at this time, and it is expected and assumed that the avoidance areas would protect the natural character of the non-WSA lands in these areas. However, the rest of the non-WSA lands with wilderness characteristics (547,420 acres) would remain available for the placement of ROWs. More permanent, long-term impacts would occur if the ROW is for an overhead powerline than for a buried pipeline. However, any surface-disturbing activity and/or placement of permanent visual facilities would detract from the natural character of the area and disrupt the setting needed to support primitive forms of recreation.

4.3.8.3.5. ALTERNATIVE D

One non-WSA land with wilderness characteristics area, totaling 1,960 acres, intersects with proposed mineral withdrawals under Alternative D:

- 1,960 acres of the San Juan River non-WSA

This proposed mineral withdrawal would preserve the naturalness and opportunities for both solitude and primitive forms of recreation in each of these areas by preventing mining claims and the noise and presence of surface disturbance, people, vehicles, and equipment associated with mining.

All 582,360 acres would be open for placement of ROWs (see Table 4.63). No specific ROWs are proposed at this time, but if implemented, more permanent, long-term impacts would occur if the ROW is for an overhead powerline than for a buried pipeline. However, any surface-disturbing activity and/or placement of permanent visual facilities would detract from the natural character of the area and disrupt the setting needed to support primitive forms of recreation.

4.3.8.3.6. ALTERNATIVE E

All 29 areas of non-WSA lands with wilderness characteristics, totaling 582,360 acres would be proposed for mineral withdrawal. This proposed mineral withdrawal would preserve the naturalness and opportunities for both solitude and primitive forms of recreation in each of these areas by preventing mining claims and the noise and presence of surface disturbance, people, vehicles, and equipment associated with mining. Existing mining claims in these areas are valid existing rights, however, and if surface-disturbing activities occur in association with existing mining claims, wilderness characteristics would be compromised and naturalness would be lost in the immediate area of the mining activities. Opportunities for solitude and primitive recreation would also be forgone in those areas and would be regained as the recreationist moved farther away from the mining activity.

Under this alternative, all 29 areas of non-WSA lands with wilderness characteristics would be managed as ROW exclusion areas (see Table 4.63). Exclusion from future ROW development for pipelines and powerlines, corridor designation, or other ROWs would protect the natural character in all these lands. Protection of the natural landscape would also preserve the setting needed to support primitive forms of recreation and experiences of solitude.

In summary, Alternative E would protect all 582,360 acres of the non-WSA lands with wilderness characteristics by precluding surface-disturbing activities associated with mining and ROWs by proposing mineral withdrawals and managing them as ROW exclusion areas. In contrast, Alternative D would not manage any of the non-WSA lands as ROW avoidance or exclusion areas and only proposes a portion of one non-WSA (1,960 acres) for mineral withdrawal. This would leave the majority of all 582,360 acres of non-WSA lands vulnerable to surface-disturbing activities that would allow them to lose their wilderness characteristics values. The other three alternatives provide descending protections from ROW avoidance or exclusion areas. Alternative A protects 19% of the lands with wilderness characteristics by managing them as avoidance or exclusion areas, Alternative B protects 17%, and Alternative C protects 6%. Proposed mineral withdrawals under Alternative A protect the wilderness characteristics on portions of four non-WSAs totaling 8,880 acres, Alternative B protects all or portions of nine

non-WSAs totaling 50,190 acres, and Alternative C protects a portion of three non-WSAs totaling 10,230 acres.

4.3.8.4. Impacts of Livestock Grazing on Non- WSA Lands with Wilderness Characteristics

Livestock grazing is guided by livestock objectives set in the Standards for Rangeland Health and Guidelines for Grazing Management. Proper levels of livestock use are guided by these objectives, thus, it is not anticipated that livestock grazing would have impacts on non-WSA lands with wilderness characteristics under any alternatives because meeting these objectives would not permit degradation of the lands. When livestock use is properly managed, it would not affect the appearance of naturalness. Grazing assessments completed by Monticello FO staff and any subsequent actions taken to remedy impending issues would enhance the natural character of non-WSA lands with wilderness characteristics. Further, improved natural condition would sustain the setting needed to support opportunities for primitive and unconfined recreation and the experience of solitude that visitors seek.

While there could be some visual evidence of livestock use in the areas (presence of livestock, feces, trampling of soil, fences, and consumption of vegetation), rangeland health and riparian conditions would be maintained through proper management under the Standard and Guidelines assessments, and the appearance of a natural condition of these areas would be maintained. For some visitors, the presence of livestock would be an adverse impact on the desired experience (connection with the natural world and experiences of solitude). However, this impact would be seasonal. At other times of the year, livestock would not be present, soils would recover, and vegetation would re-grow, reducing the impact on the visitor.

Under all alternatives, some allotments that overlie portions of non-WSA lands with wilderness characteristics would be unavailable for grazing. When some visitors encounter an area with little or no evidence of livestock use, their experience of solitude and primitive recreation may be enhanced.

4.3.8.5. Impacts of Mineral Decisions on Non- WSA Lands with Wilderness Characteristics

4.3.8.5.1. Oil and Gas

The mineral assumptions for analysis and the RFD scenarios presented in the beginning of this chapter were used in the analysis of impacts to non-WSA lands with wilderness characteristics. These RFD scenarios for oil and gas development were derived from the MPR for the Monticello FO (BLM 2005b). Three development areas, each with its own RFD, have been identified in the Monticello PA: the Paradox Fold and Fault Belt, the Monument Upwarp, and the Blanding Sub-basin. Non-WSA lands with wilderness characteristics lie within all three of them.

The Paradox Fold and Fault Belt area totals 259,390 acres of public lands outside of WSAs. It encompasses all of four and portions of two areas of non-WSA lands with wilderness characteristics which total 79,750 acres, or about 31% of the public land within this minerals development area (Table 4.64). About 70 acres within two of the non-WSA lands with wilderness characteristics are currently leased for oil and gas development or have pending leases.

Table 4.64. Paradox Fold and Fault Belt Development Area and Non-WSA Lands with Wilderness Characteristics

Name of Non-WSA Lands with Wilderness Characteristics	Acres and (% of Non-WSA within Public Lands in Paradox Fold and Fault Belt Area)		Acres of Non-WSA with Existing Leases and (% of Lease Total of Non-WSA)	
Bridger Jack Mesa	19,900	(8%)	0	
Gooseneck	3,570	(1%)	0	
Harts Point	24,740	(10%)	60	(< 1%)
Hatch/Lockhart/Hart	1,760	(<1%)	0	
Indian Creek	23,280	(9%)	10	(<1%)
Shay Mountain	6,500	(3%)	0	

The Monument Upwarp area has a total of 739,640 acres of public lands outside of WSAs. It includes all of 16 and portions of seven non-WSA lands with wilderness characteristics, which total 465,000 acres, or about 63% of the public land area (Table 4.65). About 3,340 acres within six non-WSA lands with wilderness characteristics are currently leased for oil and gas development or have pending leases.

Table 4.65. Monument Upwarp Area and Non-WSA Lands with Wilderness Characteristics

Name of Non-WSA Lands with Wilderness Characteristics	Acres and (% of Non-WSA within Public Lands in Monument Upwarp Area)		Acres of Non-WSA with Existing Leases and (% of Lease Total of Non-WSA)	
Arch Canyon	50	(<1%)	0	
Bridger Jack Mesa	3,150	(<1%)	0	
Butler Wash	1,660	(<1%)	0	
Cheesebox Canyon	13,240	(2%)	0	
Comb Ridge	1,080	(<1%)	0	
Dark Canyon	66,330	(9%)	0	
Fish and Owl Creeks	18,800	(3%)	210	(1%)
Fort Knocker Canyon	12,410	(2%)	0	
Grand Gulch	55,240	(7%)	1,600	(3%)
Gravel and Long Canyon	36,890	(5%)	0	
Hammond Canyon	4,700	(<1%)	380	(8%)
Harmony Flat	9,660	(1%)	660	(7%)
Lime Creek	5,200	(<1%)	290	(6%)
Mancos Mesa	61,570	(8%)	0	
Nokai Dome	94,270	(13%)	0	
Red Rock Plateau	17,010	(2%)	0	
Road Canyon	3,360	(<1%)	0	

Table 4.65. Monument Upwarp Area and Non-WSA Lands with Wilderness Characteristics

Name of Non-WSA Lands with Wilderness Characteristics	Acres and (% of Non-WSA within Public Lands in Monument Upwarp Area)		Acres of Non-WSA with Existing Leases and (% of Lease Total of Non-WSA)	
San Juan River	7,570	(1%)	0	
Shay Mountain	220	(<1%)	0	
Sheep Canyon	4,000	(<1%)	0	
Upper Red Canyon	24,920	(3%)	0	
Valley of the Gods	13,670	(2%)	200	(1%)
White Canyon	9,080	(1%)	0	

The Blanding Sub-basin area has a total of 406,770 acres of public lands outside of WSAs. It includes all of two and portions of five non-WSA lands with wilderness characteristics, which total 38,540 acres, or about 9% of the public land area (Table 4.66). About 1,030 acres within two non-WSA lands with wilderness characteristics are currently leased for oil and gas development or have pending leases.

Table 4.66. Blanding Sub-basin Area and Non-WSA Lands with Wilderness Characteristics

Name of Non-WSA Lands with Wilderness Characteristics	Acres and (% of Non-WSA within Public Lands in Blanding Sub-Basin Area)		Acres of Non-WSA with Existing Leases and (% of Lease Total of Non-WSA)	
Comb Ridge	12,680	(3%)	0	
Cross Canyon	1,350	(<1%)	740	(55%)
Fish and Owl Creeks	5,850	(1%)	0	
Lime Creek	360	(<1%)	0	
Road Canyon	7,960	(2%)	0	
San Juan River	6,770	(2%)	0	
Squaw and Papoose Canyon	3,570	(1%)	290	(8%)

Each of the three development areas has differing RFD projections for oil and gas development by alternative. Table 4.4 in Section 4.1.2, Assumptions and Methodology for Mineral Development, portrays those projections. Table 4.67 below summarizes that information.

Table 4.67. Development Areas with RFD Projected Number of Wells/Year Over the Life of the Plan

Development Areas	Alternative A Projected Wells Per Year/LOP	Alternative B Projected Wells Per Year/LOP	Alternative C Projected Wells Per Year/LOP	Alternative D Projected Wells Per Year/LOP	Alternative E Projected Wells Per Year/LOP
Paradox Fold and Fault Belt	~2/ 25	~1/ 20	~2/24	~2/25	~1/18
Monument Upwarp	~1 / 7	~1 /8	~1 / 9	~1 / 9	~1/ 7
Blanding Sub-Basin	~3 / 41	~3 / 38	~3/ 41	~3 / 41	~3/ 38

It is assumed that 9.6 acres would be disturbed for every well drilled. The assumed disturbance for the RFD by well is inclusive of well pads, road access, associated infrastructure, pipelines, gas plants, and for water disposal facilities, among other things.

4.3.8.5.1.1. Impacts Associated with Oil and Gas Leasing/Development under All Alternatives

A number of variables would determine the degree of impact to non-WSA lands with wilderness characteristics, including where surface-disturbing activities occur, land form or topography, vegetation type, sequence of development, and reclamation time. Soil types and climate would affect the time it takes to reclaim disturbances. Successful reclamation would take about 10 years.

Construction and operation of oil and gas wells and associated support facilities, including roads, surface and buried pipelines, power lines, and compressor stations would create soil and vegetation disturbance and the presence of permanent structures (for the life of the oil/gas field) that would degrade the natural characteristics of non-WSA lands with wilderness characteristics. In addition to site-specific surface disturbance, the cumulative number of wells would change the appearance of naturalness.

Noise from construction and operation of producing wells, including the presence of work crews, vehicles, and equipment, would degrade opportunities for solitude and conflict with primitive recreational opportunities in proximity to industrial development. As recreational visitors move away from the sources of development, the sights and sounds of development would diminish. However, it can be expected that sights and sounds from development would reduce opportunities for solitude and primitive and unconfined recreation up to one-half mile beyond the direct loss of natural character.

Table 4.68 displays the oil and gas leasing stipulations, by alternative, for each of the non-WSA lands with wilderness characteristics.

Table 4.68. Oil and Gas Leasing Stipulations for Non-WSA Lands with Wilderness Characteristics

Name	Total Acres	Currently Leased	Stipulation[1]	Alt A	Alt B	Alt C	Alt D	Alt E
Arch Canyon	50	0	Standard	0	0	50	50	0
		0	CSU/TL	0	50	0	0	0
		0	NSO	50	0	0	0	0
		0	Closed	0	0	0	0	50
Bridger Jack Mesa	23,050	0	Standard	15,040	1,490	4,590	22,780	0
		0	CSU/TL	6,790	20,890	17,770	270	0
		0	NSO	1,220	670	690	0	0
		0	Closed	0	0	0	0	23,050
Butler Wash	1,660	0	Standard	90	0	350	360	0
		0	CSU/TL	1,530	1,660	1,310	1,300	0
		0	NSO	40	0	0	0	0
		0	Closed	0	0	0	0	1,660
Cheesebox Canyon	13,240	0	Standard	4,140	0	4,940	8,350	0
		0	CSU/TL	6,470	13,240	8,300	4,890	0
		0	NSO	2,630	0	0	0	0
		0	Closed	0	0	0	0	13,240
Comb Ridge	13,760	0	Standard	5,320	0	12,630	13,760	0
		0	CSU/TL	7,920	0	1,130	0	0
		0	NSO	500	13,760	0	0	0
		0	Closed	20	0	0	0	13,760
Cross Canyon	1,350	710	Standard	1,350	1,350	1,350	1,350	0
		30	CSU/TL	0	0	0	0	0
		0	NSO	0	0	0	0	0
		0	Closed	0	0	0	0	1,350
Dark Canyon	66,330	0	Standard	43,720	3,290	10,400	44,570	0
		0	CSU/TL	22,610	59,730	52,580	21,760	0
		0	NSO	0	0	0	0	0
		0	Closed	0	3,310	3,350	0	66,330

Table 4.68. Oil and Gas Leasing Stipulations for Non-WSA Lands with Wilderness Characteristics

Name	Total Acres	Currently Leased	Stipulation[1]	Alt A	Alt B	Alt C	Alt D	Alt E
Fish and Owl Creeks	24,650	210	Standard	1,190	3,360	16,490	24,650	0
		0	CSU/TL	21,350	17,700	8,160	0	0
		0	NSO	2,110	3,590	0	0	0
		0	Closed	0	0	0	0	24,650
Fort Knocker Canyon	12,410	0	Standard	170	0	0	11,600	0
		0	CSU/TL	6,530	12,410	12,410	810	0
		0	NSO	5,710	0	0	0	0
		0	Closed	0	0	0	0	12,410
Gooseneck	3,570	0	Standard	1,650	0	0	0	0
		0	CSU/TL	1,920	0	2,600	3,570	0
		0	NSO	0	2,580	80	0	0
		0	Closed	0	990	890	0	3,570
Grand Gulch	55,240	1,600	Standard	3,710	36,550	46,240	52,070	0
		0	CSU/TL	34,350	18,590	8,930	3,170	0
		0	NSO	17,180	100	70	0	0
		0	Closed	0	0	0	0	55,240
Gravel and Long	36,890	0	Standard	20	0	1,350	460	0
		0	CSU/TL	30,850	36,890	35,540	36,430	0
		0	NSO	6,020	0	0	0	0
		0	Closed	0	0	0	0	36,890
Hammond Canyon	4,700	380	Standard	2,600	0	4,700	4,700	0
		0	CSU/TL	2,100	4,700	0	0	0
		0	NSO	0	0	0	0	0
		0	Closed	0	0	0	0	4,700
Harmony Flat	9,660	660	Standard	0	0	0	7,740	0
		0	CSU/TL	6,760	9,660	9,660	1,920	0
		0	NSO	2,900	0	0	0	0
		0	Closed	0	0	0	0	9,660

Table 4.68. Oil and Gas Leasing Stipulations for Non-WSA Lands with Wilderness Characteristics

Name	Total Acres	Currently Leased	Stipulation[1]	Alt A	Alt B	Alt C	Alt D	Alt E
Harts Point	24,740	60	Standard	9,860	1,400	6,320	12,890	0
		0	CSU/TL	14,880	23,170	18,420	11,530	0
		0	NSO	0	170	0	0	0
		0	Closed	0	0	0	0	24,740
Hatch Lockhart Hart	1,760	0	Standard	1,760	0	0	0	0
		0	CSU/TL	0	0	1,760	1,760	0
		0	NSO	0	1,760	0	0	0
		0	Closed	0	0	0	0	1,760
Indian Creek	23,280	10	Standard	12,240	0	3,000	6,940	0
		0	CSU/TL	7,360	3,520	16,140	16,340	0
		0	NSO	3,680	19,760	4,140	0	0
		0	Closed	0	0	0	0	23,280
Lime Creek	5,560	285	Standard	30	0	0	5,560	0
		0	CSU/TL	0	0	0	0	0
		0	NSO	5,530	0	5,560	0	0
		0	Closed	0	5,560	0	0	5,560
Mancos Mesa	61,570	0	Standard	4,720	22,070	22,070	40,940	0
		0	CSU/TL	29,360	26,740	39,250	20,630	0
		0	NSO	27,490	12,760	250	0	0
		0	Closed	0	0	0	0	61,570
Nokai Dome	94,270	0	Standard	0	40,250	40,250	94,270	0
		0	CSU/TL	79,070	41,420	53,600	0	0
		0	NSO	15,200	12,600	420	0	0
		0	Closed	0	0	0	0	94,270
Red Rock Plateau	17,010	0	Standard	0	0	0	0	0
		0	CSU/TL	17,010	17,010	17,010	17,010	0
		0	NSO	0	0	0	0	0
		0	Closed	0	0	0	0	17,010

Table 4.68. Oil and Gas Leasing Stipulations for Non-WSA Lands with Wilderness Characteristics

Name	Total Acres	Currently Leased	Stipulation[1]	Alt A	Alt B	Alt C	Alt D	Alt E
Road Canyon	11,320	0	Standard	220	7,970	9,390	11,320	0
		0	CSU/TL	8,880	1,270	390	0	0
		0	NSO	2,220	550	1,540	0	0
		0	Closed	0	1,530	0	0	11,320
San Juan River	14,340	0	Standard	9,230	9,520	10,160	14,340	0
		0	CSU/TL	0	0	0	0	0
		0	NSO	5,110	3,660	3,060	0	0
		0	Closed	0	1,160	1,120	0	14,340
Shay Mountain	6,710	0	Standard	2,730	6,610	910	6,710	0
		0	CSU/TL	3,980	0	5,700	0	0
		0	NSO	0	100	100	0	0
		0	Closed	0	0	0	0	6,710
Sheep Canyon	4,000	0	Standard	800	0	0	4,000	0
		0	CSU/TL	3,200	4,000	4,000	0	0
		0	NSO	0	0	0	0	0
		0	Closed	0	0	0	0	4,000
Squaw and Papoose Canyons	3,570	110	Standard	3,570	3,570	3,570	3,570	0
		180	CSU/TL	0	0	0	0	0
		0	NSO	0	0	0	0	0
		0	Closed	0	0	0	0	3,570
Upper Red Canyon	24,920	0	Standard	4,330	21,200	21,220	12,570	0
		0	CSU/TL	19,090	3,720	3,700	12,350	0
		0	NSO	1,500	0	0	0	0
		0	Closed	0	0	0	0	24,920
Valley of the Gods	13,670	200	Standard	130	0	0	13,670	0
		0	CSU/TL		0	0	0	0
		0	NSO	13,540	0	13,670	0	0
		0	Closed	0	13,670	0	0	13,670

Table 4.68. Oil and Gas Leasing Stipulations for Non-WSA Lands with Wilderness Characteristics

Name	Total Acres	Currently Leased	Stipulation[1]	Alt A	Alt B	Alt C	Alt D	Alt E
White Canyon	9,080	0	Standard	4,250	380	1,810	5,930	0
		0	CSU/TL	4,780	8,700	7,270	3,150	0
		0	NSO	50	0	0	0	0
		0	Closed	0	0	0	0	9,080

[1]CSU/TL = Controlled Surface Use/Timing Limitations
NSO = No surface occupancy

4.3.8.5.1.2. Alternative A

All or portions of 28 of the 29 non-WSA lands with wilderness characteristics, comprising 468,550 acres, would remain open to leasing and development under standard oil and gas stipulations or under CSU or TL stipulations (see Table 4.68). This comprises over 80% of these non-WSA wilderness lands. Twenty percent of the non-WSA lands with wilderness characteristics (all of one and portions of 18 non-WSAs) would be either closed to leasing or have an NSO stipulation on the leases.

In the Paradox Fold area, all or portions of the six non-WSA lands with wilderness characteristics, comprising 74,850 acres, would remain open to leasing under standard stipulations or under CSU or TL stipulations. This is about 29% of the public lands within the development area. Approximately 4,900 acres (1,220 acres in Bridger Jack Mesa and 3,680 acres in Indian Creek non-WSAs) would have an NSO stipulation applied to the lease, or about 2% of the development area. Based on the percentage of non-WSA lands with wilderness characteristics and the existing or pending leases within those six areas, the highest potential for leasing and/or development would be in Harts Point, Indian Creek or Bridger Jack Mesa non-WSAs. Given that the projection for drilling for oil and gas is about two wells per year for the public lands within the Paradox Fold area, and that 31% of the development area encompasses non-WSA lands with wilderness characteristics, up to one well per year – or up to 15 wells over a 15-year period – could be drilled within these areas. This could disturb up to 9.6 acres per year, or approximately 144 acres over the LOP within the non-WSA wilderness characteristics lands. Leasing and development within these non-WSA lands with wilderness characteristics would cause that portion to lose their natural character. Opportunities for solitude and primitive recreation due to exploration for and development of oil and gas resources would be broader than just for the 144 acres of direct surface-disturbing activities, and could impact these values for up`to one-half mile from the ongoing activity. However, it is not anticipated that any of the areas would lose their wilderness characteristics in totality because of the small amount of acreage projected to be disturbed and the number of projected wells in this development area over the life of the RMP.

In the Monument Upwarp area, 22 of the 23 non-WSA lands with wilderness characteristics would remain all or partially open to leasing under standard stipulations or under CSU or TL stipulations (357,200 acres, or 48% of the development area). Approximately 107,800 acres in

17 non-WSA lands with wilderness characteristics would be under an NSO stipulation or closed to leasing, which is about 15% of the public land within the development area. This includes 50 acres in Arch Canyon (100% of this non-WSA land with wilderness characteristics); 40 acres in Butler Wash (2%); 2,630 acres in Cheesebox Canyon (20%); 520 acres in Comb Ridge (4%); 2,110 acres in Fish and Owl Creeks (9%); 5,710 acres in Fort Knocker Canyon (5%); 17,180 in Grand Gulch (31%); 6,020 acres in Gravel and Long Canyon (16%); 2,900 acres in Harmony Flat (30%); 5,530 acres in Lime Creek (99%); 27,490 acres in Mancos Mesa (45%); 15,200 acres in Nokai Dome (16%); 2,220 in Road Canyon (20%); 5,110 acres in San Juan River (36%); 1,500 acres in Upper Red Canyon (6%); 13,540 acres in Valley of the Gods (99%); and 50 acres in White Canyon (1%). Based on the percentage of non-WSA lands with wilderness characteristics and the existing and pending leases within those areas, the highest potential for leasing and/or development would be in Nokai Dome, Dark Canyon, Mancos Mesa, and Grand Gulch non-WSA lands with wilderness characteristics. Given that the projection for drilling for oil and gas is less than one well per year for all of the public lands in the Monument Upwarp area, and that 63% of the development area encompasses non-WSA lands with wilderness characteristics, that projected one well per year – or up to seven wells over a 15-year period – could be drilled within the non-WSA wilderness characteristics lands. This could disturb up to 9.6 acres per year, or approximately 67 acres over the LOP. Leasing and development within these non-WSA lands could cause that portion to lose its natural character. Opportunities for solitude and primitive recreation due to exploration for and development of oil and gas resources would be broader than just for the 67 acres of direct surface-disturbing activities, and could impact these values for up to one-half mile from the ongoing activity. However, it is not anticipated that any of the areas would lose their wilderness characteristics in totality because of the small amount of acreage projected to be disturbed and the few projected wells in this development area over the life of the RMP.

In the Blanding Sub-basin area, all seven non-WSA lands with wilderness characteristics, totaling 38,540 acres (or 9% of the development area), would remain open to leasing under standard stipulations or under CSU or TL stipulations. None of the lands would be under an NSO stipulation or closed to leasing. Based on the percentage of non-WSA lands with wilderness characteristics and/or the existing and pending leases within those areas, the highest potential for leasing and/or development would be in Cross Canyon, Squaw and Papoose Canyon, and the east side of Comb Ridge non-WSA lands with wilderness characteristics. Given that the projection for drilling for oil and gas is three wells per year for all of the public lands within the Monument Upwarp area, and that 9% of the development area encompasses non-WSA lands with wilderness characteristics open to leasing under standard stipulations, CSU, or TL, up to one well per year – or up to 15 wells over a 15-year period – could be drilled within the non-WSA lands. This could disturb up to 9.6 acres per year, or up to 144 acres over the LOP. Leasing and development within these non-WSA lands could cause that portion to lose its natural character. Opportunities for solitude and primitive recreation due to exploration for and development of oil and gas resources would be broader than just for the 144 acres of direct surface-disturbing activities, and could impact these values for up to one-half mile from the ongoing activity. However, it is not anticipated that any of the areas would lose their wilderness characteristics in totality because of the small amount of acreage projected to be disturbed and the few projected wells in this development area over the life of the RMP.

Geophysical exploration activities would be authorized for all non-WSA lands with wilderness characteristics, subject to the oil and gas leasing stipulations and the exceptions to those activities that are non-surface disturbing as defined in Appendix A. Geophysical activities would have short-term, minimal impacts on naturalness due to crushed vegetation, tire tracks, and small drill holes and their cuttings. Solitude and primitive recreation opportunities would be impacted in the short-term by the presence of equipment, people, noise, and work associated with geophysical exploration activities. When the geophysical activity ceases, solitude and primitive recreation opportunities would resume and disturbances to the naturalness would be restored in the short-term.

In summary, up to 37 wells over the 15-year RFD scenario, disturbing up to 355 acres could occur in non-WSA lands with wilderness characteristics under this alternative. Nine of the 29 areas have a higher potential for these wells to be drilled based on existing leases and/or percentages of non-WSA lands within the development areas. All of Arch Canyon and the majority (99%) of Lime Creek and Valley of the Gods non-WSA lands with wilderness characteristics would be protected from surface-disturbing activities associated with oil and gas leasing due to an NSO stipulation or closed to leasing.

4.3.8.5.1.3. Alternative B

All or portions of 25 of the 29 non-WSA lands with wilderness characteristics, comprising 482,980 acres, would remain open to leasing and development under standard oil and gas stipulations or under CSU or TL stipulations (see Table 4.68). This comprises nearly 83% of these non-WSA lands. Seventeen percent of the non-WSA lands with wilderness characteristics (all of five and portions of 11 non-WSAs) would be either closed to leasing or have an NSO stipulation on the leases. It is assumed that the various waivers, exceptions, and modifications under the NSO stipulation would not be granted because they would not be in concert with other resource goals and objectives in these areas.

In the Paradox Fold area, portions of four of the six non-WSA lands with wilderness characteristics, comprising 53,720 acres, would remain open to leasing under standard stipulations or under CSU or TL stipulations. This is about 21% of the public lands within the development area. Approximately 26,030 acres, which includes 670 acres in Bridger Jack Mesa (3% of the non-WSA); 3,570 acres in Gooseneck (100%), 170 acres in Harts Point (1%); 1,760 acres in Hatch/Lockhart/Hart (100%); 19,760 acres in Indian Creek (85%); and 100 acres in Shay Mountain (1%), would have an NSO stipulation applied to the lease or be closed to leasing. This comprises about 10% of the development area. Based on the percentage of non-WSA lands with wilderness characteristics and the existing or pending leases within those six areas, the highest potential for leasing and/or development would be in Harts Point or Bridger Jack Mesa non-WSAs wilderness characteristics areas. Given that the projection for drilling for oil and gas is about one well per year for all of the public lands within the Paradox Fold area, and that 30% of the development area encompasses non-WSA lands with wilderness characteristics open for leasing, up to one well per year – or up to 15 wells over a 15-year period – could be drilled within these areas. This could disturb up to 9.6 acres per year, or approximately 144 acres over the LOP within the non-WSA lands. No surface disturbance associated with oil and gas activities would occur in Gooseneck or Hatch/Harts/Lockhart non-WSA lands with wilderness characteristics or on over 85% of the Indian Creek non-WSA wilderness lands. Leasing and development within the Bridger Jack Mesa, Harts Point, Indian Creek, or Shay Mountain non-

WSA wilderness lands would cause that portion to lose its natural character and opportunities for solitude and primitive recreation due to exploration for and development of oil and gas resources. However, it is not anticipated that any of the areas would lose their wilderness characteristics in totality because of the small amount of acreage projected to be disturbed and the number of projected wells in this development area over the life of the RMP.

In the Monument Upwarp area, all of 14 and portions of six non-WSA lands with wilderness characteristics, comprising 407,870 acres, would remain open to leasing under standard stipulations or under CSU or TL stipulations. This is about 55% of the public lands within the development area. Approximately 57,130 acres, or about 8% of the lands in the development area, in all or portions of nine non-WSA lands with wilderness characteristics would be under an NSO stipulation or closed to leasing. This includes 1,080 acres in Comb Ridge (100% of this non-WSA); 3,310 acres in Dark Canyon (5%); 3,590 acres in Fish and Owl Creeks (15%); 100 acres in Grand Gulch (<1%); 5,200 acres in Lime Creek (100%); 12,760 acres in Mancos Mesa (21%); 12,600 acres in Nokai Dome (13%); 4,820 acres in San Juan River (63%); and 13,670 acres in Valley of the Gods (100%). Based on the percentage of non-WSA lands with wilderness characteristics and the existing and pending leases within those areas, the highest potential for leasing and/or development would be the same as in Alternative A: Nokai Dome, Dark Canyon, Mancos Mesa, and Grand Gulch non-WSA lands with wilderness characteristics. However, all of Comb Ridge, Lime Creek and Valley of the Gods non-WSAs would be protected from surface-disturbing oil- and gas-related activities, thus protecting their wilderness characteristics. Given that the projection for drilling for oil and gas is less than one well per year for all of the public land within the Monument Upwarp area, and that 63% of the development area encompasses non-WSA lands with wilderness characteristics, the projected one well per year – or up to eight wells over a 15-year period – could be drilled within the non-WSA lands. This could disturb up to 9.6 acres per year, or approximately 77 acres over the LOP. Leasing and development within these non-WSA wilderness characteristics lands could cause that portion to lose its natural character. Opportunities for solitude and primitive recreation due to exploration for and development of oil and gas resources would be broader than just for the 77 acres of direct surface-disturbing activities, and could impact these values for up to one-half mile from the ongoing activity. However, it is not anticipated that any of the areas would lose their wilderness characteristics in totality because of the small amount of acreage projected to be disturbed and the few projected wells in this development area over the life of the RMP.

In the Blanding Sub-basin area, all of four and a portion of one non-WSA land with wilderness characteristics, totaling 23,420 acres, would remain open to leasing under standard stipulations or under CSU or TL stipulations. This comprises over 5% of the public lands in the development area. Approximately 15,120 acres in three non-WSA lands with wilderness characteristics would be under an NSO stipulation or closed to leasing, which is about 4% of the public land development area. This includes 12,680 acres in Comb Ridge (100% of this non-WSA with wilderness characteristics); 360 acres in Lime Creek (100%); and 2,080 acres in Road Canyon (26%). Based on the percentage of non-WSA lands with wilderness characteristics and/or the existing and pending leases within those areas, the highest potential for leasing and/or development would be in Cross Canyon and Squaw and Papoose Canyon. Given that the projection for drilling for oil and gas is three wells per year for the all of the public land in the Blanding Sub-basin area, and that just over 5% of the development area encompasses non-WSA lands with wilderness characteristics open to leasing under standard, CSU, or TL stipulations, it

is still anticipated that up to one well per year could be drilled in the non-WSA lands because the Blanding Sub-basin area contains oil and gas fields and the majority of existing wells within the whole Monticello FO. This could disturb up to 9.6 acres per year, or up to 144 acres over the LOP; however, none of the surface-disturbing activities would be within Comb Ridge or Lime Creek non-WSA lands with wilderness characteristics, thus protecting those values. Leasing and development within these non-WSAs wilderness areas could cause that portion to lose its natural character and opportunities for solitude and primitive recreation due to exploration for and development of oil and gas resources. However, it is not anticipated that any of the areas would lose their wilderness characteristics in totality because of the small amount of acreage projected to be disturbed and the few projected wells in this development area over the life of the RMP.

Impacts from geophysical activities would be the same as Alternative A.

In summary, up to 38 wells over the 15-year RFD scenario, disturbing up 365 acres could occur in non-WSA lands with wilderness characteristics under this alternative. Eight of the 29 areas have a higher potential for these wells to be drilled based on existing leases and/or percentages of non-WSA lands within the development areas. All of Gooseneck, Hatch/Lockhart/Hart, Lime Creek, Valley of the Gods, Comb Ridge, and 85% of Indian Creek non-WSA lands with wilderness characteristics would be protected from surface-disturbing activities associated with oil and gas leasing due to an NSO stipulation or closed to leasing.

4.3.8.5.1.4. Alternative C

All or portions of 27 of the 29 non-WSA lands with wilderness characteristics, comprising 547,420 acres, would remain open to leasing and development under standard oil and gas stipulations or under CSU or TL stipulations (see Table 4.68). This comprises nearly 94% of these non-WSA lands. Six percent of the non-WSA lands with wilderness characteristics totaling 34,940 acres (all of two and portions of 10 non-WSAs wilderness areas) would be either closed to leasing or have an NSO stipulation on the leases. It is assumed that the various waivers, exceptions, and modifications under the NSO stipulation would not be granted because they would not be in concert with other resource goals and objectives in these areas.

In the Paradox Fold area, all or portions of the six non-WSA lands with wilderness characteristics, comprising 73,850 acres, would remain open to leasing under standard stipulations or under CSU or TL stipulations. This is about 29% of the public lands within the development area. Approximately 5,900 acres, which includes 690 acres in Bridger Jack Mesa (3% of the non-WSA); 970 acres in Gooseneck (27%), 4,140 acres in Indian Creek (18%), and 100 acres in Shay Mountain (2%) non-WSA lands with wilderness characteristics would have an NSO stipulation applied to the lease or be closed to leasing. This comprises about 2% of the development area. Based on the percentage of non-WSA lands with wilderness characteristics and the existing or pending leases within those six areas, the highest potential for leasing and/or development would be in Bridger Jack Mesa, Harts Point, or Indian Creek non-WSAs. Given that the projection for drilling for oil and gas is about two wells per year for all of the public lands in the Paradox Fold area, and that 31% of the development area encompasses non-WSA lands with wilderness characteristics open for leasing, up to one well per year – or up to 15 wells over a 15-year period – could be drilled within these areas. This could disturb up to 9.6 acres per year, or up to 144 acres over the LOP within the non-WSA wilderness lands. Leasing and development within the seven non-WSAs wilderness characteristics areas would cause that portion to lose its natural character. Opportunities for solitude and primitive recreation due to

exploration for and development of oil and gas resources would be broader than just for the 144 acres of direct surface-disturbing activities, and could impact these values for up to one-half mile from the ongoing activity. However, it is not anticipated that any of the areas would lose their wilderness characteristics in totality because of the small amount of acreage projected to be disturbed and the number of projected wells in this development area over the life of the RMP.

In the Monument Upwarp area, all of 15 and portions of six non-WSA lands with wilderness characteristics, comprising 437,860 acres, would remain open to leasing under standard stipulations or under CSU or TL stipulations. This is about 59% of the public lands within the development area. Approximately 27,140 acres, or about 4% of the lands in the development area, in all of two and portions of six non-WSA lands with wilderness characteristics would be under an NSO stipulation or closed to leasing. This includes 3,350 acres in Dark Canyon (5% of this non-WSA); 70 acres in Grand Gulch (<1%); 5,200 acres in Lime Creek (100%); 250 acres in Mancos Mesa (<1%); 420 acres in Nokai Dome (<1%); 4,180 acres in San Juan River (55%); and 13,670 acres in Valley of the Gods (100%). Based on the percentage of non-WSA lands with wilderness characteristics and the existing and pending leases within those areas, the highest potential for leasing and/or development would be the same as in Alternative A: in Nokai Dome, Dark Canyon, Mancos Mesa, and Grand Gulch non-WSA lands with wilderness characteristics. However, all of Lime Creek and Valley of the Gods non-WSAs would be protected from surface-disturbing oil- and gas-related activities, thus protecting their wilderness characteristics. Given that the projection for drilling for oil and gas is less than one well per year for the public lands within the Monument Upwarp area, and that 63% of the development area encompasses non-WSA lands with wilderness characteristics, the projected one well per year – or up to nine wells over a 15-year period – could be drilled within the non-WSA lands. This could disturb up to 9.6 acres per year, or approximately 86 acres over the LOP. Leasing and development within these non-WSA lands could cause that portion to lose its natural character. Opportunities for solitude and primitive recreation due to exploration for and development of oil and gas resources would be broader than just for the 86 acres of direct surface-disturbing activities, and could impact these values for up to one-half mile from the ongoing activity. However, it is not anticipated that any of the areas would lose their wilderness characteristics in totality because of the small amount of acreage projected to be disturbed and the few projected wells in this development area over the life of the RMP.

In the Blanding Sub-basin area, all of five and a portion of one non-WSA lands with wilderness characteristics, totaling 36,640 acres, would remain open to leasing under standard stipulations or under CSU or TL stipulations. This comprises over 9% of the public lands in the development area. Approximately 1,900 acres in two non-WSA lands with wilderness characteristics would be under an NSO stipulation or closed to leasing, which is less than 1% of the public lands within this development area. This includes 360 acres in Lime Creek (100% of the non-WSA) and 1,540 acres in Road Canyon (24%). Based on the percentage of non-WSA lands with wilderness characteristics and/or the existing and pending leases within those areas, the highest potential for leasing and/or development would be in Comb Ridge, Cross Canyon, and Squaw and Papoose Canyon. Given that the projection for drilling for oil and gas is three wells per year for the all of the public lands within the Blanding Sub-basin area, and that just over 9% of the development area encompasses non-WSA lands with wilderness characteristics open to leasing under standard stipulations, CSU, or TL stipulations, it is still anticipated that up to one well per year could be drilled in the non-WSA lands because the Blanding Sub-basin area contains oil and gas fields

and the majority of existing wells within the Monticello PA. This could disturb up to 9.6 acres per year, or approximately 144 acres over the LOP, however, none of the surface-disturbing activities would be within Lime Creek non-WSA lands with wilderness characteristics, thus protecting those values. Leasing and development within these non-WSA wilderness lands could cause that portion to lose its natural character. Opportunities for solitude and primitive recreation due to exploration for and development of oil and gas resources would be broader than just for the 144 acres of direct surface-disturbing activities, and could impact these values for up to one-half mile from the ongoing activity. However, it is not anticipated that any of the areas would lose their wilderness characteristics in totality because of the small amount of acreage projected to be disturbed and the few projected wells in this development area over the life of the RMP.

Impacts from geophysical activities would be the same as Alternative A.

In summary, up to 39 wells over the 15-year RFD scenario, disturbing up to 374 acres could occur in non-WSA lands with wilderness characteristics under this alternative. Ten of the 29 areas have a higher potential for these wells to be drilled based on existing leases and/or percentages of non-WSA wilderness lands within the development areas. However, all of Lime Creek and Valley of the Gods non-WSA lands with wilderness characteristics would be protected from surface-disturbing activities associated with oil and gas leasing due to an NSO stipulation.

4.3.8.5.1.5. Alternative D

All of the 29 non-WSA lands with wilderness characteristics would remain open to leasing and development under standard oil and gas stipulations or under CSU or TL stipulations under this alternative.

In the Paradox Fold area, all six non-WSA lands with wilderness characteristics would remain open to leasing under standard stipulations or under CSU or TL stipulations (79,750 acres). This is 31% of all of the public lands within this development area. Based on the percentage of non-WSA lands with wilderness characteristics and the existing leases within those areas, the highest potential for leasing and/or development would be in Bridger Jack Mesa, Indian Creek, and Harts Point. Because well projections under this alternative are similar to Alternative A, and generally the same percentage of lands in the development area encompass non-WSA lands with wilderness characteristics, the same analysis portraying development of one well in this area would be applied.

In the Monument Upwarp area, all 23 non-WSA lands with wilderness characteristics would remain open to leasing under standard stipulations or under CSU or TL stipulations (465,000 acres). This is 63% of the public lands in the whole development area. Based on the percentage of non-WSA lands with wilderness characteristics and the existing leases within those areas, the highest potential for leasing and/or development would be in Dark Canyon, Grand Gulch, Mancos Mesa, and Nokai Dome. Because well projections under this alternative are generally the same as in Alternative C, and generally the same percentage of lands in this development area encompass non-WSA lands with wilderness characteristics, the same analysis portraying development of one well would be applied.

In the Blanding Sub-basin area, all seven non-WSA lands with wilderness characteristics, totaling 38,540 acres (or 9% of the public lands in the development area), would remain open to leasing under standard stipulations or under CSU or TL stipulations. Based on the percentage of

non-WSA lands with wilderness characteristics and/or the existing and pending leases within those areas, the highest potential for leasing and/or development would be in Cross Canyon, Squaw and Papoose Canyon, and the east side of Comb Ridge non-WSA lands with wilderness characteristics. Given that the projection for drilling for oil and gas is generally the same as Alternative A and the same acreage is available for leasing, the same assumptions and analysis would apply.

Impacts from geophysical activities would be the same as Alternative A.

In summary, up to 39 wells over the 15-year RFD scenario, disturbing up to 374 acres could occur in non-WSA lands with wilderness characteristics under this alternative. All areas would remain available for leasing and development. Ten of the 29 non-WSAs have a higher potential for these wells to be drilled based on their large acreage and existing leases within the development areas.

4.3.8.5.1.6. Alternative E

Under Alternative E, all lands within the non-WSA lands with wilderness characteristics would be closed to leasing. However, existing leases still remain in six of the 29 non-WSA lands with wilderness characteristics. Development of these leases could compromise wilderness characteristics values in these areas. Below is a breakdown of how or where that may occur based on the development areas and the predicted surface disturbance for oil and gas activity under this alternative. Those non-WSA lands with wilderness characteristics that are not currently leased would be fully protected under the leasing closure under this alternative. This would preserve the naturalness of the areas and maintain the outstanding opportunities for primitive recreation and solitude.

In the Paradox Fold and Fault Belt area, all non-WSA lands with wilderness characteristics would be closed to future leasing. However, portions of two non-WSA lands with wilderness characteristics are under existing leases comprising 70 acres. Based on the size of the leases in the non-WSA lands with wilderness characteristics, the highest potential for development could be in Harts Point and Indian Creek non-WSA wilderness areas. The projection for drilling for oil and gas is two wells per year for the all of the public lands within the development area under this alternative. The leased lands comprise far less than 1% of the public lands within the development area. It is not expected that these leases would be developed based on this low RFD and the amount of other public lands available for leasing and development. However, if they are developed – and one well would, on average, cause surface disturbance on up to 9.6 acres – far less than 1% of each of the non-WSAs wilderness lands would be impacted. Development of these small, leased areas within the non-WSA wilderness lands could cause that portion to lose its natural character and opportunities for solitude and primitive recreation due to exploration for and development of oil and gas resources.

In the Monument Upwarp area, all non-WSA lands with wilderness characteristics would be closed to future leasing. However, portions of six of the 23 non-WSA lands with wilderness characteristics are under existing leases comprising 3,340 acres. Based on the size of the leases within the non-WSA lands with wilderness characteristics, the highest potential for development of those leases could be in Grand Gulch or Harmony Flat. The RFD projection for drilling for oil and gas is less than one well per year (or seven wells over the next 15 years) for all of the public lands in this development area under this alternative. The leased lands comprise far less than 1%

of the public lands within the development area. However, because of the amount of public land that would be closed to leasing under this alternative in this development area, it is assumed that the leases within any of the six areas could be developed. If they are developed – and one well would, on average, cause surface disturbance on up to 9.6 acres – far less than 1% of each of the non-WSA wilderness areas would be impacted. Even if all of the projected seven wells over the next 15 years are developed in the 1,600 acres leased in Grand Gulch, the total disturbance would be 67 acres within this 55,240-acre area (far less than 1%). Development of any of these small leased areas within the non-WSA wilderness characteristics lands could cause that portion to lose its natural character. Opportunities for solitude and primitive recreation due to exploration for and development of oil and gas resources would be broader than just for the 67 acres of direct surface-disturbing activities, and could impact these values for up to one-half mile from the ongoing activity. However, the majority of the areas would maintain their wilderness characteristics integrity.

In the Blanding Sub-basin area, all non-WSA lands with wilderness characteristics would be closed to future lease. However, portions of two of the seven non-WSA lands with wilderness characteristics are under existing leases comprising 1,030 acres. Both of these non-WSAs, Cross Canyon and Squaw and Papoose Canyon, are vulnerable to development of the existing leases since they are near an existing oil and gas field and they lie within an area of the Monticello FO that has had the most oil and gas activity. The leases within the development area, however, comprise far less than 1% of the public lands within this development area. Given that the projection for drilling for oil and gas is three wells per year for the whole 406,770 acres of public land within the Blanding Sub-basin area, and only 1,030 acres is available for development within the non-WSA wilderness areas, it not anticipated that any wells would be drilled in the non-WSA wilderness characteristics lands. If developed, however, it could cause these non-WSA wilderness areas to lose a small portion of their natural character and opportunities for solitude and primitive recreation due to exploration for and development of oil and gas resources. However, it is not anticipated that any of the areas would lose their wilderness characteristics in totality because of the small amount of acreage projected to be disturbed and the few projected wells in this development area over the 15-year scenario.

Geophysical operations would be considered if they are not surface disturbing (i.e., heliportable drilling, walked lines, etc.) See Appendix A for a definition of surface-disturbing activities. Impacts to wilderness characteristics would be negligible except for the actual time of operations. Noise and movement associated with the activities could temporarily disrupt the opportunities for solitude and primitive recreation.

In summary, existing leases within nine non-WSA lands would allow for development on those leases; however, it is not anticipated that development would occur in any of the areas except possibly within the Monument Upwarp area due to the limited amount of land that would remain available for leasing. All other non-WSA lands with wilderness characteristics would be protected from oil and gas leasing and developments activities by closing the areas to future leasing.

4.3.8.5.1.7. Conclusion

Under each alternative, the following percentage of non-WSA lands with wilderness characteristics would remain open to leasing and development under standard oil and gas stipulations or under CSU or TL stipulations:

- Alternative A, 80% of all non-WSA lands (468,550 acres)
- Alternative B, 83% of all non-WSA lands (482,980 acres)
- Alternative C, 94% of all non-WSA lands (547,420 acres
- Alternative D, 100% of the non-WSA lands (582,360 acres)
- Alternative E, 0% of the 29 non-WSA land (0 acres)

Based on the low RFDs for the Monticello PA, up to three wells could be drilled per year in the non-WSA wilderness characteristics lands that are open to leasing and development under Alternatives A, B, C, and D. It is assumed that 9.6 acres of surface disturbance would be associated with each well drilled. Under all four alternatives, the maximum amount of surface disturbance would be between 355 acres and 374 acres over the 15-year RFD scenario. Although oil and gas well development would cause surface-disturbing activities that may result in loss of wilderness characteristics in some areas, it is not expected under any alternative that the amount of disturbance based on well projections and the scattered nature of the wells would be substantial. Although small acreages may be lost in some of the non-WSA lands with wilderness characteristics, it is not predicted that any of the areas would lose their wilderness characteristics value in whole.

4.3.8.5.2. SALABLE MINERALS

4.3.8.5.2.1. Impacts Common to All Alternatives

Salable minerals are under the same restrictions as oil and gas resources. The same non-WSA lands with wilderness characteristics that are open under standard stipulations or minor constraints would be available for salable mineral disposal, just as those non-WSA lands either closed to leasing or under NSO stipulations would be unavailable for salable mineral disposal (see Table 4.68). The non-WSA lands with wilderness characteristics with the highest potential for sand and gravel occurrence within 3 miles of a road overlie portions of the Comb Ridge, Harts Point, Valley of the Gods, Mancos Mesa, Nokai Dome, Upper Red Canyon, Fort Knocker Canyon, and Gravel and Long Canyon areas. Currently there is only one sand and gravel pit contiguous to the northernmost end of Comb Ridge. All or portions of 26 non-WSA lands with wilderness characteristics have high potential for building stone occurrence. None of the non-WSA lands with wilderness characteristics are currently near a building stone quarry. Those non-WSAs that do not intersect with the building stone resource are Grand Gulch, Lime Creek and Valley of the Gods. The San Juan River non-WSA land with wilderness characteristics has a high potential for limestone occurrence, and there is a limestone quarry near the wilderness characteristic area.

4.3.8.5.2.2. Alternative A

All or portions of 28 of the 29 non-WSA lands with wilderness characteristics, comprising 468,550 acres, would remain open to salable mineral disposal. This comprises over 80% of these non-WSA lands. The Comb Ridge non-WSA would remain open to sand and gravel disposal and the San Juan River non-WSA would be open to limestone disposal. Where surface disturbance would occur, naturalness and opportunities for primitive recreation and solitude would be foregone. If the gravel pits or building rock quarries have associated support facilities, including roads and powerlines, soil and vegetation disturbance, the presence of permanent structures

would degrade the natural characteristics of non-WSA lands with wilderness characteristics. Noise from the operation of sand and gravel pits or rock quarries, including the presence of work crews, vehicles, and equipment, would degrade opportunities for solitude and conflict with primitive recreational opportunities in proximity to industrial development. As recreational visitors move away from the sources of development, the sights and sounds of development would diminish. However, it can be expected that sights and sounds from development would reduce opportunities for solitude and primitive and unconfined recreation up to one-half mile beyond the direct loss of natural character, depending on topography.

Twenty percent of the non-WSA lands with wilderness characteristics totaling 113,810 acres (all of one and portions of 18 non-WSAs) would be closed to salable mineral disposal; thus, the wilderness characteristics of those areas would be maintained.

4.3.8.5.2.3. Alternative B

All or portions of 25 of the 29 non-WSA lands with wilderness characteristics areas, comprising 482,980 acres, would remain open to salable mineral disposal. This comprises nearly 83% of these non-WSA lands. Where surface disturbance would occur, naturalness and opportunities for primitive recreation and solitude would be foregone. The same impacts to wilderness values as described under Alternative A would ensue. Seventeen percent of the non-WSA lands with wilderness characteristics totaling 99,380 acres (all of five and portions of 11 non-WSAs) would be closed to salable mineral disposal, thus, the wilderness characteristics of those areas would be maintained. The Comb Ridge non-WSA would be closed to sand and gravel disposal and the San Juan River non-WSA would be closed to limestone disposal.

4.3.8.5.2.4. Alternative C

All or portions of 27 of the 29 non-WSA lands with wilderness characteristics, comprising 547,420 acres, would remain open to salable mineral disposal. This comprises nearly 94% of these non-WSA lands. The Comb Ridge non-WSA would remain open to sand and gravel disposal. Where surface disturbance would occur, naturalness and opportunities for primitive recreation and solitude would be foregone. The same impacts to wilderness values as described under Alternative A would ensue. Six percent of the non-WSA lands with wilderness characteristics totaling 34,940 acres (all of two and portions of 10 non-WSAs) would be closed to salable mineral disposal, thus the wilderness characteristics of those areas would be maintained. The San Juan River non-WSA would be closed to limestone disposal.

4.3.8.5.2.5. Alternative D

All of the 29 non-WSA in the 582,360 acres of non-WSA lands with wilderness characteristics would remain open to disposal of salable minerals under standard conditions or minor constraints. Where surface disturbance would occur, naturalness and opportunities for primitive recreation and solitude would be adversely affected, with the same impacts to wilderness values as described under Alternative A.

4.3.8.5.2.6. Alternative E

Under Alternative E, all lands within the non-WSA lands with wilderness characteristics would be closed to salable mineral disposal. These areas would be fully protected under the salable

mineral closure under this alternative. This would preserve the naturalness of the areas and maintain the outstanding opportunities for primitive recreation and solitude.

4.3.8.5.3. LOCATABLE MINERALS

4.3.8.5.3.1. Impacts Common to All Alternatives

Portions of 17 non-WSA lands with wilderness characteristics are located within moderate to high potential areas for uranium/vanadium and are within historic mining districts: Bridger Jack Mesa (8,670 acres within the non-WSA), Butler Wash (80 acres), Cheesebox Canyon (12,440 acres), Comb Ridge (470 acres), Fort Knocker Canyon (1,180 acres), Gooseneck (3,330 acres), Gravel and Long Canyon (19,270 acres), Hammond Canyon (340 acres), Harmony Flat (180 acres), Harts Point (18,860 acres), Hatch/Lockhart/Hart (1,520 acres), Indian Creek (10,020 acres), Red Rock Plateau (15,480 acres), Shay Mountain (5,380 acres), Squaw and Papoose Canyon (3,570 acres), Upper Red Canyon (9,550 acres), and White Canyon (1,170 acres). In all, 111,510 acres within non-WSA lands with wilderness characteristics, or 19% of the non-WSA lands are within moderate to high potential areas for uranium/vanadium occurrence.

Future development of this resource is expected to occur within the historic mining districts, and currently there are over 7,000 mining claims for this resource, many within the non-WSA lands with wilderness characteristics within the Monticello FO. If new mining development occurs within these areas, direct loss of wilderness characteristics would be unavoidable due to major surface-disturbing activities. To date, there has been no new activity associated with the existing claims within the non-WSA lands. New mining claims are filed continually, however, and changes could occur that would impact lands with wilderness characteristics by denuding vegetation, moving soils, and disrupting the naturalness of the area. It would also create loss of primitive recreation activities and solitude for those areas where new mining activities may occur. For purposes of analysis, it is assumed that development for uranium/vanadium mining could occur anywhere within the moderate to high development potential areas in the historic mining districts.

4.3.8.5.3.2. Alternative A

There are two non-WSA lands with wilderness characteristics within historic mining districts for uranium/vanadium, totaling 4,280 acres, which intersect with proposed mineral withdrawals:

- 390 acres of the Gooseneck non-WSA wilderness characteristics area
- 3,890 acres of the Indian Creek non-WSA wilderness characteristics area

The proposed mineral withdrawals would preserve the naturalness and opportunities for both solitude and primitive forms of recreation in each of these areas by preventing mining claims and the noise and presence of surface disturbance, people, vehicles, and equipment associated with mining in those areas. However, if mining claims currently exist in these areas, wilderness characteristics could be at risk of development for uranium/vanadium mining as described in Section 4.3.8.5.3.1, Locatable Minerals - Impacts Common To All Alternatives.

4.3.8.5.3.3. Alternative B

Three non-WSA lands with wilderness characteristics areas within historic mining districts for uranium/vanadium, totaling 13,505 acres, intersect with proposed mineral withdrawals:

- 3,330 acres of the Gooseneck non-WSA wilderness characteristics area
- 155 acres of the Harts Point non-WSA wilderness characteristics area
- 10,020 acres of the Indian Creek non-WSA wilderness characteristics area

The proposed mineral withdrawals would preserve the naturalness and opportunities for both solitude and primitive forms of recreation by preventing mining claims and the noise and presence of surface disturbance, people, vehicles, and equipment associated with mining in those areas. However, if mining claims currently exist in these areas, wilderness characteristics could be at risk of development for uranium/vanadium mining as described in Section 4.3.8.5.3.1, Impacts Common To All Alternatives.

4.3.8.5.3.4. Alternative C

Same impacts as Alternative A because management decisions are the same.

4.3.8.5.3.5. Alternative D

None of the proposed withdrawals under this alternative would intersect with non-WSA lands with wilderness characteristics within the historic mining districts for uranium/vanadium. All non-WSA lands within the historic mining areas could be claimed and mined. If new mining development occurs within these areas, direct loss of wilderness characteristics would be unavoidable due to major surface-disturbing activities.

4.3.8.5.3.6. Alternative E

All non-WSA lands with wilderness characteristics would be proposed for mineral withdrawal under this alternative. However, uranium/vanadium mining claims currently exist in the majority of the historic mining districts and are valid existing rights. If new mining development occurs within these areas, direct loss of wilderness characteristics would be unavoidable due to major surface-disturbing activities.

4.3.8.6. Impacts of Non- WSA Lands with Wilderness Characteristics Decisions on Non-WSA Lands with Wilderness Characteristics

There are 29 areas, outside of existing WSAs, totaling 582,360 acres, in the Monticello PA that were inventoried and found to have wilderness characteristics. See Table 3.19 for a list of areas by name and acreage with non-WSA wilderness characteristics and Map 28 for locations and names of non-WSA wilderness characteristics lands.

4.3.8.6.1. Alternatives A, B, C, and D

Under these alternatives, there are no specific actions prescribed to directly protect or enhance the naturalness and opportunities for solitude or primitive recreation in the non-WSA wilderness characteristics lands. Thus, there are no specific management decisions for non-WSA lands to protect the natural character, wilderness values, or opportunities for solitude or primitive recreation of the non-WSA lands with wilderness characteristics.

4.3.8.6.2. ALTERNATIVE E

Under Alternative E, all non-WSA lands with wilderness characteristics would be managed by the following decisions:

- VRM Class I objectives
- Closed to commercial or personal woodland harvest
- Closed to OHV use
- Retain lands in public ownership
- ROW exclusion areas
- Proposed for withdrawal from locateable mineral entry
- Closed to mineral leasing
- Closed to disposal of mineral materials

These decisions would prevent surface disturbances that would degrade the natural character of the non-WSA wilderness lands, prevent surface disturbances and uses that would be incompatible with primitive recreation activities, and protect the setting needed to support the experience of solitude. These management decisions would protect the natural character of all of the non-WSA wilderness lands, and maintain the opportunities for solitude or primitive recreation that exists within these areas.

4.3.8.7. IMPACTS OF PALEONTOLOGICAL RESOURCE DECISIONS ON NON- WSA LANDS WITH WILDERNESS CHARACTERISTICS

Paleontology decisions common to all alternatives provide for mitigation of impacts to fossils resulting from BLM-authorized activities, interpretation of fossils, collection of common invertebrate and plant fossils, and protection of significant vertebrate and invertebrate fossils. As with cultural resources, knowing more about the paleontological resources of the area, interpreting the resource in an appropriate fashion, viewing fossil sites in the non-WSA lands with wilderness characteristics, and protecting significant fossils from collection or damage would add to the enjoyment of these areas for primitive recreational purposes. Protection of fossils would add to the character of the setting that supports these recreational opportunities. However, collection of even common invertebrate fossils, while providing a primitive recreational experience, would remove an element of the natural landscape.

4.3.8.8. IMPACTS OF RECREATION DECISIONS ON WSA LANDS WITH WILDERNESS CHARACTERISTICS

4.3.8.8.1. SPECIAL RECREATION MANAGEMENT AREAS (SRMAS)

4.3.8.8.1.1. Alternative A

Three existing SRMAs overlie all or portions of 13 non-WSA lands with wilderness characteristics. All other non-WSA wilderness lands would be managed as an Extensive Recreation Management Area (ERMA).

San Juan River SRMA: A portion (4,240 acres) of the San Juan River non-WSA land with wilderness characteristics lies within the San Juan River SRMA. The SRMA is more than double

the size of the non-WSA, and the primary objective for management of this scenic area is for outstanding recreational opportunities and visitor experience for back-country river running, camping, and cultural appreciation. Management under this alternative allows for motorized boating, 40,000 user days per year, restricted camping areas along the river, and vehicle camping in the uplands. Portions of the SRMA would be open to leasing under standard stipulations and under NSO, and a portion would be recommended for locatable mineral withdrawal. The area would be a mixture of open, closed, and limited OHV use. The SRMA would remain closed to woodland product harvest. The SRMA management would partially protect the natural landscape and opportunities for solitude and primitive forms of recreation in that portion of the San Juan non-WSA that overlies the SRMA, but would disrupt the opportunity for solitude and primitive recreation along the river due to motorized boat noise and the number of user days per year allowed on the river. Motorized vehicle activity, especially cross-county driving, would reduce the naturalness of the area and allow for disruption of the opportunities for solitude and primitive recreation when vehicles are in the vicinity. Some areas would remain open for surface disturbance associated with leasing activity which, if leased and developed, could cause loss of naturalness within the non-WSA land.

Canyon Basin SRMA: This 214,390-acre SRMA envelopes portions of the Bridger Jack Mesa (22,380 acres), Butler Wash (1,530 acres), Dark Canyon (52,290 acres), Harts Point (14,070 acres), Indian Creek (14,750 acres), and Shay Mountain (6,450 acres) non-WSA lands with wilderness characteristics. The purpose of this large SRMA is to provide outstanding recreational opportunities and experiences. Management allows for creating designated parking areas for rock climbers and firewood cutting. There are no group limits or group size limits and the majority of the area is open to dispersed camping and vehicle use, including dispersed camping in many areas along the Indian Creek Corridor. Detailed management for this SRMA is not proposed that would protect or enhance the wilderness characteristics of these areas. In fact, allowing for no group size limits or group limits and allowing dispersed vehicle camping throughout the SRMA would detract from the solitude and primitive recreation experiences of the non-WSA lands. Surface-disturbing activities such as development of new parking areas or cutting firewood would eliminate or detract from the naturalness of the area.

Cedar Mesa SRMA: There are 109,700 acres in six non-WSA lands with wilderness characteristics that overlie the Cedar Mesa SRMA (in the other RMP alternatives the name is changed to the Grand Gulch SRMA). This includes 640 acres in Comb Ridge, 23,560 acres in Fish and Owl Creeks, 54,970 acres in Grand Gulch, 5,560 acres in Lime Creek, 11,290 acres in Road Canyon, and 13,670 acres in Valley of the Gods non-WSA lands with wilderness characteristics. This is all of the acreage in Lime Creek and Valley of the Gods and almost all acreage in Fish and Owl Creeks, Grand Gulch and Road Canyon non-WSAs. The objective for management of this SRMA is to provide outstanding recreational opportunities and visitor experience to engage in back-country, front-country and rural cultural appreciation recreation. Management includes restrictions on numbers of visitors, commercial uses and numbers, and equestrian use in certain areas of the SRMA, as well as restrictions on camping and limits of days and people. There are numerous implementation-level decisions included in the management prescriptions for this SRMA, the most salient, and the ones most affecting wilderness characteristics being:

- Open to commercial and/or private firewood cutting
- No limits on recreation day-use permits

- Mesa Top Day Use, no group size limits
- On Mesa Top Overnight Camping, open to dispersed camping with no group size limit
- In Canyons for Day Use, private and commercial group size limit of 12, including stock trips
- In Canyon for Day Use, no limit on numbers of parties for private or commercial use per day per trailhead
- In Canyons Overnight Camping, group size limit of 12
- In Canyons Overnight Camping, commercial trips limited to one per day per trailhead
- Trailhead allocations range from 22 -26 overnight visitors per day

These prescriptions would affect the non-WSA lands with wilderness characteristics primarily due to the numbers of people, group size limits, and commercial activities allowed to occur in this SRMA under this alternative. The opportunities for solitude and primitive recreation would be diminished because a person seeking that experience would, inevitably, meet other people, groups, and commercial outfitting and stock activities. In addition, allowing private and commercial woodcutting within these areas would deter from the naturalness of the area by leaving cross-county vehicle tracks, tree stumps and litter from cutting limbs. The noise associated with chain saws and vehicles would, temporarily impact the opportunities for solitude, as well.

None of the other non-WSA lands with wilderness characteristics are within SRMAs under this alternative, therefore, there would be no recreation management objectives or focus within those areas. Because these lands are not within a managed SRMA with specific recreation objectives, they would be vulnerable to surface-disturbing uses including commercial permitting activities, special recreation permits, new road construction, and other activities that could impact the natural values and primitive recreational opportunities and solitude that currently exist in those areas.

4.3.8.8.1.2. Alternative B

Five SRMAs would be designated that overlie all or portions of 16 non-WSA lands with wilderness characteristics. All other non-WSA lands would be managed as an ERMA.

San Juan River SRMA: A portion (4,120 acres) of the San Juan River non-WSA land with wilderness characteristics lies within the 10,203-acre San Juan River SRMA. The primary objective for management of this scenic area is for outstanding recreational opportunities and visitor experience for back-country river running, camping, and cultural appreciation. Management under this alternative allows for no motorized boating, 30,000 user days per year, restricted camping areas along the river, restricted vehicle camping in the uplands, leasing subject to NSO stipulations. The area is closed to mineral disposal and recommended for locatable mineral withdrawal. The SRMA would be closed to OHV use in some areas and limited to designated routes in others. The area would remain closed to woodland product harvest. The SRMA management would protect the natural landscape and opportunities for solitude and primitive forms of recreation in that portion of the San Juan non-WSA that overlies the SRMA. Compared to Alternative A, motorized boating would be prohibited and user days would be reduced by 10,000. This would allow for greater opportunities to experience solitude and primitive recreation. Vehicle use on designated routes would disrupt the opportunities for solitude and primitive recreation when vehicles are in the vicinity, but opportunities would return

when the vehicle noise has subsided. Surface-disturbing activities associated with minerals would not be allowed, thereby protecting and enhancing the wilderness characteristics of the area.

Indian Creek SRMA: This 89,271-acre SRMA (formerly a portion of the Canyon Basins SRMA in Alternative A) encompasses portions of four non-WSA lands with wilderness characteristics totaling 47,390 acres: Bridger Jack Mesa (22,780 acres), Harts Point (8,970 acres), Indian Creek (12,980 acres), and Shay Mountain (960 acres). Management prescriptions provide for the SRMA to be closed to commercial and private firewood cutting and only allows vehicle camping in designated sites only. The majority of use within this SRMA is outside of the non-WSA lands with wilderness characteristics, although some rock climbing does occur. Closing the area to private or commercial firewood cutting would protect the naturalness of the area and would not allow for noise and activities associated with this action. Allowing camping only in designated sites would focus vehicle camping to specific areas where disturbance has already occurred and not allow for new surface disturbance, thereby protecting the naturalness of the non-WSA lands.

Dark Canyon SRMA: This 30,820-acre SRMA (formerly a portion of the Canyon Basins SRMA) encompasses small portions of the Dark Canyon (1,563 acres) and Gravel and Long Canyon (220 acres) non-WSA lands with wilderness characteristics. Group size limits include 10 people in a private party and 12 people in a commercial party. Only one commercial trip per week is allowed and no more that 15 private users per day would be allowed. Camping would only be allowed in designated sites. The SRMA is closed to private or commercial firewood cutting which would protect the naturalness of the non-WSA lands. Because the topography is rough with numerous canyons bisecting the SRMA, and the limits on private and commercial use is low, the potential to experience solitude and a primitive recreation experience is high. Closing the area to firewood cutting would protect its naturalness. In addition, designating camping areas would also protect the SRMA from additional surface-disturbing activity, thereby protecting the naturalness of the non-WSA lands.

Grand Gulch Plateau SRMA: There are 109,700 acres in six non-WSA lands with wilderness characteristics that overlie the Grand Gulch Plateau SRMA (formerly the Cedar Mesa SRMA). This includes 640 acres in Comb Ridge, 23,560 acres in Fish and Owl Creeks, 54,980 acres in Grand Gulch, 5,560 acres in Lime Creek, 11,290 acres in Road Canyon, and 13,670 acres in Valley of the Gods non-WSA lands with wilderness characteristics. This is all of the acreage in Lime Creek and Valley of the Gods and almost all acreage in Fish and Owl Creeks, Grand Gulch and Road Canyon non-WSAs. The objective for management of this SRMA is to provide outstanding recreational opportunities and visitor experience to engage in back-country, front-country and rural cultural appreciation recreation. Management includes restrictions on numbers of visitors, commercial uses and numbers, and equestrian use in certain areas of the SRMA, as well as restrictions on camping and limits of days and people. There are numerous planning- and implementation-level decisions included in the management prescriptions for this SRMA, the most salient, and the ones most affecting wilderness characteristics being:

- Closed to commercial and/or private firewood cutting
- Available for watershed, range, and wildlife improvements and vegetation treatments
- 25 person limit on recreation day-use permits
- Mesa Top Day Use, 10 person group size limits

- On Mesa Top Overnight Camping, designated primitive campsites, with group size limit of 12
- In Canyons for Day Use, private and commercial group size limit of 10, one commercial group allowed every other day, no stock trips allowed in canyon
- In Canyons Overnight Camping, group size limits of 6 for private and 10 for commercial; commercial trips limited to one per day per trailhead
- Trailhead allocations are all 16 overnight visitors per day

These prescriptions would affect the non-WSA lands with wilderness characteristics primarily due to the numbers of people, group size limits, and commercial activities allowed to occur in this SRMA under this alternative. Compared to Alternative A, the opportunities for solitude and primitive recreation would be augmented because a person seeking that experience would meet fewer people, groups, and commercial outfitting and stock activities. Closing the area to woodcutting activities would maintain the naturalness of the non-WSAs. Impacts to naturalness could occur, however, depending on the types of watershed, range, wildlife or vegetation treatments that would be implemented in these areas. If by biological, chemical, or fire methods, the area would have temporary visual impacts, but surface disturbance would be limited and the treatments would have a natural appearance. If by mechanical methods, surface disturbance would be evident and visual imprints of man would be apparent. During the time of the activities, the opportunities for solitude and primitive recreation would be temporarily affected due to noise and human activities in the area.

White Canyon SRMA: This 2,828-acre SRMA encompasses small portions of four non-WSA lands with wilderness characteristics: 400 acres in Cheesebox Canyon, 1,258 acres in Fort Knocker Canyon, 430 acres in Gravel and Long Canyon, and 960 acres in Sheep Canyon. Management would exclude the area from private or commercial firewood cutting, which would protect its naturalness values. Primitive campgrounds would be developed at Soldier and Gravel Crossings and implementation-level actions such as packing out human waste and requiring fire pans would be enacted. Developing primitive campgrounds would reduce the naturalness of those areas.

None of the other non-WSA lands with wilderness characteristics are within SRMAs under this alternative, therefore, there would be no recreation management objectives or focus within those areas. Because these lands are not within a managed SRMA with specific recreation objectives, they would be vulnerable to surface-disturbing uses including commercial and special recreation permit activities, new road construction, and other uses that could impact the natural values and primitive recreational opportunities and solitude that currently exist in those areas.

4.3.8.8.1.3. Alternative C

Five SRMAs would be designated that overlie all or portions of 16 non-WSA lands with wilderness characteristics. All other non-WSA lands would be managed as an ERMA.

San Juan River SRMA: A portion (3,810 acres) of the San Juan River non-WSA land with wilderness characteristics lies within the 9,859-acre San Juan River SRMA. The primary objective for management of this scenic area is for outstanding recreational opportunities and visitor experience for back-country river running, camping, and cultural appreciation. Management under this alternative allows for motorized boating, 40,000 user days per year,

restricted camping areas along the river, restricted vehicle camping in the uplands and leasing subject to NSO stipulations. The area is closed to mineral disposal and recommended for locatable mineral withdrawal. The SRMA would be closed to OHV use in some areas and limited to designated routes in others. The area would remain closed to woodland product harvest. The SRMA management would partially protect the natural landscape and opportunities for solitude and primitive forms of recreation in that portion of the San Juan non-WSA that overlies the SRMA. Like Alternative A, motorized boating would be allowed on the river, and 40,000 user days would be permitted. This could impact the opportunity for solitude and primitive recreation by having so much human activity on the river, as well as noise from motorized boat engines. Like Alternative B, surface-disturbing activities associated with minerals would be precluded, protecting the natural values of this area. In addition, fewer non-WSA lands would be protected because the SRMA would be smaller than Alternative B and the non-WSA acreage overlying it would be reduced by 310 acres.

Dark Canyon SRMA: This 30,820-acre SRMA (formerly a portion of the Canyon Basins SRMA) encompasses small portions of the Dark Canyon (1,563 acres) and Gravel and Long Canyon (220 acres) non-WSA lands with wilderness characteristics. Group size limits include 15 people in a private party and 15 people in a commercial party. Three commercial trips per week are allowed and no more than 20 private users per day would be allowed. Camping would only be allowed in designated sites. The SRMA is closed to private or commercial firewood cutting which would protect the naturalness of the non-WSA lands. Although an increased level of human use would be allowed in this area from Alternative B, because the topography is rough with numerous canyons bisecting the SRMA the potential to experience solitude and a primitive recreation experience is high, even with the increased level of human use. In addition, designating camping areas would also protect the SRMA from additional surface-disturbing activity, thereby protecting the naturalness of the non-WSA lands.

Indian Creek SRMA: This 89,271-acre SRMA (formerly a portion of the Canyon Basins SRMA in Alternative A) encompasses portions of four non-WSA lands with wilderness characteristics totaling 47,390 acres: Bridger Jack Mesa (22,780 acres), Harts Point (8,970 acres), Indian Creek (12,980 acres), and Shay Mountain (960 acres). Management prescriptions would be the same as in Alternative B except that some dispersed vehicle camping would be allowed in some areas along the Indian Creek corridor and designated to specific sites in other areas. Dispersed vehicle camping allows for new surface disturbance as vehicles pull off routes and establish new camp sites. This would detract from the naturalness of the non-WSA lands if the dispersed camping happened within them. Otherwise, the analysis would be the same as Alternative B.

Grand Gulch Plateau SRMA: There are 109,700 acres in six non-WSA lands with wilderness characteristics that overlie the Grand Gulch Plateau SRMA (formerly the Cedar Mesa SRMA). This includes 640 acres in Comb Ridge, 23,560 acres in Fish and Owl Creeks, 54,980 acres in Grand Gulch, 5,560 acres in Lime Creek, 11,290 acres in Road Canyon, and 13,670 acres in Valley of the Gods non-WSA lands with wilderness characteristics. This is all of the acreage in Lime Creek and Valley of the Gods and almost all acreage in Fish and Owl Creeks, Grand Gulch and Road Canyon non-WSAs. The objective for management of this SRMA is to provide outstanding recreational opportunities and visitor experience to engage in back-country, front-country and rural cultural appreciation recreation. Management includes restrictions on numbers of visitors, commercial uses and numbers, and equestrian use in certain areas of the SRMA, as

well as restrictions on camping and limits of days and people. There are numerous planning and implementation-level decisions included in the management prescriptions for this SRMA, the most salient, and the ones most affecting wilderness characteristics being:

- Open to commercial and/or private firewood cutting
- Available for watershed, range, and wildlife improvements and vegetation treatments
- 25 person limit on recreation day-use permits
- Mesa Top Day Use, 12 person group size limits
- On Mesa Top Overnight Camping, designated primitive campsites, with group size limit of 24
- In Canyons for Day Use, private and commercial group size limit of 12, one commercial group allowed each day, no stock trips in canyons, elsewhere stock limited to 8 animals
- In Canyons Overnight Camping, group size limits of 8 for private and 12 for commercial; commercial trips limited to one per day per trailhead
- Trailhead allocations are all 20 overnight visitors per day

Similar to Alternative A, these prescriptions would affect the non-WSA lands with wilderness characteristics primarily due to the numbers of people, group size limits, and commercial activities allowed to occur in this SRMA under this alternative. The opportunities for solitude and primitive recreation would be diminished because a person seeking that experience would, inevitably, meet other people, groups, and commercial outfitting and stock activities. In addition, allowing private and commercial woodcutting within these areas would deter from the naturalness of the area by leaving cross-county vehicle tracks, tree stumps and litter from cutting limbs. The noise associated with chain saws and vehicles would temporarily impact the opportunities for solitude, as well. Impacts to naturalness could also occur depending on the types of watershed, range, wildlife or vegetation treatments that would be implemented in the non-WSA lands. If by biological, chemical, or fire methods, the area would have temporary visual impacts, but surface disturbance would be limited and the treatments would have more of a natural appearance. If by mechanical methods, surface disturbance would be evident and visual imprints of humans would be apparent. During the time of the activities, the opportunities for solitude and primitive recreation would be temporarily affected due to noise and human activities in the area.

White Canyon SRMA: Generally the same impacts as Alternative B.

None of the other non-WSA lands with wilderness characteristics are within SRMAs under this alternative, therefore, there would be no recreation management objectives or focus within those areas. Because these lands are not within a managed SRMA with specific recreation objectives, they would be vulnerable to surface-disturbing uses including commercial and special recreation permit activities, new road construction, and other uses that could impact the natural values and primitive recreational opportunities and solitude that currently exist in those areas.

4.3.8.8.1.4. Alternative D

Five SRMAs would be designated that overlie all or portions of 16 non-WSA lands with wilderness characteristics. All other non-WSA lands would be managed as an ERMA.

San Juan River SRMA: A portion (1,960 acres) of the San Juan River non-WSA land with wilderness characteristics lies within the 3,365-acre San Juan River SRMA. The primary objective for management of this scenic area is for outstanding recreational opportunities and visitor experience for back-country river running, camping, and cultural appreciation. Management under this alternative allows for motorized boating, 45,000 user days per year, some restricted camping areas along the river, some restricted vehicle camping in the uplands, and leasing subject to NSO stipulations. The area is closed to mineral disposal and recommended for locatable mineral withdrawal. The SRMA would be closed to OHV use in some areas and limited to designated routes in others. The area would remain closed to woodland product harvest. Impacts of this SRMA alternative on the San Juan River non-WSA lands would be the same as Alternative C except that even more visitor days would be permitted on the river, further detracting from the opportunities of solitude and primitive recreation. In addition, fewer non-WSA lands would be protected because the SRMA would be smaller than Alternative B and the non-WSA acreage overlying it would be reduced by 2,160 acres.

Dark Canyon SRMA: This 30,820-acre SRMA (formerly a portion of the Canyon Basins SRMA) encompasses small portions of the Dark Canyon (1,563 acres) and Gravel and Long Canyon (220 acres) non-WSA lands with wilderness characteristics. Group size limits include 15 people in a private party and 15 people in a commercial party. Seven commercial trips per week would be allowed and there would be no limits on private users per day. Dispersed camping would be allowed within the canyons and mesa tops. The SRMA is closed to private or commercial firewood cutting, which would protect the naturalness of the non-WSA lands. This alternative provides for the most amount of human use. This increased use could impact the opportunity for solitude and primitive recreation due to interaction with other uses – either private or commercial. In addition, allowing for dispersed camping throughout the area could impact the naturalness of the area by creating new surface disturbances, including from campfire rings and crushed vegetation.

Indian Creek SRMA: This 89,271-acre SRMA (formerly a portion of the Canyon Basins SRMA in Alternative A) encompasses portions of four non-WSA lands with wilderness characteristics totaling 47,390 acres: Bridger Jack Mesa (22,780 acres), Harts Point (8,970 acres), Indian Creek (12,980 acres), and Shay Mountain (960 acres). Management prescriptions would be the same as in Alternative B except that some dispersed vehicle camping would be allowed throughout the Indian Creek corridor. Dispersed vehicle camping allows for new surface disturbance as vehicles pull off routes and establish new camp sites. This would detract from the naturalness of the non-WSA lands if the dispersed camping happened within them. Otherwise, the analysis would be the same as Alternative B.

Grand Gulch Plateau SRMA: There are 109,700 acres in six non-WSA lands with wilderness characteristics that overlie the Grand Gulch Plateau SRMA (formerly the Cedar Mesa SRMA). This includes 640 acres in Comb Ridge, 23,560 acres in Fish and Owl Creeks, 54,980 acres in Grand Gulch, 5,560 acres in Lime Creek, 11,290 acres in Road Canyon, and 13,670 acres in Valley of the Gods non-WSA lands with wilderness characteristics. This is all of the acreage in Lime Creek and Valley of the Gods and almost all acreage in Fish and Owl Creeks, Grand Gulch and Road Canyon non-WSAs. The objective for management of this SRMA is to provide outstanding recreational opportunities and visitor experience to engage in back-country, front country and rural cultural appreciation recreation. Management includes restrictions on numbers of visitors, commercial uses and numbers, and equestrian use in certain areas of the SRMA, as

well as restrictions on camping and limits of days and people. There are numerous planning- and implementation-level decisions included in the management prescriptions for this SRMA, the most salient, and the ones most affecting wilderness characteristics being:

- Open to commercial and/or private firewood cutting
- Available for watershed, range, and wildlife improvements and vegetation treatments
- 25 person limit on recreation day-use permits
- Mesa Top Day Use, 12 and 25 person group size limits
- On Mesa Top Overnight Camping, no designated campsites for groups less than 24, no group size limit, campsite facility development allowed
- In Canyons for Day Use, private and commercial group size limit of 12, two commercial groups allowed each day, no stock trips in canyons, elsewhere no stock limits on numbers of animals
- In Canyons Overnight Camping, group size limits of 12 for private and 12 for commercial; commercial trips limited to one per day per trailhead
- Trailhead allocations are all 24 overnight visitors per day.

This alternative provides for the greatest amount of human and stock use of all alternatives within this SRMA and would have the largest impact on solitude and primitive recreation opportunities due to the numbers of people, group size limits, and commercial activities allowed. This alternative provides for the greatest probability of encountering other humans, stock animals, and evidence of human activity. Large group size and commercial activities, along with potential campsite facility development; private and commercial firewood cutting; and watershed, range, wildlife, and vegetation improvement/treatments could all affect the naturalness and opportunities for solitude and primitive recreation. This is because of human encounters and surface-disturbing activities. A person seeking solitude would, inevitably, encounter other people, groups, and commercial outfitting and stock activities. In addition, allowing private and commercial woodcutting within these areas would deter from the naturalness of the area by leaving cross-county vehicle tracks, tree stumps and litter from cutting limbs. The noise associated with chain saws and vehicles would temporarily impact the opportunities for solitude, as well. Impacts to naturalness could also occur depending on the types of watershed, range, wildlife or vegetation treatments that would be implemented in the non-WSA lands. If by biological, chemical, or fire methods, the area would have temporary visual impacts, but surface disturbance would be limited and the treatments would have more of a natural appearance. If by mechanical methods, surface disturbance would be evident and visual imprints of humans would be apparent. During the time of the activities, the opportunities for solitude and primitive recreation would be temporarily affected due to noise and human activities in the area.

White Canyon SRMA: Generally the same impacts as Alternative B.

None of the other non-WSA lands with wilderness characteristics are within SRMAs under this alternative, therefore, there would be no recreation management objectives or focus within those areas. Because these lands are not within a managed SRMA with specific recreation objectives, they would be vulnerable to surface-disturbing uses including commercial and special recreation permit activities, new road construction, and other uses that could impact the natural values and primitive recreational opportunities and solitude that currently exist in those areas.

4.3.8.8.1.5. Alternative E

Five SRMAs would be designated that overlie all or portions of 16 non-WSA lands with wilderness characteristics. All other non-WSA lands would be managed as an ERMA.

San Juan River SRMA: A portion (4,120 acres) of the San Juan River non-WSA land with wilderness characteristics lies within the 10,203-acre San Juan River SRMA. The primary objective for management of this scenic area is for outstanding recreational opportunities and visitor experience for back-country river running, camping, and cultural appreciation. Management under this alternative would be the same as in Alternative B except that non-WSA lands would be closed to OHV use. The analysis would be the same as in Alternative B except that opportunities for solitude and primitive recreation would be enhanced because the presence and noise of OHVs would be precluded.

Indian Creek SRMA: The analysis would be the same as in Alternative B, except that vehicle camping would not be allowed within the non-WSA lands and opportunities for solitude and primitive recreation would be enhanced because the presence and noise of OHVs would be precluded.

Dark Canyon SRMA: Same impacts as Alternative B.

Grand Gulch Plateau SRMA: There are 109,700 acres in six non-WSA lands with wilderness characteristics that overlie the Grand Gulch Plateau SRMA (formerly the Cedar Mesa SRMA). This includes 640 acres in Comb Ridge, 23,560 acres in Fish and Owl Creeks, 54,980 acres in Grand Gulch, 5,560 acres in Lime Creek, 11,290 acres in Road Canyon, and 13,670 acres in Valley of the Gods non-WSA lands with wilderness characteristics. This is all of the acreage in Lime Creek and Valley of the Gods and almost all acreage in Fish and Owl Creeks, Grand Gulch and Road Canyon non-WSAs. The objective for management of this SRMA is to provide outstanding recreational opportunities and visitor experience to engage in back-country, front country and rural cultural appreciation recreation. Management includes restrictions on numbers of visitors, commercial uses and numbers, and equestrian use in certain areas of the SRMA, as well as restrictions on camping and limits of days and people. There are numerous planning- and implementation-level decisions included in the management prescriptions for this SRMA, the most salient, and the ones most affecting wilderness characteristics being:

- Closed to commercial and/or private firewood cutting
- Allows for maintenance of existing range improvements, but no new improvements would be constucted
- 25 person limit on recreation day-use permits
- Mesa Top Day Use, 10 person group size limits
- On Mesa Top Overnight Camping, designated primitive campsites, with group size limit of 12
- In Canyons for Day Use, private and commercial group size limit of 10, one commercial group allowed every other day, no stock trips allowed in canyon
- In Canyons Overnight Camping, group size limits of 6 for private and 10 for commercial; commercial trips limited to one per day per trailhead
- Trailhead allocations are all 16 overnight visitors per day

The analysis would be the same as for Alternative B except that further protection to the wilderness characteristics would be provided by precluding watershed, range and wildlife improvements and vegetation treatments on non-WSA lands with wilderness characteristics. Surface disturbance associated with such activities would be prohibited, thereby protecting the naturalness of the areas.

White Canyon SRMA: Same impacts as Alternative B.

None of the other non-WSA lands with wilderness characteristics are within SRMAs under this alternative, therefore, there would be no recreation management objectives or focus within those areas. Because these lands are not within a managed SRMA with specific recreation objectives, they would be vulnerable to surface-disturbing uses including commercial and special recreation permit activities, new road construction, and other uses that could impact the natural values and primitive recreational opportunities and solitude that currently exist in those areas.

4.3.8.8.2. Extensive Recreation Management Areas (ERMAs)

4.3.8.8.2.1. Alternative A

Dispersed camping would be allowed throughout the Monticello PA under this alternative and vehicle pull-offs to existing dispersed sites or to new dispersed sites would have no specified distance of disturbance off of routes. This would impact all non-WSA lands with existing routes, because new vehicle disturbances could ensue and the naturalness of the areas would be affected by new routes, crushed vegetation, compacted soil areas, fire rings, and other human disturbances.

Special Recreation Permits (SRPs) would only be required for commercial uses. There are no established criteria or numbers of people or group size limits for private parties. SRPs would be considered for off-route commercial events. All non-WSA lands are open for SRP consideration subject to site-specific NEPA analysis. SRPs could be considered throughout the non-WSA lands within the ERMA. Impacts to naturalness from off-road OHV events and other unregulated recreational activities, as well as impacts to opportunities for solitude and primitive recreation could be affected due to noise from vehicles and large groups throughout these areas. New routes could be created in the OHV open areas that would further degrade the wilderness characteristics of the non-WSA lands.

4.3.8.8.2.2. Alternative B

Dispersed camping would be allowed only in previously disturbed areas off designated routes under this alternative. This would protect the naturalness of the non-WSA lands with wilderness characteristics by not allowing for any new surface disturbance associated with vehicle camping.

SRPs would be required for groups of more than 25 people for day use and for groups of more than 15 people for overnight groups. SRPs would also be required for OHV groups of more than 15 motorized vehicles, camping groups with more than 10 vehicles or more than 50 people. All permitted use would be on designated routes. Commercial camping would be in designated areas and commercial motorized events would be limited to two groups of 12 vehicles per route per day. Special OHV events would be limited to 350 vehicles. Providing SRPs for numbers of people, vehicles, and events at set limitations allows the BLM to maintain control of activities on public lands and also allows the BLM to guide large groups and events to areas where there is

the least amount of conflict with or impacts to natural resources. Still, any SRPs provided in non-WSA lands have the potential to impact naturalness due to group camping activities and to affect opportunities for solitude and primitive recreation, depending on where the SRP has been issued or where an event is taking place. Most of these impacts would be short-term, however, and when the event is over, or the group leaves the area, the opportunities for solitude and primitive recreation would be present. Only allowing SRP events on designated routes provides for protection of the natural character of the non-WSA lands because new surface-disturbing vehicle activities would not be permitted.

4.3.8.8.2.3. Alternative C

Under this alternative, dispersed camping would be allowed throughout the Monticello FO within 150 feet of centerline off designated routes. This would impact all non-WSA lands with existing routes, because new vehicle disturbances could ensue and the naturalness of the areas would be affected by new routes, crushed vegetation, compacted soil areas, fire rings, and other human disturbances. However, limiting the disturbance to 150 feet concentrates use near an already disturbed linear intrusion (the route) and protects the naturalness of the non-WSA lands outside of the 150-foot corridor (300 feet wide total).

SRPs would be required for groups of more than 50 people for day use and for groups of more than 25 people for overnight groups. SRPs would also be required for OHV groups of more than 25 motorized vehicles, and camping groups with more than 15 vehicles or more than 50 people. All permitted use would be on designated routes. There would be no group or size limits on commercial use SRPs. Like Alternative B, providing SRPs for numbers of people, vehicles, and events at set limitations allows the BLM to maintain control of activities on public lands and also allows the BLM to guide large groups and events to areas where there is the least amount of conflict with or impacts to natural resources. However, number limits would be considerably higher under this alternative than under Alternative B, and therefore, there could be additional impacts from more people causing more surface disturbance. Any SRPs provided in non-WSA lands have the potential to impact naturalness due to group camping activities and to affect opportunities for solitude and primitive recreation, depending on where the SRP has been issued or where an event is taking place. Most of these impacts would be short-term, however, and when the event is over, or the group leaves the area, the opportunities for solitude and primitive recreation would be present. Only allowing SRP events on designated routes provides for protection of the natural character of the non-WSA lands because new surface-disturbing vehicle activities would not be permitted.

4.3.8.8.2.4. Alternative D

Under this alternative, dispersed camping would be allowed throughout the Monticello FO within 300 feet of centerline off designated routes. This would impact all non-WSA lands with existing routes, because new vehicle disturbances could ensue and the naturalness of the areas would be affected by new routes, crushed vegetation, compacted soil areas, fire rings, and other human disturbances. This alternative allows for the most potential disturbance from vehicle camping due to the width of the corridor allowing for off-road use and disturbance. However, limiting the disturbance to 300 feet concentrates use near an already-disturbed linear intrusion (the route), and protects the naturalness of the non-WSA lands outside of the 300-foot corridor (600 feet wide total).

SRPs would be required for groups of more than 75 people for day use and for groups of more than 50 people for overnight groups. SRPs would not be required for motorized vehicles (any numbers) on designed routes. Car camping groups of more than 20 vehicles or more than 50 people would require an SRP. Special OHV events would be limited to 350 vehicles. All permitted use would be on designated routes. There would be no group or size limits on commercial use SRPs. Providing SRPs for numbers of people, vehicles, and events at set limitations allows the BLM to maintain control of activities on public lands and also allows the BLM to guide large groups and events to areas where there is the least amount of conflict with or impacts to natural resources. This alternative, however, allows for the highest number limits for people, groups, and commercial activities before requiring an SRP. As a result, there could be additional impacts to wilderness characteristics lands from more people causing more surface disturbance. Any SRPs provided in non-WSA lands have the potential to impact naturalness due to group camping activities and to affect opportunities for solitude and primitive recreation, depending on where the SRP has been issued or where an event is taking place. Most of these impacts would be short-term, however, and when the event is over, or the group leaves the area, the opportunities for solitude and primitive recreation would be present. Only allowing SRP events on designated routes provides for protection of the natural character of the non-WSA lands because new surface-disturbing vehicle activities would not be permitted.

4.3.8.8.2.5. Alternative E

All routes in non-WSA lands with wilderness characteristics would be closed to vehicle use under this alternative; therefore, there would be no off-road vehicle travel for camping purposes into the non-WSA lands. This would protect the naturalness of the lands because no new surface-disturbing activities would be allowed, and existing disturbance would be provided an opportunity to rehabilitate.

SRPs would be required for groups and commercial activities at the same numbers as that of Alternative B. However, there would be no competitive mechanized or motorized events permitted in non-WSA lands with wilderness characteristics. All motorized activities would be precluded within non-WSA lands, thus, adverse impacts to solitude and primitive recreation from the noise and their presence would be eliminated. Other non-motorized, non-commercial activities may still be permitted within the non-WSA lands, however. They may temporarily impact opportunities for solitude and primitive recreation, but would be short-term. When the event is over, or the group leaves the area, the opportunities for solitude and primitive recreation would be present.

4.3.8.9. Impacts of Travel Management Decisions on Non- WSA Lands with Wilderness Characteristics

4.3.8.9.1. Off-Highway Vehicle (OHV) Travel Management

Table 4.69 portrays all of the non-WSA lands with wilderness characteristics and displays how OHV management would be applied under each alternative.

Table 4.69. OHV Management in non-WSA Lands with Wilderness Characteristics

Name	Total Acres	OHV Category	ALT A	ALT B	ALT C	ALT D	ALT E
Arch Canyon	50	open	50	0	0	0	0
		limited to designated	0	50	50	50	0
		closed	0	0	0	0	50
Bridger Jack Mesa	23,050	open	14,550	0	0	0	0
		limited to designated	6,790	22,380	22,360	23,050	0
		closed	1710	670	690	0	23,050
Butler Wash	1,660	open	90	0	0	0	0
		limited to designated	900	1,660	1,660	1,660	0
		closed	670	0	0	0	1,660
Cheesebox Canyon	13,240	open	4,840	0	0	0	0
		limited to designated	8,400	13,240	13,240	13,240	0
		closed	0	0	0	0	13,240
Comb Ridge	13,760	open	12,940	0	0	0	0
		limited to designated	820	13,760	13,760	13,760	13,760
		closed	0	0	0	0	0
Cross Canyon	1,350	open	1,350	0	0	0	0
		limited to designated	0	1,350	1,350	1,350	0
		closed	0	0	0	0	1,350
Dark Canyon	66,330	open	43,720	0	0	0	0
		limited to designated	21,660	66,330	66,330	66,330	0
		closed	950	0	0	0	66,330
Fish and Owl Creeks	24,650	open	550	0	0	0	0
		limited to designated	24,100	24,650	24,650	24,650	0
		closed	0	0	0	0	24,650
Fort Knocker Canyon	12,410	open	170	0	0	0	0
		limited to designated	12,240	12,410	12,410	12,410	0
		closed	0	0	0	0	12,410
Gooseneck	3,570	open	1,650	0	0	0	0
		limited to designated	1,920	3,570	3,570	3,570	0
		closed	0	0	0	0	3,570

Table 4.69. OHV Management in non-WSA Lands with Wilderness Characteristics

Name	Total Acres	OHV Category	ALT A	ALT B	ALT C	ALT D	ALT E
Grand Gulch	55,240	open	3,640	0	0	0	0
		limited to designated	43,110	55,210	55,210	55,240	0
		closed	8,490	0	30	0	55,240
Gravel and Long	36,890	open	0	0	0	0	0
		limited to designated	36,890	36,890	36,890	36,890	0
		closed	0	0	0	0	36,890
Hammond Canyon	4,700	open	2,590	0	0	0	0
		limited to designated	2,110	4,700	4,700	4,700	0
		closed	0	0	0	0	4,700
Harmony Flat	9,660	open	0	0	0	0	0
		limited to designated	9,660	9,660	9,660	9,660	0
		closed	0	0	0	0	9,660
Harts Point	24,740	open	10,410	0	0	0	0
		limited to designated	14,330	24,740	24,740	24,740	0
		closed	0	0	0	0	24,740
Hatch Lockhart Hart	1,760	open	1,760	0	0	0	0
		limited to designated	0	1,760	1,760	1,760	0
		closed	0	0	0	0	1,760
Indian Creek	23,280	open	12,250		20	20	0
		limited to designated	7,350	19,390	23,260	23,260	0
		closed	3,680	3,890	0	0	23,280
Lime Creek	5,560	open	30	0	0	0	0
		limited to designated	5,530	5,560	5,560	5,560	0
		closed	0	0	0	0	5,560
Mancos Mesa	61,570	open	4,760	0	0	0	0
		limited to designated	35,720	48,420	49,060	61,570	0
		closed	21,090	13,150	12,510	0	61,570
Nokai Dome	94,270	open	0	0	0	0	0
		limited to designated	82,730	81,670	81,890	94,270	0
		closed	11,540	12,600	12,380	0	94,270

Table 4.69. OHV Management in non-WSA Lands with Wilderness Characteristics

Name	Total Acres	OHV Category	ALT A	ALT B	ALT C	ALT D	ALT E
Red Rock Plateau	17,010	open	0	0	0	0	0
		limited to designated	17,010	17,010	17,010	17,010	0
		closed	0	0	0	0	17,010
Road Canyon	11,320	open	50	0	0	0	0
		limited to designated	11,050	11,320	11,320	11,320	0
		closed	220	0	0	0	11,320
San Juan River	14,340	open	9,230	0	0	0	0
		limited to designated	0	10,270	10,550	14,340	0
		closed	5,110	4,070	3,790	0	14,340
Shay Mountain	6,710	open	2,730	0	0	0	0
		limited to designated	3,980	6,710	6,710	6,710	0
		closed	0	0	0	0	6,710
Sheep Canyon	4,000	open	800	0	0	0	0
		limited to designated	3,200	4,000	4,000	4,000	0
		closed	0	0	0	0	4,000
Squaw and Papoose Canyons	3,570	open	3,570	0	0	0	0
		limited to designated	0	3,570	3,570	3,570	0
		closed	0	0	0	0	3,570
Upper Red Canyon	24,920	open	4,320	0	0	0	0
		limited to designated	20,600	24,920	24,920	24,920	0
		closed	0	0	0	0	24,920
Valley of the Gods	13,670	open	130	0	0	0	0
		limited to designated	13,540	13,670	13,670	13,670	0
		closed	0	0	0	0	13,670
White Canyon	9,080	open	4,420	0	0	0	0
		limited to designated	4,660	9,080	9,080	9,080	0
		closed	0	0	0	0	9,080

4.3.8.9.1.1. Alternative A

Under present management, cross-country motorized use is allowed for game retrieval and antler collection in areas open for motorized travel. The Monticello FO also has the discretion to authorize cross-country travel for any commercial or organized group events. These actions would continue to degrade the natural character of the non-WSA lands with wilderness characteristics by allowing new surface-disturbing activity from motorized vehicles, as well as conflict with solitude and primitive recreation experiences from the sights and sounds of vehicle travel.

Current management practices designate 140,600 acres in all or portions of 25 of the 29 non-WSA lands with wilderness characteristics as open to cross-country travel (see Table 4.69). Cross-country motorized travel in these non-WSA lands would result in surface disturbance to soils and vegetation that would alter the landscape and diminish the natural character of these non-WSA lands. Further, the presence and noise of motorized vehicles would degrade a visitor's opportunity for solitude and conflict with opportunities for primitive and unconfined recreation activities. Under this alternative, OHV use would be limited to designated routes on 388,390 acres within portions of 24 non-WSA lands with wilderness characteristics.

Current route inventories in the non-WSA lands have found approximately 410 miles of existing routes in 27 of the 29 non-WSAs:

- Bridger Jack Mesa – 27.97 miles
- Butler Wash – 2.60 miles
- Cheesebox Canyon – 2.28 miles
- Comb Ridge – 5.28 miles
- Cross Canyon – 1.78 miles
- Dark Canyon – 56.55 miles
- Fish and Owl Creeks – 26.53 miles
- Fort Knocker Canyon – 2.44 miles
- Gooseneck – 2.20 miles
- Grand Gulch – 60.49 miles
- Gravel and Long Canyon – 13.73 miles
- Harmony Flat – 1.88 miles
- Harts Point – 19.08 miles
- Hatch/Lockhart/Hart – 2.99 miles
- Indian Creek – 21.20 miles
- Lime Creek – 2.52 miles
- Mancos Mesa – 27.80 miles
- Nokai Dome – 55.98 miles
- Red Rock Plateau – 8.39 miles
- Road Canyon – 11.26 miles
- San Juan River – 10.65 miles
- Shay Mountain – 2.60 miles

- Sheep Canyon – 0.10 miles
- Squaw and Papoose Canyon – 10.17 miles
- Upper Red Canyon – 18.04 miles
- Valley of the Gods – 5.42 miles
- White Canyon – 10.01 miles

Limiting OHV use would confine soil and vegetation disturbance caused by motor vehicles to existing routes, and result in no additional change to the natural character of the non-WSA lands. The presence and noise of vehicles using these routes, however, would reduce the opportunity for visitors to find solitude in the non-WSA lands, especially in proximity to the routes. Motorized uses would conflict with primitive and unconfined recreation opportunities sought in the non-WSA lands.

Currently, there are no routes within the 4,700-acre Hammond Canyon or the 50-acre Arch Canyon non-WSA lands with wilderness characteristics. Because no routes would be designated in these areas, surface disturbance caused by motorized travel, and the resultant impacts to the natural character of the non-WSA lands, would not be evidenced. Further, because there would be no OHV use in these areas, the opportunities for solitude or conflict with primitive forms of recreation in these areas could not be reduced. The natural character and opportunities for solitude and primitive recreation of these non-WSA lands would be unaffected by OHV travel. While these two non-WSAs currently have no routes within them, Arch Canyon and over half of Hammond Canyon remain open to cross-country OHV travel and impacts to wilderness characteristics could occur if OHV users choose to engage in cross-country use.

There are also 53,370 acres in portions of nine non-WSA wilderness characteristics areas that are closed to OHV use. The naturalness of these areas and the opportunities for solitude and primitive recreation would be preserved because no surface disturbance from vehicle tracks or noise from this use within the closed non-WSA lands would ensue.

4.3.8.9.1.2. Impacts Common to Alternatives B, C, and D

Under Alternatives B, C, and D, vehicles must stay on designated routes. Game retrieval and antler collection must be done on foot and vehicles cannot go off designated roads for such activities. The Monticello FO would not authorize cross-country travel for any commercial or organized group events. All motorized routes not designated as open would be signed as closed. These actions would continue to preserve the natural character of the non-WSA lands with wilderness characteristics because no new surface-disturbing activity would be allowed from motorized vehicles.

4.3.8.9.1.3. Alternative B

Under this alternative, all non-WSA lands with wilderness characteristics would be limited to designated routes or closed (see Table 4.69). There would be approximately 258 miles of routes designated in the following non-WSA lands:

- Bridger Jack Mesa – 13.57 miles
- Butler Wash – 0.24 miles
- Cheesebox Canyon – 0.29 miles

- Comb Ridge – 1.66 miles
- Cross Canyon – 1.78 miles
- Dark Canyon – 38.60 miles
- Fish and Owl Creeks – 13.85 miles
- Fort Knocker Canyon – 0.92 miles
- Gooseneck – 2.20 miles
- Grand Gulch – 48.47 miles
- Gravel and Long Canyon – 8.20 miles
- Harmony Flat – 1.83 miles
- Harts Point – 8.61 miles
- Hatch/Lockhart/Hart – 2.99 miles
- Indian Creek – 12.81 miles
- Lime Creek – 2.13 miles
- Mancos Mesa – 11.62 miles
- Nokai Dome – 29.34 miles
- Road Canyon – 7.93 miles
- San Juan River – 6.67 miles
- Shay Mountain – 2.60 miles
- Sheep Canyon – 0.10 miles
- Squaw and Papoose Canyon – 10.17 miles
- Upper Red Canyon – 16.68 miles
- Valley of the Gods – 5.42 miles
- White Canyon – 9.23 miles

Reducing the miles of designated routes by 152 miles in 21 non-WSA lands from the inventoried routes (Alternative A) would help to reduce the impacts to solitude and primitive recreations by limiting motorized noise within these areas. Limiting OHV use to existing routes would confine soil and vegetation disturbance caused by motor vehicles to existing routes, and result in no additional change to the natural character of the non-WSA lands. The presence and noise of vehicles using these routes, however, would reduce the opportunity for visitors to find solitude in the non-WSA lands, especially in proximity to the routes. And, motorized uses would conflict with primitive and unconfined recreation opportunities sought in the non-WSA lands.

The most notable areas where there would be a substantial decrease in miles of routes would be in Bridger Jack Mesa, Dark Canyon, Fish and Owl Creeks, Grand Gulch, Harts Point, Indian Creek, Mancos Mesa, and Nokai Dome non-WSA lands with wilderness characteristics. In addition, two areas that would have designated routes under Alternative A would have none under Alternative B: Red Rock Plateau and Sheep Canyon non-WSAs. Because no routes would be designated in these areas, any new surface disturbance caused by motorized travel, and the resultant impacts to the natural character of the non-WSA lands, would not be evidenced. Further, because there would be no OHV use in these areas, the opportunities for solitude or conflict with primitive forms of recreation would be reduced and unaffected by OHV travel.

There are also 35,070 acres in portions of five non-WSAs that are closed to OHV use. The naturalness of these areas and the opportunities for solitude and primitive recreation would be preserved because no new surface disturbance from vehicle tracks or noise from this use within those portions of the closed non-WSA lands would ensue.

4.3.8.9.1.4. Alternative C

Under this alternative, all non-WSA lands with wilderness characteristics would be limited to designated routes or closed (see Table 4.69). In these areas, 348 miles of routes would be designated in the following non-WSA lands:

- Bridger Jack Mesa – 24.69 miles
- Butler Wash – 1.29 miles
- Cheesebox Canyon – 2.28 miles
- Comb Ridge – 1.92 miles
- Cross Canyon – 1.78 miles
- Dark Canyon – 43.92 miles
- Fish and Owl Creeks – 20.57 miles
- Fort Knocker Canyon – 1.23 miles
- Gooseneck – 2.20 miles
- Grand Gulch – 50.09 miles
- Gravel and Long Canyon – 8.30 miles
- Harmony Flat – 1.88 miles
- Harts Point – 11.38 miles
- Hatch/Lockhart/Hart – 2.99 miles
- Indian Creek – 19.72 miles
- Lime Creek – 2.13 miles
- Mancos Mesa – 26.83 miles
- Nokai Dome – 54.10 miles
- Red Rock Plateau – 7.87 miles
- Road Canyon – 7.93 miles
- San Juan River – 9.52 miles
- Shay Mountain – 2.60 miles
- Sheep Canyon – 0.10 miles
- Squaw and Papoose Canyon – 10.17 miles
- Upper Red Canyon – 17.2 miles
- Valley of the Gods – 5.42 miles
- White Canyon – 10.07 miles

Reducing the miles of designated routes by 62 miles in 19 non-WSA lands from the inventoried routes (Alternative A) would help to reduce the impacts to solitude and primitive recreation by limiting motorized noise within these areas. The most notable areas where there would be a substantial decrease in miles of routes are in Dark Canyon, Grand Gulch, and Harts Point non-

WSA lands with wilderness characteristics. Limiting OHV use to existing routes would confine soil and vegetation disturbance caused by motor vehicles to existing routes, and result in no additional change to the natural character of the non-WSA lands. The presence and noise of vehicles using these routes, however, would reduce the opportunity for visitors to find solitude in the non-WSA lands, especially in proximity to the routes. And, motorized uses would conflict with primitive and unconfined recreation opportunities sought in the non-WSA lands.

There are also 29,400 acres in portions of five non-WSAs that are closed to OHV use. The naturalness of these areas and the opportunities for solitude and primitive recreation would be preserved because no surface disturbance from vehicle tracks or noise from this use within those closed portions of the non-WSA lands would ensue.

Twenty acres in Indian Creek non-WSA lands with wilderness characteristics would remain open to cross-country vehicle use, as part of an open OHV play area designation. Cross-country motorized travel in this non-WSA would result in surface disturbance to soils and vegetation that would alter the landscape and diminish the natural character of this 20-acre area of non-WSA lands. Further, the presence and noise of motorized vehicles would degrade a visitor's opportunity for solitude and conflict with opportunities for primitive and unconfined recreation activities.

4.3.8.9.1.5. Alternative D

Under this alternative, OHV use would be limited to designated routes on all 582,360 acres within the 29 non-WSA lands with wilderness characteristics, except for 20 acres in the Indian Creek non-WSA, which would remain open to cross-country travel as part of an OHV play area (see Table 4.69).

All inventoried routes from Alternative A would be designated open for OHV use, resulting in 410 miles of designated routes in 27 of the 29 non-WSAs:

- Bridger Jack Mesa – 27.97 miles
- Butler Wash – 2.60 miles
- Cheesebox Canyon – 2.28 miles
- Comb Ridge – 5.28 miles
- Cross Canyon – 1.78 miles
- Dark Canyon – 56.55 miles
- Fish and Owl Creeks – 26.53 miles
- Fort Knocker Canyon – 2.44 miles
- Gooseneck – 2.20 miles
- Grand Gulch – 60.49 miles
- Gravel and Long Canyon – 13.73 miles
- Harmony Flat – 1.88 miles
- Harts Point – 19.08 miles
- Hatch/Lockhart/Hart – 2.99 miles
- Indian Creek – 21.20 miles
- Lime Creek – 2.52 miles

- Mancos Mesa – 27.80 miles
- Nokai Dome – 55.98 miles
- Red Rock Plateau – 8.39 miles
- Road Canyon – 11.26 miles
- San Juan River – 10.65 miles
- Shay Mountain – 2.60 miles
- Sheep Canyon – 0.10 miles
- Squaw and Papoose Canyon – 10.17 miles
- Upper Red Canyon – 18.04 miles
- Valley of the Gods – 5.42 miles
- White Canyon – 10.01 miles

Limiting OHV use would confine soil and vegetation disturbance caused by motor vehicles to existing routes, and result in no additional change to the natural character of the non-WSA lands. The presence and noise of vehicles using these routes, however, would reduce the opportunity for visitors to find solitude in the non-WSA lands, especially in proximity to the routes. Motorized uses would conflict with primitive and unconfined recreation opportunities sought in the non-WSA lands. There are two non-WSAs that have no routes in them: the 50-acre Arch Canyon and the 4,700-acre Hammond Canyon areas. Because no routes would be designated in these areas, surface disturbance caused by motorized travel, and the resultant impacts to the natural character of the non-WSA lands, would not be evidenced. Further, because there would be no OHV use in these areas, the opportunities for solitude or conflict with primitive forms of recreation in these areas would be protected.

Twenty acres in Indian Creek non-WSA lands with wilderness characteristics would remain open to cross-country vehicle use, as part of an open OHV play area designation. Cross-country motorized travel in this non-WSA would result in surface disturbance to soils and vegetation that would alter the landscape and diminish the natural character of this 20-acre area of non-WSA lands. Further, the presence and noise of motorized vehicles would degrade a visitor's opportunity for solitude and conflict with opportunities for primitive and unconfined recreation activities.

4.3.8.9.1.6. Alternative E

This alternative would designate all 582,360 acres of the 29 non-WSA lands with wilderness characteristic areas as closed to OHV use. Because these acres would be closed, no routes would be designated and surface disturbance caused by motorized travel and the resultant impacts to the natural character of the non-WSA lands would not be evidenced. Further, because there would be no OHV use in these areas, there would be no conflicts with opportunities for solitude or primitive forms of recreation in these areas because noise and disturbance associated with OHV would be eliminated. The natural character and opportunities for solitude and primitive recreation of these non-WSA lands would be unaffected by OHV travel.

In summary, Alternative E would provide the most protection to the naturalness and opportunities for solitude and primitive recreation of non-WSA lands with wilderness characteristics by closing all these lands to OHV travel, followed by Alternative B. In

Alternative B there would be no non-WSA lands with wilderness characteristics designated as open to cross-country OHV use. Non-WSA lands would be protected by restricting OHV use to designated routes (258 miles) on 94% of the non-WSA lands and closing the remainder to OHV use. Under Alternative C, 20 acres of non-WSA lands with wilderness characteristics would be designated as open to cross-country OHV use. The rest of the non-WSA lands would be protected by restricting OHV use to designated routes (348 miles) on 95% of the non-WSA lands and closing the remainder to OHV use. Alternative D also allows for cross-country OHV use on 20 acres of non-WSA lands and designates all inventoried routes as open for OHV use (410 miles). No areas would be closed to OHV use. Alternative A would continue to allow for cross-country OHV use on 25% of the non-WSA lands, limit use to designated or existing roués on 66% of the non-WSA lands, and close 9% to OHV use. Alternative A and D would provide the lowest level of protection. Although Alternative A provides some protection within closed OHV areas, it contains the most acres of open OHV use. Alternative D contains no closed OHV areas and would continue to allow open OHV use on 20 acres of the non-WSA lands with wilderness characteristics.

4.3.8.9.2. MECHANIZED RECREATIONAL TRAVEL (MOUNTAIN BIKES)

4.3.8.9.2.1. Alternative A

Areas currently open to motorized cross-country travel would continue to be open for cross-country mountain bike use. In non-WSA lands with wilderness characteristics, this would be the same as described under Alternative A under Section 4.3.8.9.1, Off-Highway Vehicle (OHV) Travel Management. Any new development of trails for mountain bikes in non-WSA lands would be in conflict with the primitive forms of trail use. If there were substantial levels of use on the trails (by foot, horse, and/or bike) in the non-WSA lands, the visitor's ability to find and experience solitude would be reduced.

4.3.8.9.2.2. Impacts Common to Alternatives B, C, and D

Under these action alternatives, mountain bikes would only be allowed on routes designated open for motorized use. Under all of the alternatives there are varying miles of projected routes that would be designated. If there were substantial levels of use on the trails (by OHV, foot, horse, and/or bike) in the non-WSA lands, the visitor's ability to find and experience solitude would be reduced. The change to the natural landscape, however, is expected to be minimal, however, because the routes are already established and no new surface disturbance is expected.

4.3.8.9.2.3. Alternative E

Non-WSA lands with wilderness characteristics would be closed to mountain bike use because no OHV routes would be designated for such use. This would protect and enhance the solitude and primitive recreation opportunities afforded in these non-WSA lands because fewer forms of recreation use would be allowed, and access to the non-WSA lands would be limited to non-mechanized users on foot or on horseback. This would potentially reduce the number of people experiencing the wilderness characteristic opportunities in these areas.

4.3.8.10. Impacts of Riparian Decisions on Non- WSA Lands with Wilderness Characteristics

All non-WSA lands with wilderness characteristics contain riparian ecosystems. The objective of riparian management is to manage riparian areas for properly functioning condition and to avoid or minimize loss or degradation of riparian areas, wetlands, and associated floodplains so as to preserve and enhance natural and beneficial values and provide for fish, wildlife and special status species habitats. Decisions to implement any of these objectives would improve the natural vegetation condition of non-WSA lands with wilderness characteristics, and thus its natural values. Improved riparian and wetland condition would enhance wildlife habitat, and thus, the natural values of non-WSA lands. Further, improved wildlife habitat would lead to increases in riparian-obligate wildlife species populations and opportunities for wildlife viewing. And, improved riparian and wetland condition would improve the setting for other primitive recreational opportunities, including hiking, camping, and nature study.

Under all alternatives, no surface disturbance would be permitted within active floodplains or within 100 meters of riparian areas. This protection would prevent soil and vegetation disturbances and placement of structures that would degrade the naturalness of non-WSA lands with wilderness characteristics. Protection of naturalness would preserve the setting needed to support opportunities for primitive forms of recreation and experiences of solitude.

Inventory of riparian areas not functioning or functioning at risk would result in the identification and implementation of measures to restore these areas to proper functioning condition, which would enhance the natural condition of the riparian portions of non-WSA lands with wilderness characteristics. Riparian zones are critical to the life cycles of many wildlife species (fish, amphibians, mammals, and birds). They are typically scenic and desired recreation settings. Maintenance and restoration of riparian zones would maintain and enhance opportunities for primitive recreation, including hiking, wildlife viewing, camping, nature study, fishing, and other activities dependent upon water courses and riparian ecosystems.

Closing unnecessary multiple social trails in the riparian area of Fish Creek within the Fish and Owl Creeks non-WSA lands would help protect the naturalness values of the wilderness characteristics lands by preventing additional surface disturbance.

4.3.8.11. Impacts of Soils/Watershed Decisions on Non- WSA Lands with Wilderness Characteristics

4.3.8.11.1. Alternative A

Under the No Action Alternative, where surface-disturbing actions are allowed in sensitive soil areas, there are no specific requirements for an erosion control strategy, approved survey and design, or slope restrictions for surface-disturbing activities on slopes between 21 and 40%. Depending on the type of surface-disturbing activities or the level of development or disturbance in these areas, naturalness values in non-WSA lands with wilderness characteristics could be impacted due to watershed issues associated with erosion problems.

4.3.8.11.2. Alternatives B, C, and D

Where surface-disturbing actions are allowed in sensitive soil areas, specific requirements for an erosion control strategy, approved survey and design, or slope restrictions for surface-disturbing

activities on steep slopes would be mandatory. Applying these requirements would help maintain natural values within these areas by mitigating potential erosion problems that could be created from permitted activities in these areas.

4.3.8.11.3. ALTERNATIVE E

No surface-disturbing activities on sensitive soils would be permitted within non-WSA lands with wilderness characteristics, thereby maintaining the natural values in these areas.

4.3.8.12. IMPACTS OF SPECIAL DESIGNATION DECISIONS ON NON- WSA LANDS WITH WILDERNESS CHARACTERISTICS

For the purposes of this section of the analysis, "special designations" include ACECs established under each alternative, rivers recommended eligible in Alternative A and suitable for inclusion in the National Wild and Scenic Rivers System under the four action alternatives, and wilderness study areas (WSAs) being managed to protect their wilderness characteristics under each alternative.

4.3.8.12.1. ALTERNATIVE A

4.3.8.12.1.1. Areas of Critical Environmental Concern (ACECs)

Of the 10 ACECs that would continue to be designated under this alternative to protect a variety of relevant and important values, seven ACECs would overlie portions of non-WSA lands with wilderness characteristics. Those ACECs are the Scenic Highway Corridor, Indian Creek, Butler Wash, Dark Canyon, Shay Canyon, Lavender Mesa and Cedar Mesa. The management prescriptions for these ACECs would generally provide protection to the naturalness and opportunities for solitude and primitive recreation in all of the non-WSA lands.

The Scenic Highway Corridor ACEC overlies portions of 13 non-WSA lands with wilderness characteristics totaling 38,580 acres: White Canyon (30 acres), Grand Gulch (7,935 acres), Comb Ridge (590 acres), Upper Red Canyon (915 acres), Harmony Flat (2,545 acres), Cheesebox Canyon (2,630 acres), Nokai Dome (3,140 acres), Mancos Mesa (5,260 acres), Fort Knocker Canyon (5,390 acres), Gravel and Long Canyon (6,350 acres), Road Canyon (420 acres), Fish and Owl Creeks (2,175 acres), and Valley of the God (1,200 acres) non-WSA lands with wilderness characteristics. Special conditions for managing the ACEC include: 1) reseeding with native vegetation; 2) NSO stipulation for oil and gas leasing; 3) retaining lands in public ownership; 4) managing to a VRM Class I objective; and 5) OHV use on designated roads and trails. All of these measures would help to protect and enhance the naturalness values by eliminating new surface-disturbing activities. OHV use on designated routes could temporarily interfere with opportunities for solitude and primitive recreation when OHVs are in the area. Although the ACEC would remain available for mineral materials disposal, this is a discretionary action that must meet VRM objectives, and thus is unlikely to occur within this area. The ACEC would also remain open to firewood cutting in specified areas which could detract from the naturalness of the non-WSA lands. It would also detract from the opportunities for solitude and primitive recreation when wood cutters are in the area due to chain saw noise, vehicle tracks, and evidence of surface disturbance. Although the ACEC is not proposed for mineral withdrawal, and no recent mining activity has occurred along these highway stretches, it could be at risk of

new development for uranium/vanadium extraction in the old mining districts (see Section 4.3.8.5.3, Locatable Minerals).

Indian Creek ACEC overlies 3,900 acres of the Indian Creek non-WSA lands with wilderness characteristics. Special conditions for managing the ACEC include: 1) reseeding with native vegetation; 2) NSO stipulation for oil and gas leasing; 3) retaining lands in public ownership; 4) managing to a VRM Class I objective; and 5) closed to OHV use; 6) closed to mineral materials disposal; and 7) closed to commercial and personal firewood cutting. All of these measures would help to protect and enhance the naturalness values associated with wilderness characteristics, as well as protect the opportunities for solitude and primitive recreation, by eliminating new surface-disturbing activities. Although the ACEC is not proposed for mineral withdrawal, and no recent mining activity has occurred, it could be at risk of new development for uranium/vanadium extraction in the old mining districts (see Section 4.3.8.5.3, Locatable Minerals).

Butler Wash ACEC overlies 40 acres of the Butler Wash non-WSA lands with wilderness characteristics. Special conditions for managing the ACEC include: 1) reseeding with native vegetation; 2) NSO stipulation for oil and gas leasing; 3) retaining lands in public ownership; 4) managing to a VRM Class I objective; and 5) closed to OHV use; 6) closed to mineral materials disposal; and 7) closed to commercial and personal firewood cutting. All of these measures would help to protect and enhance the naturalness values associated with wilderness characteristics, as well as protect the opportunities for solitude and primitive recreation, by eliminating new surface-disturbing activities. Although the ACEC is not proposed for mineral withdrawal, and no recent mining activity has occurred, it could be at risk of new development for uranium/vanadium extraction in the old mining districts (see Section 4.3.8.5.3, Locatable Minerals).

Dark Canyon ACEC overlies 280 acres of the Dark Canyon non-WSA lands with wilderness characteristics. Special conditions for managing the ACEC include: 1) reseeding with native vegetation; 2) unavailable for oil and gas leasing; 3) retaining lands in public ownership; 4) managing to a VRM Class I objective; and 5) closed to OHV use; 6) closed to mineral materials disposal; 7) proposed for mineral withdrawal; and 8) closed to commercial and personal firewood cutting. All of these measures would help to protect and enhance the naturalness values associated with wilderness characteristics, as well as protect the opportunities for solitude and primitive recreation, by eliminating new surface-disturbing activities.

The Shay Canyon ACEC overlies 515 acres of the Harts Point and 1,022 of the Shay Mountain non-WSA lands with wilderness characteristics. This ACEC is open for mineral leasing under standard stipulations, available for disposal of mineral materials, and open to mineral entry. Any of these activities, if approved within the non-WSA lands could cause that portion to lose its natural character. Opportunities for solitude and primitive recreation due to exploration for and development of oil and gas resources, mineral material pit development, or mining would be forgone in those areas, and could impact these values for up to one-half mile from the ongoing activity. However, the ACEC is also protected with a VRM Class I objective, closed to private and commercial wood cutting, and would allow OHV activity on designated routes only. Any new development would need to meet the VRM management objective, thereby mandating extensive mitigation to any such activities. Closing the area to wood cutting would help protect the natural values as well as solitude by excluding the noise, tire tracks and other human

activities associated with wood cutting. The occasional presence and noise of OHV use would reduce opportunities for solitude and conflict with primitive forms of recreation when vehicles were traveling the designated routes.

The Lavender Mesa ACEC overlies 650 acres of the Bridger Jack Mesa non-WSA lands with wilderness characteristics. Special conditions for managing the ACEC include: 1) reseeding with native vegetation; 2) NSO stipulation for oil and gas leasing; 3) retaining lands in public ownership; 4) managing to a VRM Class I objective; and 5) closed to OHV use; 6) closing the area to mineral materials disposal; 7) excluded from surface-disturbing activities; 8) excluded from land treatments or habitat improvements; and 9) excluding commercial and personal firewood cutting. All of these measures would protect, preserve, and enhance the naturalness values associated with wilderness characteristics, as well as protect the opportunities for solitude and primitive recreation, by eliminating new surface-disturbing activities. Although the ACEC is not proposed for mineral withdrawal, and no recent mining activity has occurred, it could be at risk of new development for uranium/vanadium extraction in the old mining districts (see Section 4.3.8.5.3, Locatable Minerals).

The Cedar Mesa ACEC overlies all or portions of six non-WSA lands with wilderness characteristics totaling 62,640 acres: all of Lime Creek (5,560 acres), the majority of Road Canyon (10,830 acres), Valley of the Gods (12,450 acres), Fish and Owl Creeks (21,870),and portions of Grand Gulch (11,680 acres), and Comb Ridge (250 acres) non-WSA lands with wilderness characteristics. Lime Creek, Road Canyon, and Valley of the Gods non-WSAs lie within a special emphasis area of the ACEC and have more restrictions than the other three non-WSA lands. The special emphasis area management includes: 1) NSO stipulation for oil and gas leasing; 2) retaining lands in public ownership; 3) managing to a VRM Class I objective; and 4) designating routes for OHV use; 5) opening the area to mineral materials disposal; 6) allowing commercial and personal firewood cutting in designated areas, and 7) leaving the lands open to mineral entry. Many of these measures would protect the naturalness values associated with wilderness characteristics, as well as the opportunities for solitude and primitive recreation, by eliminating many surface-disturbing activities. OHV use on designated routes could temporarily interfere with opportunities for solitude and primitive recreation when OHVs are in the area. Although the ACEC would remain available for mineral materials disposal, this is a discretionary action that must meet VRM objectives, and thus is unlikely to occur within this area. The ACEC would also remain open to firewood cutting in specified areas which could detract from the naturalness of the non-WSA lands. It would also detract from the opportunities for solitude and primitive recreation when wood cutters are in the area due to chain saw noise, vehicle tracks, and evidence of surface disturbance. Although the ACEC is not proposed for mineral withdrawal, and no recent mining activity has occurred, it could be at risk of new development for uranium/vanadium extraction in the old mining districts (see Section 4.3.8.5.3, Locatable Minerals).

Those portions of Fish and Owl Creeks, Grand Gulch, and Comb Ridge non-WSA lands with wilderness characteristics that fall within the less restrictive part of the Cedar Mesa ACEC allow for: 1) leasing and development under standard stipulations; 2) disposal of mineral materials; 3) land treatments and range improvements; 4) commercial and private wood cutting; 5) OHV use on designated routes; and 6) open to mineral entry. These management decisions allow for surface-disturbing activities that could create the loss of wilderness characteristics by placement of oil and gas wells and associated facilities, mechanical land/vegetation treatments, and wood-

cutting activities, among other things. Limiting OHV activity to designated routes would help protect the naturalness of the area by not allowing cross-country travel and new surface disturbance. Although the ACEC is not proposed for mineral withdrawal, and no recent mining activity has occurred, it could be at risk of new development for uranium/vanadium extraction in the old mining districts (see Section 4.3.8.5.3, Locatable Minerals).

4.3.8.12.1.2. Wild and Scenic Rivers (WSRs)

Under this alternative, three of the 29 non-WSA land areas intersect with eligible WSR segments, totaling 15.3 miles in those three areas. There are 5 miles of the eligible river segment of the Colorado River that intersect with the Gooseneck non-WSA lands with wilderness characteristics. There are 9.7 miles of the eligible river segment of the San Juan River that intersect with the San Juan River non-WSA lands with wilderness characteristics. And, there are 0.6 miles of the eligible portion of Indian Creek that intersects with the Shay Mountain non-WSA lands with wilderness characteristics. Protection of river values (pending future suitability studies) would prevent uses and surface disturbances that would detract from the natural character of the three areas with wilderness characteristics within the half-mile river corridor (a quarter mile on each side of the river segment). The presence and noise of motor boat use along the San Juan River non-WSA lands would reduce opportunities for solitude and conflict with primitive recreation in these river segments. The impacts would last while motorized boats were present.

4.3.8.12.1.3. Wilderness

Because Alternative A does not propose specific management to protect non-WSA lands with wilderness characteristics, contiguous WSAs and National Park Service lands would not have expanded opportunities for solitude and primitive forms of recreation afforded to them from these decisions.

4.3.8.12.2. ALTERNATIVE B

4.3.8.12.2.1. Areas of Critical Environmental Concern (ACECs)

Under this alternative there would be 12 ACECs designated to protect a variety of relevant and important values, of which 10 ACECs would overlie portions of non-WSA lands with wilderness characteristics. Those ACECs are the Indian Creek, Butler Wash, Dark Canyon, Shay Canyon, Lavender Mesa, Cedar Mesa, Lockhart Basin, San Juan River, and Valley of the Gods. The management prescriptions for these ACECs would generally provide protection to the naturalness and opportunities for solitude and primitive recreation in all of the non-WSA lands.

The potential Indian Creek ACEC overlies 3,900 acres of the Indian Creek non-WSA lands with wilderness characteristics. Prescriptions for managing the ACEC are the same as described in Alternative A, thus the analysis would be the same.

The potential Butler Wash ACEC overlies 40 acres of the Butler Wash non-WSA lands with wilderness characteristics. Special conditions for managing the ACEC include: 1) NSO stipulation for oil and gas leasing; 2) retaining lands in public ownership; 3) managing to a VRM Class I objective; 4) OHV use limited to designated routes; 5) closed to mineral materials disposal; 6) closed to commercial and personal firewood cutting; and 7) proposed for mineral

withdrawal. All of these measures would help to protect and enhance the naturalness values associated with wilderness characteristics, as well as protect the opportunities for solitude and primitive recreation, by eliminating new surface-disturbing activities. The occasional presence and noise of OHV use would reduce opportunities for solitude and conflict with primitive forms of recreation when vehicles were traveling the designated routes.

The potential Dark Canyon ACEC overlies 280 acres of the Dark Canyon non-WSA lands with wilderness characteristics. Prescriptions for managing the ACEC are the same as described in Alternative A, thus the analysis would be the same.

The potential Shay Canyon ACEC overlies 100 acres of the Shay Mountain non-WSA lands with wilderness characteristics. The prescriptions for managing this potential ACEC include: 1) NSO for oil and gas leasing; 2) limited to designated routes for OHV use; 3) no surface-disturbing vegetation/wildlife/watershed treatment/improvements; 4) hiking only on designated trials; 5) open to mineral entry; 6) closed to disposal of mineral materials; 7) closed to private or commercial wood cutting; and 8) managed to VRM Class II objectives. This is much more restrictive than Alternative A and would protect wilderness characteristics values from surface-disturbing activities. The occasional presence and noise of OHV use would reduce opportunities for solitude and conflict with primitive forms of recreation when vehicles were traveling the designated routes. Although the ACEC is not proposed for mineral withdrawal, and no recent mining activity has occurred, it could be at risk of new development for uranium/vanadium extraction in the old mining districts (see Section 4.3.8.5.3, Locatable Minerals).

The potential Lavender Mesa ACEC overlies 650 acres of the Bridger Jack Mesa non-WSA lands with wilderness characteristics. Special conditions for managing the ACEC include: 1) NSO stipulation for oil and gas leasing; 2) retaining lands in public ownership; 3) managing to a VRM Class II objective; 4) closed to OHV use; 5) closing the area to mineral materials disposal; 6) excluded from surface-disturbing activities; 7) excluded from surface-disturbing land treatments or habitat improvements; and 8) excluding commercial and personal firewood cutting. Like Alternative A, all of these measures would protect, preserve, and enhance the naturalness values associated with wilderness characteristics, as well as protect the opportunities for solitude and primitive recreation, by eliminating new surface-disturbing activities. Although the ACEC is not proposed for mineral withdrawal, and no recent mining activity has occurred, it could be at risk of new development for uranium/vanadium extraction in the old mining districts (see Section 4.3.8.5.3, Locatable Minerals).

The potential Cedar Mesa ACEC overlies portions of four non-WSA lands with wilderness characteristics totaling 60,055 acres: Fish and Owl Creeks (24,010 acres), Grand Gulch (26,635 acres), Road Canyon (9,160 acres) and Comb Ridge (250 acres). Management prescriptions for this ACEC include 1) open to leasing and development under standard stipulations, CSU, NSO, and unavailable for leasing; 2) available for watershed, vegetation and range projects; 3) VRM Class III objectives; 4) closed to commercial and private wood cutting; and 5) OHV use on designated routes, among others. These management decisions allow for surface-disturbing activities that could create the loss of wilderness characteristics by potential placement of oil and gas wells and associated facilities and mechanical land/vegetation treatments, among other things. Limiting OHV activity to designated routes would help protect the naturalness of the area by not allowing cross-country travel and new surface disturbance, and closing the ACEC to

wood cutting would prevent impacts associated with that activity on the naturalness and opportunities for solitude and primitive recreation.

The potential Lockhart Basin ACEC overlies portions of four non-WSA lands with wilderness characteristics totaling 21,305 acres and includes: Indian Creek (15,820 acres), all of Gooseneck (3,570 acres), Hatch/Lockhart/Hart (1,765 acres), and Harts Point (150 acres). The management prescriptions for this potential ACEC are as follows: 1) NSO for oil and gas leasing; 2) closed to disposal of mineral materials; 3) VRM Class I objectives; 4) prohibits surface-disturbing activities; 5) retained in public ownership; 6) proposed for mineral withdrawal; and 7) closed to commercial or private firewood cutting. All management within this ACEC would protect, enhance, and preserve the wilderness characteristics values by maintaining naturalness and providing opportunities for solitude and primitive recreation.

The potential San Juan River ACEC overlies 2,155 acres of the San Juan River non-WSA lands with wilderness characteristics. Management prescriptions include: 1) OHV use limited to designated routes; 2) closed to private and commercial firewood cutting; 3) available for watershed, range improvements and vegetation treatments; 4) managed to VRM Class I, II, and III objectives; 5) NSO for oil and gas leasing; 6) closed to mineral materials disposal; and 7) retained in public ownership, among others. All of these prescriptions help to maintain wilderness characteristics. Depending on the methods used for the land treatments/improvements, short-term or long-term impacts to naturalness could occur if done on non-WSA lands (see Section 4.3.17, Vegetation, for description of methods and impacts). The occasional presence and noise of OHV use would reduce opportunities for solitude and conflict with primitive forms of recreation when vehicles were traveling the designated routes.

The potential Valley of the Gods ACEC overlies all of Lime Creek (5,560 acres), all of Valley of the Gods (13,670 acres), and a small portion of Road Canyon (1,530 acres) non-WSA lands with wilderness characteristics. The prescriptions for this potential ACEC include: 1) unavailable for oil and gas leasing; 2) retaining lands in public ownership; 3) managing to a VRM Class I objective; and 4) designating routes for OHV use; 5) closed to mineral materials disposal; 6) closed to commercial and personal firewood cutting in designated areas; and 7) available for vegetation treatments. Virtually all of these measures would protect the naturalness values associated with wilderness characteristics, as well as protect the opportunities for solitude and primitive recreation, by eliminating many surface-disturbing activities. OHV use on designated routes could temporarily interfere with opportunities for solitude and primitive recreation when OHVs are in the area. Any vegetation treatment would need to meet VRM Class I objectives and would probably be by fire, biological, or chemical methods to meet this objective.

4.3.8.12.2.2. Wild and Scenic Rivers (WSRs)

Under this alternative, three of the 29 non-WSA land areas intersect with suitable WSR segments, totaling 15.3 miles in those three areas.

Five miles of the Colorado River segment found suitable under this alternative intersect with the Gooseneck non-WSA lands with wilderness characteristics. It would be managed`for its tentative classification as "scenic" and would be under an NSO stipulation for oil and gas leasing, closed to OHV use, recommended for mineral withdrawal, managed to VRM Class I objectives and closed to motorized use. All of these management prescriptions would protect and preserve

wilderness characteristics because no surface-disturbing activities would be allowed, and noise from motorized uses would be eliminated.

There are 9.7 miles of the suitable river segment of the San Juan River that intersect with the San Juan River non-WSA lands with wilderness characteristics. This portion of the river has a tentative classification of "wild", and would be managed to VRM Class I objectives, closed to oil and gas leasing, closed to OHV use, and recommended for mineral withdrawal. All of these management prescriptions would protect and preserve wilderness characteristics because no surface-disturbing activities would be allowed, and noise from motorized uses would be eliminated.

There is 0.6 mile of the suitable portion of Indian Creek that intersects with the Shay Mountain non-WSA lands with wilderness characteristics. This river has a tentative classification of "recreational" and would be managed under VRM Class III objectives, open to oil and gas leasing under standard lease terms, and OHV use would be limited to designated routes. Although limiting OHV activity to designated routes would help protect the naturalness of the area by not allowing cross-country travel, the other management prescriptions would not protect wilderness characteristics values. This is because surface-disturbing activities could be permitted which would detract from the naturalness of the area and interrupt opportunities for solitude and primitive recreation.

4.3.8.12.2.3. Wilderness

Because Alternative B does not propose specific management to protect non-WSA lands with wilderness characteristics, contiguous WSAs and National Park Service lands would not have expanded opportunities for solitude and primitive forms of recreation afforded to them from these decisions.

4.3.8.12.3. ALTERNATIVE C

4.3.8.12.3.1. Areas of Critical Environmental Concern (ACECs)

Under this alternative there would be seven ACECs designated to protect a variety of relevant and important values, of which five ACECs would overlie portions of non-WSA lands with wilderness characteristics. Those ACECs are Indian Creek, Shay Canyon, Lavender Mesa, San Juan River, and Valley of the Gods. The management prescriptions for these ACECs would generally provide some protection to the naturalness and opportunities for solitude and primitive recreation in all of the non-WSA lands.

The 3,900-acre potential Indian Creek ACEC falls within the Indian Creek non-WSA lands with wilderness characteristics. The acreage and prescriptions for managing the ACEC are the same as described in Alternative A, thus the analysis would be the same.

The potential Shay Canyon ACEC overlies 100 acres of the Shay Mountain non-WSA lands with wilderness characteristics. The acreage and prescriptions for managing this potential ACEC would be the same as Alternative B, thus the analysis would be the same.

The potential Lavender Mesa ACEC overlies 650 acres of the Bridger Jack Mesa non-WSA lands with wilderness characteristics. The acreage and prescriptions for managing this potential ACEC would be the same as Alternative B, thus the analysis would be the same.

The potential San Juan River ACEC overlies 2,155 acres of the San Juan River non-WSA lands with wilderness characteristics. The acreage and prescriptions for managing this potential ACEC would be the same as Alternative B, thus the analysis would be the same.

The potential Valley of the Gods ACEC overlies all of Lime Creek (5,560 acres), all of Valley of the Gods (13,670 acres), and a small portion of Road Canyon (1,530 acres) non-WSA lands with wilderness characteristics. The acreage and prescriptions for managing this potential ACEC would be the same as Alternative B, thus the analysis would be the same.

4.3.8.12.3.2. Wild and Scenic Rivers (WSRs)

Under this alternative, one of the 29 non-WSA land areas intersect with a suitable WSR segment. Five miles of the Colorado River segment found suitable under this alternative intersect with the Gooseneck non-WSA lands with wilderness characteristics. As with Alternative B, it would be managed for it tentative classification as "scenic" and would be unavailable for oil and gas leasing, closed to OHV use, recommended for mineral withdrawal, managed to VRM Class I objectives, and closed to motorized use. All of these management prescriptions would protect and preserve wilderness characteristics because no surface-disturbing activities would be allowed, and noise from motorized uses would be eliminated.

4.3.8.12.3.3. Wilderness

Because Alternative C does not propose specific management to protect non-WSA lands with wilderness characteristics contiguous to any WSAs or National Park Service lands, there would not be expanded opportunities for solitude and primitive forms of recreation afforded to the WSAs or National Park lands.

4.3.8.12.4. ALTERNATIVE D

4.3.8.12.4.1. Areas of Critical Environmental Concern (ACECs)

Under Alternative D, no ACECs would be designated, therefore, management prescriptions to protect relevant and important values would not be applied and would not afford protection of wilderness values in non-WSA lands with wilderness characteristics.

4.3.8.12.4.2. Wild and Scenic Rivers (WSRs)

Under this alternative, no WSR segments would be found suitable. Therefore, management prescriptions to protect the suitable river segments would not be applied and would not afford protection of wilderness values in non-WSA lands with wilderness characteristics.

4.3.8.12.4.3. Wilderness

Because Alternative A does not propose specific management to protect non-WSA lands with wilderness characteristics, contiguous WSAs and National Park Service lands would not have expanded opportunities for solitude and primitive forms of recreation afforded to them.

4.3.8.12.5. ALTERNATIVE E

4.3.8.12.5.1. Areas of Critical Environmental Concern (ACECs)

Alternative E designates the same number of ACECs and intersects with the same number of non-WSA lands with wilderness characteristics as Alternative B. All of the non-WSA lands that fall within the ACECs (Indian Creek, Butler Wash, Dark Canyon, Shay Canyon, Lavender Mesa, Cedar Mesa, Lockhart Basin, San Juan River, and Valley of the Gods) would be afforded complete protection under this alternative due to the prescriptions proposed to protect these values. All of the lands would be closed to oil and gas leasing, closed to firewood cutting, closed to OHV use, proposed for mineral withdrawal, managed to a VRM Class I objective, and excluded from any surface-disturbing activities. The naturalness of the areas would be preserved and the opportunities for solitude and primitive recreation would be protected.

4.3.8.12.5.2. Wild and Scenic Rivers (WSRs)

All three suitable river segments that intersect with non-WSA lands with wilderness characteristics described under Alternative B would be carried forward into this alternative. This would include 5 miles along the Colorado River within the Gooseneck non-WSA, 9.7 miles along the San Juan River in the San Juan River non-WSA, and 0.6 miles of the suitable portion of Indian Creek that intersect with the Shay Mountain non-WSA lands with wilderness characteristics. Management prescriptions to protect wilderness characteristics would also be applied to those sections of suitable rivers that overlie the non-WSA lands. The prescriptions include being closed to oil and gas leasing, closed to firewood cutting, closed to OHV use, proposed for mineral withdrawal, managed to a VRM Class I objective, and excluded from any surface-disturbing activities. The naturalness of the areas would be preserved and the opportunities for solitude and primitive recreation would be protected.

4.3.8.12.5.3. Wilderness Study Areas (WSAs)

Non-WSA lands with wilderness characteristics in Arch Canyon, Bridger Jack Mesa, Butler Wash, Cheesebox Canyon, Cross Canyon, Dark Canyon, Fish and Owl Creeks, Grand Gulch, Indian Creek, Lime Creek, Mancos Mesa, Road Canyon, and Squaw and Papoose Canyon are contiguous to wilderness study areas (many of the same name) that are managed under the BLM's IMP to protect their wilderness values. Protecting and maintaining the wilderness characteristics in the non-WSA lands would continue to safeguard the naturalness and expand opportunities for solitude and primitive forms of recreation found in the WSAs. In addition, Bridger Jack Mesa, Butler Wash, Dark Canyon, Gooseneck, and Indian Creek non-WSA lands with wilderness characteristics are contiguous with lands administratively endorsed for wilderness within Canyonlands National Park. The Dark Canyon non-WSA is also contiguous with the Forest Service's Dark-Woodenshoe Canyon Wilderness Area. There are also non-WSA lands that are contiguous to lands administratively endorsed for wilderness within the Glen Canyon National Recreation Area. These are the Grand Gulch, Dark Canyon, Nokai Dome and Sheep Canyon non-WSA lands with wilderness characteristics. Non-WSA lands with wilderness characteristics that are contiguous to lands administratively endorsed for wilderness within Natural Bridges National Monument include Cheesebox Canyon and Harmony Flat. Similar to the WSAs, protecting the non-WSA lands with wilderness characteristics to preserve their wilderness values would enhance and expand the opportunities for solitude and primitive

recreation, as well as naturalness, in the National Park units and the Forest Service-designated wilderness area.

In summary, Alternatives B would provide the most long-term protection to the naturalness and opportunities for solitude and primitive recreation of non-WSA lands with wilderness characteristics by designating the most acres as ACECs and by recommending the longest stretches of waterways for protection in the National Wild and Scenic Rivers System, followed by Alternative A. Alternative C would provide some protection of the naturalness and opportunities for solitude and primitive recreation of non-WSA lands, but recommends few ACECs and only recommends one river segment for protection in the National /Wild and Scenic Rivers System. Alternative D would provide the lowest level of protection, as it would not designate ACECs or recommend suitable river segments for protection.

4.3.8.13. Impact of Special Status Species Decisions on Non- WSA Lands with Wilderness Characteristics

Under all alternatives, management actions would focus on maintaining, protecting, and enhancing habitats for special status species. Decisions that could help protect non-WSA lands with wilderness characteristics include applying avoidance and minimization measures for all surface-disturbing activities in special-status species habitats, including using BMPs wherever possible. This would help to maintain the natural character of non-WSA lands with wilderness characteristics where they intersect with special status species habitat. Another common to all alternatives decision is to implement habitat manipulations where translocations and population augmentation of special status species would occur, if necessary. Depending on the methods used, this could degrade the naturalness of the non-WSA lands. During the time the habitat manipulation is being conducted, the opportunity for solitude and primitive recreation would be disrupted. In addition, any recovery plan actions that require range improvements could introduce an unnatural element of human impacts to the landscape, slightly degrading the natural condition of the non-WSA lands.

Mexican spotted owl habitat is generally associated with deep, narrow canyons that are within Hatch/Lockhart/Hart, Indian Creek, Harts Point, Shay Mountain, Dark Canyon, Fish and Owl Creeks, Gravel and Long Canyon, and Nokai Dome non-WSA lands with wilderness characteristics. Southwestern willow flycatcher and yellow-billed cuckoo habitat, as well as riverine habitat for endangered Colorado river fishes, fall within the San Juan River non-WSA. Actions taken to maintain, protect, and enhance these habitats for special status species would improve the populations and would enhance the natural character of the lands where these species occur in the non-WSA lands with wilderness characteristics. Further, larger and healthier populations would expand opportunities for primitive and unconfined recreation opportunities, including viewing and natural history study.

Vegetation treatments/manipulations to improve special status species habitats could be completed with fire, chemicals, biologically, or mechanically. In the long-term, vegetation treatments with fire would restore vegetation communities and display a more natural composition of grasses, forbs, shrubs, and/or trees. If these treatments occurred in non-WSA lands with wilderness characteristics, this objective would enhance the natural character of the non-WSA lands in the long-term, and healthy populations would enhance opportunities for primitive recreation – wildlife viewing and studies. In the short-term, however, burning operations would result in disturbance of the landform and vegetation through fire-line

construction needed to manage the fire. Further, the presence and noise of people, vehicles, equipment, and aircraft would eliminate opportunities for solitude and primitive and unconfined recreation in proximity to the fire. The impacts on opportunities for solitude and primitive recreation would be temporary, lasting for the duration of the burning operation and reclamation. When the fire and reclamation operations are complete, these opportunities would return. Soil and vegetation disturbance for fire-line construction would diminish the natural character of the non-WSA lands, but reclamation would restore the natural conditions in a relatively short period of time. Mechanical vegetation manipulation in non-WSA lands with wilderness characteristics would have long-term impacts on the natural character of the non-WSA lands and opportunities for solitude and primitive and unconfined recreation. While restoration of vegetation communities would be beneficial to the natural character of non-WSA lands with wilderness characteristics, the use of chain saws, bull dozers, brush hogs, etc. to accomplish the objective would leave an obvious imprint of human activity on the land, diminishing the natural character of the non-WSA land(s). Also, in the short-term, the presence and noise of people and equipment would eliminate opportunities for solitude and primitive forms of recreation in proximity to the treatment area. In the long-term, a setting clearly manipulated by humans would reduce the opportunities for both solitude and primitive recreation.

4.3.8.14. Impacts of Vegetation Decisions on Non-WSA Lands with Wilderness Characteristics

Under all alternatives, existing vegetation treatments would be maintained, as appropriate, to allow for the desired mix of vegetation types, structural stages, and landscape/riparian/watershed function and provide for native plant, fish, and wildlife habitats. Vegetation treatments could be completed with fire, chemicals, biologically, or mechanically to achieve and maintain standards for rangeland health and desired vegetation condition. In the long-term, vegetation treatments with fire would restore vegetation communities and display a more natural composition of grasses, forbs, shrubs, and/or trees. If these treatments occurred in non-WSA lands with wilderness characteristics, this objective would enhance the natural character of the non-WSA lands in the long-term. Maintenance of vegetation treatment areas with fire would maintain or enhance wildlife habitat and populations of species dependent on that habitat (deer, elk, antelope, sage grouse, song birds, etc.). If these treatments occurred in non-WSA lands with wilderness characteristics, healthy wildlife populations would enhance opportunities for primitive recreation – wildlife viewing and hunting. In the short-term, however, burning operations would result in disturbance of the landform and vegetation through fire-line construction needed to manage the fire. Further, the presence and noise of people, vehicles, equipment, and aircraft would eliminate opportunities for solitude and primitive and unconfined recreation in proximity to the fire. The impacts on opportunities for solitude and primitive recreation would be temporary, lasting for the duration of the burning operation and reclamation. When the fire and reclamation operations are complete, these opportunities would return. Soil and vegetation disturbance for fire-line construction would diminish the natural character of the non-WSA lands, but reclamation would restore the natural conditions in a relatively short period of time.

Mechanical vegetation manipulation in non-WSA lands with wilderness characteristics would have long-term impacts on the natural character of the non-WSA lands and opportunities for solitude and primitive and unconfined recreation. While restoration of vegetation communities would be beneficial to the natural character of non-WSA lands with wilderness characteristics, the use of chain saws, bull dozers, brush hogs, etc. to accomplish the objective would leave an

obvious imprint of human activity on the land, diminishing the natural character of the non-WSA land(s). Also, in the short-term, the presence and noise of people and equipment would eliminate opportunities for solitude and primitive forms of recreation in proximity to the treatment area. In the long-term, a setting clearly manipulated by humans would reduce the opportunities for both solitude and primitive recreation.

Decisions that are common to all action alternatives include prioritizing sagebrush communities for treatment within numerous areas in the Monticello FO. Non-WSA lands with wilderness characteristics that overlie these priority areas include Harts Point, Dark Canyon, and Shay Mountain. In addition, proposed greasewood treatments would overlie portions of Fish and Owl Creeks, Road Canyon, Comb Wash, Indian Creek, and Hammond Canyon. Depending on the method used to treat these areas – prescribed fire, mechanical, biological, or chemical – impacts to wilderness characteristics would be varied and are described above.

The control of noxious weeds would have both beneficial and adverse impacts on the wilderness characteristics of non-WSA lands, depending on the method of control, under all alternatives. The use of fire, chemical, and biological treatments would control noxious weeds and insects with no apparent evidence of human intervention on the landscape. Thus there would be no noticeable impact on the natural character of the non-WSA lands with wilderness characteristics, if those treatments were necessary. Control of non-native vegetation and restoration of native vegetation communities, however, would result in a more natural vegetation community, and thus a more natural condition of the non-WSA lands. The use of mechanical treatments to eradicate non-native vegetation and would leave a noticeable imprint of human work on the landscape, and degrade the natural character of non-WSA lands, if the treatments were to occur in the non-WSA lands. Depending on the vegetation community treated (grassland and shrub land vs. woodland or coniferous forest), the length of time the evidence of mechanical treatments remained on the landscape would vary before the surface and vegetation disturbances returned to a more natural or unmodified condition.

Reclaiming or restoring of up to 30,000 to 50,000 acres of vegetation treatments in FRCC III; maintaining existing land treatments; and implementing new vegetation treatments in sagebrush, pinyon-juniper, riparian, and greasewood habitats would have the same impact on the natural character of the non-WSA lands as described above. Depending on the treatment method used, the impacts on naturalness could be substantive in the short-term, but would be beneficial to the natural condition of the non-WSA lands in the long-term. If done by a surface-disturbing mechanized method, the evidence of human intervention on the land would be apparent and would be longer lasting.

4.3.8.15. Impacts of Visual Resource Management Decisions on Non- WSA Lands with Wilderness Characteristics

4.3.8.15.1. Impacts Common to All Alternatives

There are four objectives for visual resources management (VRM Classes I – IV) that provide for various levels of landscape protection and change. The objective of Class I is to preserve the characteristic landscape, while the objective of VRM Class IV provides for landscape modifications (see Chapter 3, Section 3.3.7). Land use planning decisions to designate and manage areas by Class I objectives would preserve the characteristic landscape. In non-WSA lands with wilderness characteristics, this objective (VRM Class I) would preserve the natural

character of the area. VRM Class II objectives would retain the characteristic landscape, allowing for minor changes to the landform and vegetation. This objective would generally protect the natural condition of the non-WSA lands. The objective of VRM Class III is to partially retain the existing character of the landscape, allowing for moderate changes to land and vegetation. This objective is not compatible with preserving the natural character of non-WSA lands. VRM Class IV objectives provide for major modification of the landscape, clearly incompatible with preservation of the natural character of non-WSA lands.

Under Class I and II objectives, preserving the natural character of the non-WSA lands would also preserve the undeveloped setting needed to support opportunities for solitude and primitive forms of recreation. Since VRM Class III and IV objectives would not preserve an undeveloped setting, opportunities for both solitude and primitive recreation would be diminished.

Table 4.70 shows the VRM objectives (Classes I – IV) for non-WSA wilderness areas, by alternative.

Table 4.70. VRM Classes in Non-WSA Lands with Wilderness Characteristics by Alternative

Name	Total Acres	VRM Class	Alt. A (acres)	Alt. B (acres)	Alt. C (acres)	Alt. D (acres)	Alt. E (acres)
Arch Canyon	50	I	0	0	0	0	50
		II	50	50	0	0	0
		III	0	0	50	50	0
		IV	0	0	0	0	0
Bridger Jack Mesa	23,050	I	0	0	0	0	23050
		II	18,900	19,580	18,010	0	0
		III	1,710	1,710	3,280	21,290	0
		IV	2,440	1,760	1,760	1,760	0
Butler Wash	1,660	I	0	40	40	40	1,660
		II	0	0	0	0	0
		III	1,660	1,620	1,620	1,620	0
		IV	0	0	0	0	0
Cheesebox Canyon	13,240	I	2,350	6,230	0	0	13,240
		II	3,700	0	2,610	0	0
		III	0	0	3,740	6,350	0
		IV	7,190	7,010	6,890	6,890	0
Comb Ridge	13,760	I	670	11,930	0	0	13,760
		II	10,760	0	11,650	0	0
		III	2,330	1,830	2,110	13,760	0
		IV	0	0	0	0	0

Table 4.70. VRM Classes in Non-WSA Lands with Wilderness Characteristics by Alternative

Name	Total Acres	VRM Class	Alt. A (acres)	Alt. B (acres)	Alt. C (acres)	Alt. D (acres)	Alt. E (acres)
Cross Canyon	1,350	I	0	0	0	0	1,350
		II	0	0	0	0	0
		III	0	0	0	0	0
		IV	1,350	1,350	1,350	1,350	0
Dark Canyon	66,330	I	6,530	3,260	3,260	3,260	66,330
		II	8,770	8,930	0	0	0
		III	29,510	30,880	39,800	39,800	0
		IV	21,520	23,260	23,270	23,270	0
Fish and Owl Creeks	24,650	I	2,890	0	0	0	24,650
		II	8,600	30	0	0	0
		III	11,550	0	23,040	23,040	0
		IV	1,610	24,620	1,610	1,610	0
Fort Knocker Canyon	12,410	I	5,130	0	0	0	12,410
		II	380	3,750	3,520	0	0
		III	0	0	230	3,750	0
		IV	6,900	8,660	8,660	8,660	0
Gooseneck	3,570	I	0	3,570	990	0	3,570
		II	3,570	0	80	0	0
		III	0	0	2,500	3,570	0
		IV	0	0	0	0	0
Grand Gulch	55,240	I	16,150	30	30	30	55,240
		II	6,270	0	0	0	0
		III	32,780	55,210	55,140	55,140	0
		IV	40	0	70	70	0
Gravel and Long	36,890	I	6,970	36,890	0	0	36,890
		II	29,850	0	6,350	0	0
		III	0	0	30,540	36,890	0
		IV	70	0	0	0	0
Hammond Canyon	4,700	I	0	0	0	0	4700
		II	0	0	0	0	0
		III	2,840	3,090	3,090	3,090	0
		IV	1,860	1,610	1,610	1,610	0
Harmony Flat	9,660	I	1,990	0	0	0	9,660
		II	6,000	8,400	8,400	0	0
		III	0	0	0	8,400	0
		IV	1,670	1,260	1,260	1,260	0

Table 4.70. VRM Classes in Non-WSA Lands with Wilderness Characteristics by Alternative

Name	Total Acres	VRM Class	Alt. A (acres)	Alt. B (acres)	Alt. C (acres)	Alt. D (acres)	Alt. E (acres)
Harts Point	24,740	I	450	150	0	0	24,740
		II	9,980	10,790	10,790	0	0
		III	40	20	170	10,960	0
		IV	14,270	13,780	13,780	13,780	0
Hatch Lockhart Hart	1,760	I	0	1,760	0	0	1,760
		II	1,760	0	0	0	0
		III	0	0	1,760	1,760	0
		IV	0	0	0	0	0
Indian Creek	23,280	I	3,970	19,700	4,130	0	23,280
		II	19,310	3,580	3,470	0	0
		III	0	0	15,680	23,280	0
		IV	0	0	0	0	0
Lime Creek	5,560	I	5,560	5,560	5,560	0	5,560
		II	0	0	0	0	0
		III	0	0	0	5,560	0
		IV	0	0	0	0	0
Mancos Mesa	61,570	I	19,270	15,220	0	0	61,570
		II	14,670	14,730	12,760	0	0
		III	8,740	12,090	28,780	41,540	0
		IV	18,890	19,530	20,030	20,030	0
Nokai Dome	94,270	I	16,030	12,390	0	0	94,270
		II	1,420	3,720	12,600	0	0
		III	13,680	15,160	18,490	32,000	0
		IV	63,140	63,000	63,180	62,270	0
Red Rock Plateau	17,010	I	0	0	0	0	17,010
		II	640	330	0	0	0
		III	0	0	330	330	0
		IV	16,370	16,680	16,680	16,680	0
Road Canyon	11,320	I	1,990	1,550	1,530	0	11,320
		II	240	17	0	0	0
		III	5,930	9,725	7,090	8,600	0
		IV	3,160	28	2,700	2,720	0
San Juan River	14,340	I	3,600	3,030	3,030	0	14,340
		II	650	890	890	3,020	0
		III	2,990	2,720	2,720	3,540	0
		IV	7,100	7,700	7,700	7,780	0

Table 4.70. VRM Classes in Non-WSA Lands with Wilderness Characteristics by Alternative

Name	Total Acres	VRM Class	Alt. A (acres)	Alt. B (acres)	Alt. C (acres)	Alt. D (acres)	Alt. E (acres)
Shay Mountain	6,710	I	1,890	0	0	0	6,710
		II	1,990	4,120	1,970	0	0
		III	1,110	1,040	3,190	5,160	0
		IV	1,720	1,550	1,550	1,550	0
Sheep Canyon	4,000	I	40	0	0	0	4,000
		II	0	0	0	0	0
		III	0	0	0	0	0
		IV	3,960	4,000	4,000	4,000	0
Squaw and Papoose Canyons	3,570	I	0	0	0	0	3,570
		II	0	0	0	0	0
		III	0	0	0	0	0
		IV	3,570	3,570	3,570	3,570	0
Upper Red Canyon	24,920	I	620	0	0	0	24,940
		II	0	0	0	0	0
		III	2,330	2,630	2,630	2,630	0
		IV	21,970	22,290	22,290	22,290	0
Valley of the Gods	13,670	I	13,670	13,670	13,670	0	13,670
		II	0	0	0	0	0
		III	0	0	0	13,670	0
		IV	0	0	0	0	0
White Canyon	9,080	I	30	0	30	0	9,080
		II	5,030	5,370	0	0	0
		III	0	0	5,340	5,370	0
		IV	4,020	3,710	3,710	3,710	0

4.3.8.15.2. ALTERNATIVE A

Under Alternative A, 240,480 acres would be managed by VRM Class I and II objectives in all of five and parts of 18 non-WSA lands with wilderness characteristics, protecting the natural character of those lands in the non-WSAs as described above. Conversely, 341,880 acres would be managed by Class III and IV objectives. While the focus of these VRM objectives is to provide for activities and uses that would change the landscape, this does not mean every acre would be developed or changed. Thus, in those non-WSA lands with these VRM objectives, the natural character of the affected non-WSA lands could be lost. And, if the naturalness of these areas is lost, the opportunities for solitude and primitive recreation would be lost, as the setting needed to support these opportunities would be altered.

4.3.8.15.3. ALTERNATIVE B

Under Alternative B, 217,410 acres would be managed by VRM Class I and II objectives in all of five and parts of 18 non-WSA lands with wilderness characteristics, protecting the natural character of those lands in the non-WSAs as described above. Conversely, 364,950 acres would be managed by Class III and IV objectives. The impact of these visual objectives on naturalness, solitude, and primitive recreation would be the same as described for Alternative A.

4.3.8.15.4. ALTERNATIVE C

Under Alternative C, 125,330 acres would be managed by VRM Class I and II objectives in all of one and parts of 18 non-WSA lands with wilderness characteristics, protecting the natural character of those lands in the non-WSAs. Also, under this alternative, 457,030 acres would be managed by VRM Class III and IV objectives. The impact of these visual objectives on naturalness, solitude, and primitive recreation would be the same as described for Alternative A.

4.3.8.15.5. ALTERNATIVE D

Under Alternative C, 6,350 acres would be managed by VRM Class I and II objectives in parts of four non-WSA lands with wilderness characteristics, protecting the natural character of those lands in the non-WSAs. Conversely, 570,010 acres would be managed by VRM Class III and IV objectives. The impact of these visual objectives on naturalness, solitude, and primitive recreation would be the same as described for Alternative A.

4.3.8.15.6. ALTERNATIVE E

Under Alternative D, 682,600 acres would be managed by VRM Class I objectives in all of the 29 non-WSA lands with wilderness characteristics, protecting the natural character of those lands in the non-WSAs, and the settings required to support opportunities for solitude and primitive forms of recreation.

In summary, the VRM class designations proposed in Alternative E would provide protection of the natural character of all the non-WSA lands with wilderness characteristics by applying a VRM Class I management objective to those lands. VRM objectives in Alternative A, which is the No Action Alternative, would provide protection to the natural character of the 240,480 acres in all or parts of 23 non-WSAs by applying both VRM Class I and II management objectives to those lands. Alternative B would protect 217,410 acres in all or parts of 23 non-WSAs also by applying both VRM Class I and II management objectives to those lands. Alternative C would protect 6,350 acres in portions of four non-WSA lands with wilderness characteristics.

4.3.8.16. IMPACTS OF WILDLIFE AND FISHERIES DECISIONS ON NON- WSA LANDS WITH WILDERNESS CHARACTERISTICS

Under all alternatives, a variety of decisions would be implemented to restore, maintain, and enhance wildlife habitat and populations. Improved wildlife populations would enhance the natural character of the land in all of the non-WSA lands with wilderness characteristics. Further, larger and healthier wildlife populations would expand opportunities for primitive and unconfined recreation opportunities, including wildlife viewing, hunting, and natural history study.

Within pronghorn fawning areas, which overlie a small part of the eastern portion of the Harts Point non-WSA lands with wilderness characteristics (under Alternatives B, C, and E only), special condition decisions would provide opportunities for solitude and primitive recreation on a seasonal basis by closing the habitat from May 1 – June 15 to numerous surface-disturbing activities. If construction of water sources to support antelope populations is needed, this would result in more animals and the benefits described above. Construction of human-made features on the land, however, would degrade the natural, undeveloped character of the non-WSA lands with wilderness characteristics. Under Alternative E, new water developments or facilities would most likely be precluded or mitigated within the wilderness characteristics lands due to the restrictive decisions in place.

In bighorn sheep habitat, a decision to prioritize habitat improvement projects on the "five mesa tops" could affect Upper Red Canyon, Red Rock Plateau, Gravel and Long Canyon, Cheesebox Canyon, White Canyon, and Mancos Mesa non-WSA lands with wilderness characteristics. This could include installation of guzzlers, development of springs, or vegetation manipulations, among other things. Because the five mesas are small, isolated mesa tops within a larger habitat, the animals move in and out of wilderness characteristics lands. Construction of water sources to support wildlife populations would result in more wildlife and the benefits described above. Construction of human-made features on the land, however, would degrade the natural, undeveloped character of the non-WSA lands with wilderness characteristics. Under Alternative E, new water developments or facilities would most likely be precluded or mitigated within the wilderness characteristics lands due to the restrictive decisions in place. Each of the alternatives defines a different habitat size for bighorn sheep lambing and rutting areas. Non-WSA lands with wilderness characteristics that overlie portions of this habitat by alternative are as follows:

- Alternatives A: Fort Knocker Canyon, White Canyon, Gravel and Long Canyon, Cheesebox Canyon, Mancos Mesa, and Upper Red Canyon
- Alternatives B, C and E: Fort Knocker Canyon, White Canyon, Gravel and Long Canyon, Cheesebox Canyon, Mancos Mesa, Nokai Dome, Upper Red Canyon, Gooseneck, Hatch/Lockhart/Harts, Indian Creek, and Harts Point
- Alternative D: Fort Knocker Canyon, White Canyon, Gravel and Long Canyon, Cheesebox Canyon, Mancos Mesa, Upper Red Canyon, Gooseneck, Hatch/Lockhart/Harts, Indian Creek, and Harts Point

Special condition decisions would help provide opportunities for solitude and primitive recreation on a seasonal basis by closing the lambing and rutting areas to numerous surface-disturbing activities from April 1 – June 15 and October 15 – December 15 (Alternative C), April 1 – July 15 and October 15 – December 31 (Alternatives A, B, and E), and April 15 – May 15 and November 1 – December 15 (Alternative D).

Numerous non-WSA lands with wilderness characteristics overlie crucial deer winter ranges. Numerous vegetation treatments are proposed within the crucial habitat to improve winter range. Depending on the type of treatment conducted, different impacts to wilderness characteristics could ensue. Vegetation treatments could be completed with fire, chemicals, biologically, or mechanically to achieve the desired vegetation condition. In the long-term, vegetation treatments with fire would restore vegetation communities and display a more natural composition of grasses, forbs, shrubs, and/or trees. If these treatments occurred in non-WSA lands with wilderness characteristics, this objective would enhance the natural character of the non-WSA

lands in the long-term. Maintenance of vegetation treatment areas with fire would maintain or enhance wildlife habitat and populations of species dependent on that habitat (deer and elk). If these treatments occurred in non-WSA lands with wilderness characteristics, healthy wildlife populations would enhance opportunities for primitive recreation – wildlife viewing and hunting. In the short-term, however, burning operations would result in disturbance of the landform and vegetation through fire-line construction needed to manage the fire. Further, the presence and noise of people, vehicles, equipment, and aircraft would eliminate opportunities for solitude and primitive and unconfined recreation in proximity to the fire. The impacts on opportunities for solitude and primitive recreation would be temporary, lasting for the duration of the burning operation and reclamation. When the fire and reclamation operations are complete, these opportunities would return. Soil and vegetation disturbance for fire-line construction would diminish the natural character of the non-WSA lands, but reclamation would restore the natural conditions in a relatively short period of time. Biological and chemical treatment methods would have similar impacts as prescribed fire. Mechanical vegetation manipulation in non-WSA lands with wilderness characteristics would have long-term impacts on the natural character of the non-WSA lands and opportunities for solitude and primitive and unconfined recreation. While restoration of vegetation communities would be beneficial to the natural character of non-WSA lands with wilderness characteristics, the use of chain saws, bull dozers, brush hogs, etc. to accomplish the objective would leave an obvious imprint of human activity on the land, diminishing the natural character of the non-WSA land(s). Also, in the short-term, the presence and noise of people and equipment would eliminate opportunities for solitude and primitive forms of recreation in proximity to the treatment area. In the long-term, a setting clearly manipulated by humans would reduce the opportunities for both solitude and primitive recreation.

Non-WSA lands with wilderness characteristics that overlie portions of the crucial deer winter habitat by alternative are as follows:

- Alternatives A and D: Harts Point, Dark Canyon, Butler Wash, Harmony Flat and Grand Gulch
- Alternatives B and E: Harts Point, Bridger Jack Mesa, Shay Mountain, Dark Canyon, Butler Wash, White Canyon, Sheep Canyon, Long Canyon, Gravel and Long Canyon, Cheesebox Canyon, Harmony Flat, Grand Gulch, Fish and Owl Canyon, Comb Ridge, Arch Canyon, Hammond Canyon
- Alternative C: Harts Point, Bridger Jack Mesa, Shay Mountain, Dark Canyon, Butler Wash, White Canyon, Cheesebox Canyon, Harmony Flat, Grand Gulch, Fish and Owl Canyon, and Comb Ridge

Special condition decisions would help provide opportunities for solitude and primitive recreation on a seasonal basis by closing the crucial deer winter range to numerous surface-disturbing activities from December 15 – April 30 (Alternative A), November 1 – May 15 (Alternative B and E), November 15 – April 15 (Alternative C), and December 1 – March 31 (Alternative D).

Numerous non-WSA lands with wilderness characteristics also overlie crucial elk habitat. Vegetation treatments are proposed within these areas to improve winter range for deer and elk. Depending on the type of treatment conducted, different impacts to wilderness characteristics could ensue (see analysis under crucial deer winter range above).

Non-WSA lands with wilderness characteristics that overlie portions (some very small) of this elk habitat by alternative are as follows:

- Alternatives A: None defined
- Alternatives B and E: Bridger Jack Mesa, Shay Mountain, Dark Canyon, Butler Wash, White Canyon, Gravel and Long Canyon, Cheesebox Canyon, Grand Gulch, Fish and Owl Canyon, Arch Canyon, and Hammond Canyon
- Alternative C and D: Bridger Jack Mesa, Shay Mountain, Dark Canyon, White Canyon, and Hammond Canyon

Special condition decisions would help provide opportunities for solitude and primitive recreation on a seasonal basis by closing the crucial deer winter range to numerous surface-disturbing activities from November 1 – May 15 (Alternative B and E), November 15 – April 15 (Alternative C), and December 1 – March 31 (Alternative D).

4.3.8.17. Impacts of Woodland and Forest Decisions on Non- WSA Lands with Wilderness Characteristics

Under all alternatives permits for woodland products would continue to be sold to the public, consistent with the availability of woodland products and the protection of sensitive resource values. Each alternative prescribes areas where woodland product harvest is allowed or prohibited. Table 4.71 provides the acres of areas open or closed to woodland harvest by alternatives for non-WSA lands with wilderness characteristics.

Table 4.71. Wood-Cutting Allocations in non-WSA Lands with Wilderness Characteristics

Wood-Cutting Allocations in Non-WSA Lands with Wilderness Characterstics			Alternative (acres)				
Name	Acres	Restriction	A	B	C	D	E
Arch Canyon	50	open	50	50	50	50	0
		closed	0	0	0	0	50
Bridger Jack Mesa	23,050	open	130	130	130	130	0
		closed	22,920	22,920	22,920	22,920	23,050
Butler Wash	1,660	open	0	0	0	0	0
		closed	1,660	1,660	1,660	1,660	1,660
Cheesebox Canyon	13,240	open	13,170	12,770	12,770	12,770	0
		closed	70	470	470	470	13,240
Comb Ridge	13,760	open	0	0	0	0	0
		closed	13,760	13,760	13,760	13,760	13,760
Cross Canyon	1,350	open	1,340	1,340	1,340	1,340	0
		closed	10	10	10	10	1,350
Dark Canyon	66,330	open	33,960	33,960	33,960	33,960	0
		closed	32,370	32,370	32,370	32,370	66,330
Fish & Owl Creeks	24,650	open	13,320	0	13,320	13,320	0
		closed	11,330	24,650	11,330	11,330	24,650

Table 4.71. Wood-Cutting Allocations in non-WSA Lands with Wilderness Characteristics

Wood-Cutting Allocations in Non-WSA Lands with Wilderness Characterstics			Alternative (acres)				
Name	Acres	Restriction	A	B	C	D	E
Fort Knocker Canyon	12,410	open	12,400	11,140	11,140	11,140	0
		closed	10	1,270	1,270	1,270	12,410
Gooseneck	3,570	open	0	0	0	0	0
		closed	3,570	3,570	3,570	3,570	3,570
Grand Gulch	55,240	open	21,924	0	21,924	21,924	0
		closed	33,316	55,240	33,316	33,316	55,240
Gravel & Long Canyon	36,890	open	36,850	36,420	36,420	36,420	0
		closed	40	470	470	470	36,890
Hammond Canyon	4,700	open	4,700	4,700	4,700	4,700	0
		closed	0	0	0	0	4,700
Harmony Flat	9,660	open	9,630	9,630	9,630	9,630	0
		closed	30	30	30	30	9,660
Harts Point	24,740	open	8,890	8,890	8,890	8,890	0
		closed	15,850	15,850	15,850	15,850	24,740
Hatch/Lockhart/Hart	1,760	open	0	0	0	0	0
		closed	1,760	1,760	1,760	1,760	1,760
Indian Creek	23,280	open	0	0	0	0	0
		closed	23,280	23,280	23,280	23,280	23,280
Lime Creek	5,560	open	0	0	0	0	0
		closed	5,560	5,560	5,560	5,560	5,560
Mancos Mesa	61,570	open	0	0	0	0	0
		closed	61,570	61,570	61,570	61,570	61,570
Nokai Dome	94,270	open	0	0	0	0	0
		closed	94,270	94,270	94,270	94,270	94,270
Red Rock Plateau	17,010	open	17,010	17,010	17,010	17,010	0
		closed	0	0	0	0	17,010
Road Canyon	11,320	open	1,810	0	1,810	1,810	0
		closed	9,510	11,320	9,510	9,510	11,320
San Juan River	14,340	open	0	0	0	0	0
		closed	14,340	14,340	14,340	14,340	14,340
Shay Mountain	6,710	open	4,040	4,040	4,040	4,040	0
		closed	2,670	2,670	2,670	2,670	6,710
Sheep Canyon	4,000	open	3,990	3,990	3,990	3,990	0
		closed	10	10	10	10	4,000

Table 4.71. Wood-Cutting Allocations in non-WSA Lands with Wilderness Characteristics

Wood-Cutting Allocations in Non-WSA Lands with Wilderness Characterstics			Alternative (acres)				
Name	Acres	Restriction	A	B	C	D	E
Squaw & Papoose Canyon	3,570	open	3,530	3,530	3,530	3,530	0
		closed	40	40	40	40	3,570
Upper Red Canyon	24,920	open	24,920	24,920	24,920	24,920	0
		closed	0	0	0	0	24,920
Valley of the Gods	13,670	open	0	0	0	0	0
		closed	13,670	13,670	13,670	13,670	13,670
White Canyon	9,080	open	9,080	9,080	9,080	9,080	0
		closed	0	0	0	0	9,080

4.3.8.17.1. ALTERNATIVE A

Commercial or personal wood cutting would be prohibited on 348,290 acres on all or portions of 24 non-WSA lands with wilderness characteristics. Ten non-WSAs would be completely restricted from wood-cutting activities (Butler Wash, Comb Ridge, Gooseneck, Hatch/Hart/Lockhart, Indian Creek, Lime Creek, Mancos Mesa, Nokai Dome, San Juan River, and Valley of the Gods), thereby preserving the natural character of the landscape from surface-disturbing activities associated with wood cutting. Those portions of the non-WSA lands with wilderness characteristics in the other 14 areas that are restricted from wood-cutting activities would be provided the same protections. However, in the 234,070 acres that remain open for wood cutting (and where the resource exists), wilderness characteristics may be compromised by surface-disturbing activities such as driving cross-country to the trees, cutting the trunks of trees and leaving stumps and debris, and by affecting the solitude and primitive recreation opportunities with mechanical chain saws and surface disturbances associated with human activity.

4.3.8.17.2. ALTERNATIVE B

Commercial or personal wood cutting would be prohibited on 400,760 acres on all or portions of 24 non-WSA lands with wilderness characteristics. Thirteen non-WSAs would be completely restricted from wood-cutting activities (Butler Wash, Comb Ridge, Fish and Owl Creek, Gooseneck, Grand Gulch, Hatch/Hart/Lockhart, Indian Creek, Lime Creek, Mancos Mesa, Nokai Dome, Road Canyon, San Juan River, and Valley of the Gods), thereby preserving the natural character of the landscape from surface-disturbing activities associated with wood cutting. Those portions of the non-WSA lands with wilderness characteristics in the other 11 areas that are restricted from wood-cutting activities would be provided the same protections. However, in the 181,600 acres that remain open for wood cutting (and where the resource exists), wilderness characteristics may be compromised by surface-disturbing activities such as driving cross-country to the trees, cutting the trunks of trees and leaving stumps and debris, and by affecting

the solitude and primitive recreation opportunities with mechanical chain saws and surface disturbances associated with human activity.

4.3.8.17.3. ALTERNATIVES C AND D

Under both of these alternatives, commercial or personal wood cutting would be prohibited on 350,380 acres on all or portions of 24 non-WSA lands with wilderness characteristics. Similar to Alternative A, 10 non-WSAs would be completely restricted from wood-cutting activities (Butler Wash, Comb Ridge, Gooseneck, Hatch/Hart/Lockhart, Indian Creek, Lime Creek, Mancos Mesa, Nokai Dome, San Juan River, and Valley of the Gods), thereby preserving the natural character of the landscape from surface-disturbing activities associated with wood cutting. Those portions of the non-WSA lands with wilderness characteristics in the other 14 areas that are restricted from wood-cutting activities would be provided the same protections. However, in the 231,980 acres that remain open for wood cutting (and where the resource exists), wilderness characteristics may be compromised by surface-disturbing activities such as driving cross-country to the trees, cutting the trunks of trees and leaving stumps and debris, and by affecting the solitude and primitive recreation opportunities with mechanical chain saws and surface disturbances associated with human activity.

4.3.8.17.4. ALTERNATIVE E

All 266,485 acres of non-WSA lands with wilderness characteristics in the 32 areas within the Monticello PA would be restricted from wood-cutting activities under this alternative. All wilderness characteristics values would therefore be protected from this activity and maintain the natural character and opportunities for solitude and primitive recreation.

4.3.8.18. SUMMARY OF IMPACTS

See Table 2.2 for a summary of impacts to non-WSA lands with wilderness characteristics. About 582,360 acres of non-WSA lands with wilderness characteristics have been found in the Monticello PA. Under Alternative A, there would be adverse impacts to 98% (571,057 acres) of these lands. Alternative E protects 100% (582,360 acres) of non-WSA lands with wilderness characteristics. Alternatives B, C, and D provide varying amounts of protection to non-WSA lands with wilderness characteristics; generally, speaking the protection provided is in are decreasing order.

4.3.8.19. MITIGATION MEASURES

Any surface-disturbing activities would result in impacts to naturalness. However, mitigation measures such as those found in Appendix A and Appendix I could reduce these impacts.

4.3.8.20. UNAVOIDABLE ADVERSE IMPACTS

Under all alternatives, lands inventoried as having wilderness characteristics are not withdrawn from mineral entry. Although development for locatable minerals is not anticipated, mining claimants would have the right to develop mining claims. It is possible that some unavoidable adverse impacts from mining operations could occur that would impact naturalness and opportunities for solitude.

4.3.8.21. SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

Any short-term use that results in surface disturbance would result in long-term impacts to naturalness.

4.3.8.22. IRREVERSIBLE AND IRRETRIEVABLE IMPACTS

Any use that results in surface disturbance could impact naturalness, the larger the impact, the greater the likelihood of the irreversibility and irretrievability to wilderness characteristics. In certain areas, surface-disturbing impacts could not be reclaimed, making these impacts irreversible and irretrievable.

4.3.9. PALEONTOLOGICAL RESOURCES

The BLM Utah State Paleontologist has classified all of the geologic units within the Monticello PA according to the Potential Fossil Yield Classification system (PFYC). The BLM is currently using this study in lieu of the current paleontological resource management classification system in the process of considering the use of the PFYC as policy. The PFYC system is described in Chapter 3 (Section 3.10, Paleontology), and the results of the PFYC classification for the Monticello PA form the basis for the analysis of impacts to paleontological reources.

For this analysis, the 46 mapped geologic units that occur within the Monticello PA were classified according to the PFYC, and the results are shown in Table 4.72. Three units are Class 1, eight are Class 2, nineteen are Class 3, fourteen are Class 4/5, and two are Class 5. Surficial exposures of Class 1 units comprise approximately 19 acres, Class 2 units encompass approximately 458,885 acres, Class 3 units are within approximately 901,335 acres, Class 4/5 are in approximately 277,556 acres, and Class 5 lie within approximately 146,960 acres.

Table 4.72. Mapped Geologic Units within the BLM Monticello PA and Their PFYC Classes, in Approximate Descending Stratigraphic Order

Age	Mapped Geologic Unit(s)	PFYC Class
Quaternary (Holocene)	Landslide deposits, alluvium, sand and gravel deposits, colluvium, talus deposits, slopewash, pediment deposits, eolian deposits, dune sand, terrace gravels, surficial material	2
Quaternary (Pleistocene)	Landslide deposits, alluvium, sand and gravel deposits, colluvium, talus deposits, slopewash, pediment deposits, eolian deposits, dune sand, terrace gravels, surficial material	2
Tertiary	Abajo Mountain Intrusives	1
	Minette Intrusives	1
	Explosion Breccia	1
Cretaceous	Mancos Shale	3
	Cedar Mountain Formation	5
	Dakota Sandstone	3
	Burro Canyon Formation	4/5
	Dakota and Burro Canyon formations	4/5

Table 4.72. Mapped Geologic Units within the BLM Monticello PA and Their PFYC Classes, in Approximate Descending Stratigraphic Order

Age	Mapped Geologic Unit(s)	PFYC Class
Jurassic	Morrison Formation – Brushy Basin Member	5
	Morrison Formation – Westwater Canyon Member	4/5
	Morrison Formation – Salt Wash Member	4/5
	Morrison Formation - Recapture Member	4/5
	Bluff Sandstone	2
	Summerville Formation	3
	Summerville and Curtis Formations	3
	Entrada Sandstone	2
	Summerville Formation and Entrada Sandstone	3
	Carmel Formation	2
	Navajo Sandstone	2
	Kayenta Formation	3
	Navajo Sandstone and Kayenta Formation	3
	Wingate Sandstone	2
	Kayenta Formation and Wingate Sandstone	3
Triassic	Moenave Formation and Wingate Sandstone	3
	Chinle Formation	4/5
	Chinle Formation – Moss Back Member	4/5
	Chinle Formation – Moss Back Member and lower part	4/5
	Chinle Formation – Church Rock and Owl Rock Members	4/5
	Chinle Formation – lower part	4/5
	Chinle Formation – Monitor Butte Member	4/5
	Chinle Formation – Petrified Forest and Moss Back Members	4/5
	Chinle Formation – Shinarump Member and Mottled Siltstone Member	4/5
	Chinle Formation – upper part	4/5
	Moenkopi Formation	3
Permian	Cutler Formation	3
	Cutler Formation – White Rim Sandstone Member	2
	White Rim Sandstone Member and Organ Rock Tongue	3
	Cutler Formation – Organ Rock Tongue	3
	Cutler Formation – Halgaito Tongue	3
	Cutler Formation – Cedar Mesa Sandstone	3
	Cutler Formation – unnamed arkose	
	Cutler Formation – transition zone with Cedar Mesa Sandstone Member	

Table 4.72. Mapped Geologic Units within the BLM Monticello PA and Their PFYC Classes, in Approximate Descending Stratigraphic Order

Age	Mapped Geologic Unit(s)	PFYC Class
Pennsylvanian	Rico Formation	3
	Hermosa Formation	3
	Hermosa Formation – upper part	3
	Hermosa Formation – Paradox Member	3

Geologic mapping by: Hackman and Wyant, 1973 (Escalante 1° × 2° Quadrangle, scale 1:250,000); Haynes et al., 1972 (Cortez 1° × 2° Quadrangle, scale 1:250,000); Williams, 1964 (Moab 1° × 2° Quadrangle, scale 1:250,000); and Williams and Hackman, 1971 (Salina 1° × 2° Quadrangle, scale 1:250,000).

As discussed in Chapter 3, Section 3.10.4, Class 1 geologic units have no sensitivity (i.e., are not likely to contain recognizable fossil remains), thus none or negligible impacts to paleontological resources would be expected. Geologic units designated as Class 2 have a low sensitivity (not likely to contain scientifically valuable fossils), with likely negligible to minor impacts to paleontological resources. Class 3 geologic units have moderate sensitivity (the fossil content varies in scientific significance, in abundance, and in predictable occurrence), and the risks of adverse impacts to paleontological resources within this unit would be moderate. Class 4/5 and Class 5 geologic units have been designated high-sensitivity units (highly fossiliferous geologic units that regularly and predictably produce vertebrate fossils and/or scientifically significant nonvertebrate fossils, and that are at risk of natural degradation and/or human-caused adverse impacts), and thus would have a high risk of being adversely impacted. Since the risks to paleontological resources in Class 1 and Class 2 units range from none to minor, only potential impacts to Class 3, Class 4/5, and Class 5 units are discussed in the following subsections.

4.3.9.1. Types of Paleontological Resource Impacts

The loss or destruction of any identifiable fossil that could yield information important to prehistory, or that embodies the distinctive characteristics of a type of organism, environment, period of time, or geographic region, would be a significantly adverse paleontological impact. Direct adverse impacts on paleontological resources would primarily concern the potential destruction of non-renewable paleontological resources and the loss of information associated with these resources, including the unlawful or unauthorized collection of fossil remains. If potentially fossiliferous bedrock or surficial sediments were disturbed, the disturbance could result in the adverse destruction of paleontological resources and subsequent loss of information. At the site-specific project level, direct, adverse impacts can typically be reduced to a level below significance through the implementation of paleontological mitigation.

Surface disturbance may result in the exposure of fossils that would not likely have been unearthed via natural processes. If mitigation measures are implemented, these newly exposed fossils would become beneficially available for salvage, data recovery, scientific analysis, and permanent preservation at a public museum. The beneficial impacts resulting from mitigation would include advances in scientific knowledge by both permitted field researchers and paleontologists who study fossils in museum collections, contributions to public education and interpretation, and community involvement and partnerships.

In general, in those areas that are underlain by paleontologically sensitive geologic units, the greater the amount of ground disturbance, the higher the potential for adverse impacts to paleontological resources. For areas that are directly underlain by geologic units with no paleontological sensitivity, there would be no potential for impacts on paleontological resources unless sensitive geologic units that underlie the non-sensitive unit were also impacted. Impacts analyzed in this section include direct (ground-disturbance-related), indirect (operations-related), and cumulative impacts of the proposed management decisions.

4.3.9.1.1. Direct Impacts to Paleontological Resources

Direct impacts would result from activities planned or authorized by the BLM, and would occur at the same time and place as the surface-disturbing activity. The potential for direct impacts on scientifically important surface and sub-surface fossils in fossiliferous sedimentary deposits is controlled by two factors: 1) the depth and lateral extent of disturbance of fossiliferous bedrock and/or surficial sediments, and 2) the depth and lateral extent of occurrence of fossiliferous bedrock and/or surficial sediments beneath the surface. Ground disturbance has the potential to adversely impact an unknown quantity of fossils that may occur on or underneath the surface in areas containing paleontologically sensitive geologic units. Without mitigation, these fossils, as well as the paleontological data they could provide if properly salvaged and documented, could be adversely impacted, rendering them permanently unavailable for future scientific research.

4.3.9.1.2. Indirect Impacts to Paleontological resources

Indirect impacts would occur later in time or farther away in distance than direct impacts, but are still reasonably foreseeable. They would typically include those impacts that result from the continuing implementation of management decisions and associated activities, and/or the normal, ongoing operations of facilities constructed within a specific project area. For example, an indirect adverse impact on paleontological resources would be the construction of a new road that increases public access to a previously inaccessible area, and results in unauthorized fossil collecting and vandalism. Mitigation strategies could include surveys by permitted and qualified paleontologists to collect important surface fossils, transfer them to a public museum, and identify locations of fossil localities that have the potential to yield additional fossils as erosion occurs. Other mitigation strategies could include augmentation of law enforcement staff and increased patrols, and the construction of protective fencing or other barriers around known paleontological sites.

4.3.9.2. Impacts Common to All Alternatives

Management decisions related to fire management could have long-term direct and indirect adverse and beneficial impacts on paleontological resources. Surface-disturbing actions such as road construction, the building of fire lines, and prescribed burns could damage or destroy surface fossils in paleontologically sensitive areas/geologic units (Class 3, 4/5, and 5). In these areas, paleontological resource impacts mitigation would reduce potential direct, adverse impacts to below the level of significance. Surface fossils would be collected by a qualified and BLM-permitted paleontologist prior to surface disturbance, and paleontological monitoring of construction-related excavations would allow the salvage and recovery of important sub-surface paleontological resources. The recovered fossils would be transferred to a public museum for permanent storage. Potential long-term, adverse indirect impacts would result from the

construction of new fire roads and fire breaks, which would increase OHV access into areas that were previously less accessible or inaccessible to the public, thus increasing the potential for unauthorized fossil collecting (poaching) and vandalism. The recovery and preservation of fossils as the result of paleontological mitigation would be a beneficial impact because it would permanently preserve paleontological resources that may have otherwise never been discovered, and make them available for scientific research, education, and display.

Decisions related to paleontological resource decisions common to all alternatives could have both short- and long-term, direct and indirect, beneficial impacts on paleontological resources. Under all alternatives, management decisions would be designed to reduce potential adverse impacts to below the level of significance. All alternatives would promote and facilitate scientific research by qualified and permitted paleontologists, encourage partnerships, manage access to scientifically significant fossils, reduce unauthorized use of known paleontological resources, and would provide for mitigation of adverse impacts on scientifically significant surface and sub-surface fossils where necessary to protect them and ensure their permanent storage and preservation in a public museum. Appropriate recreational use of common invertebrate and plant fossils would be encouraged, as would public education and interpretation of paleontological resources. Paleontological Resource Use Permits administered by the BLM Utah State Office for scientific study would provide important information to the Monticello FO about the locations (both geographic and stratigraphic) and kinds of important paleontological resources in their jurisdiction. Providing Internet Web sites, local interpretive sites, and written information to the public about fossils and hobby collection would have the potential to directly and beneficially impact the resource by increasing the public's knowledge of the earth sciences and encouraging good stewardship, potentially reducing illegal collection, and increasing the likelihood that important paleontological discoveries would be reported to the BLM.

Management decisions related to air quality, cultural resources, health and safety, vegetation, riparian areas, soils and watersheds, visual resources, wildlife, and special status species would have negligible impacts on paleontological resources, and therefore will not be further analyzed. No additional impact analysis is needed because maintaining air quality by ensuring that constituent pollutants do not exceed standard threshold levels; surveying sites, protecting cultural resources, and developing interpretive sites; maintaining public health by reclaiming AML sites and managing potentially hazard materials; applying vegetation treatments to improve ecosystem health; protecting riparian resources, sensitive soils, and watersheds from surface disturbances would neither inhibit nor enhance the scientific collection and analysis of important fossils, not affect recreational collection of fossils, nor alter the ability of the BLM to protect fossil resources. Also, neither would the protection of scenic quality nor protecting wildlife habitat and federally listed and sensitive species affect the preservation, collection and/or study of paleontologic resources.

4.3.9.3. ALTERNATIVES IMPACTS

This subsection discusses the impacts of the proposed alternative resource management decisions on paleontological resources. Because the analyses of the management decisions presented in this chapter do not reflect specific projects or actions, some impacts can only be expressed qualitatively. In most cases, subsequent site-specific analyses would be required in order to implement resource management decisions. These analyses would address potential site-specific impacts on a variety of resources, including paleontological resources. More detailed or locality-

specific studies and appropriate environmental documents would be prepared in compliance with NEPA and its implementing regulations as well as BLM policy as required.

Actions related to lands and realty management decisions would have long-term indirect, adverse and beneficial impacts on paleontological resources. Land acquisitions by the BLM would affect paleontological resources by increasing public access to areas that contain paleontologically sensitive geologic units and areas that contain fossil localities. Public access to these areas could result in an increased adverse risk of unauthorized collection or vandalism of paleontological resources. However, land acquistions would also create the opportunity for the BLM to establish stewardship of paleontological resources on these newly acquired lands, which could result in associated educational benefits including interpretive opportunities and the permanent storage of scientifically significant fossils collected in public museums. Transfer of BLM lands to private ownership would have long-term, indirect, and cumulatively adverse impacts on paleontological resources by removing scientifically significant fossils from the public domain, thus rendering them permanently unavailable for scientific research and education. Commercial exploration and development, and associated access of BLM lands for energy resources would have direct and indirect, adverse impacts on paleontological resources. Surface-disturbing activities associated with exploration and development could damage or destroy scientifically significant surface and sub-surface fossils. The ongoing operations of commercial energy facilities and associated infrastructure on BLM lands would have indirect, adverse impacts on paleontological resources by increasing access to lands that were previously inaccessible, and thus increasing the likelihood of unauthorized fossil collecting and vandalism.

Management decisions related to livestock grazing decisions could have direct and indirect adverse impacts on paleontological resources from livestock grazing in areas containing occurrences of scientifically significant surface fossils. This is because damage to or destruction of surface fossils is known to occur as a result of trampling by livestock (similar to the impacts on cultural resources from livestock grazing, see Section 4.3.2.3.1). Generally, grazing areas would be evaluated for important paleontological resources if they occur in areas containing paleontologically sensitive units (Classes 3, 4/5, and 5). See Section 4.3.6.3, Livestock Grazing Alternatives Impacts, for the range of acreages unavailable to livestock grazing.

Surface disturbance that results from mineral exploration and development (including geophysical surveys) could adversely affect paleontological resources by damaging or destroying them. Under all alternatives, management decisions related to minerals decisions would provide for a variety of mineral exploration and development activities for oil and gas, coal, tar sand, sand and gravel, potash, and geothermal resources. Because these activities typically involve surface disturbance, adverse impacts on paleontological resources would result under all alternatives, if mitigation was not applied. These impacts are most likely to occur in paleontologically sensitive units that are designated as Class 3, 4/5, and 5. Therefore, the PFYC classes of geologic units and surface acreage eligible for minerals exploration and development are an important consideration to paleontological resource impacts.

Management decisions related to recreation decisions would have both adverse and beneficial direct and indirect long-term impacts on paleontological resources. For example, allowing motorized vehicles into previously prohibited areas increases the likelihood that scientifically significant surface fossils could be accidentally damaged or destroyed, or intentionally vandalized. Management decisions such as implementing public education and environmental

awareness programs, such as the BLM's "Tread Lightly!" and “Leave No Trace” programs, would reduce illegal fossil collection, vandalism, or accidental destruction by educating the public on the need to preserve the resource. Developed recreation sites are closed to recreational fossil collection (see 43 CFR 8365.1-5[b]). This closure would thus reduce potentially adverse impacts on paleontological resources. Direct impacts on paleontological resources resulting from recreation decisions would be related to the level of surface disturbance associated with recreational development, such as the construction of recreational facilities including roads, and the degree of increased human activity in paleontologically sensitive areas/geologic units. Potential long- and short-term indirect impacts would also result from increases in levels of unauthorized collecting and associated vandalism that could accompany increased human activity. It should be noted, however, that regulated recreational use of areas tends to provide better protection to paleontological resources than does unregulated use. Collecting common invertebrate and plant fossils for personal, noncommercial use is an accepted, low-impact use of public lands, and could foster a greater overall appreciation for paleontological resources and their scientific importance. In areas containing known fossil localities, mitigation could include surveys to collect exposed fossils and transfer them to a qualified public museum, or the installation of fencing or other barriers around the known fossil localities to protect the resources.

Under each alternative, recreation decisions would continue existing ROWs for all existing developed recreation sites and facilities, and would provide similar protective ROWs for all new recreation facilities. The primary framework for recreation management in the Monticello PA is the Special Recreation Management Area (SRMA). SRMAs are used to define components of the recreation program including OHV designations, recreation permitting, developed recreation facilities, campsite designation, tourism, and heritage tourism. All lands outside of the SRMAs are designated as part of the Extensive Recreation Management Area (ERMA), which is defined as the area where recreational opportunities and concerns do not require explicit recreation management.

Impacts related to special designations decisions could have indirect, adverse and beneficial impacts on paleontological resources. For the purpose of this analysis, Special Designations fall into two categories: Areas of Critical Environmental Concern (ACECs) and Wild and Scenic Rivers (WSRs). FLPMA defines an ACEC as an area "within the public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards." ACECs differ from some other special management designations in that designation by itself does not automatically prohibit or restrict other uses in the area. The 1968 Wild and Scenic Rivers Act established legislation for a National Wild and Scenic Rivers System (NWSRS) to protect and preserve designated rivers throughout the nation in their free-flowing condition, as well as their immediate environments. The Act contains policy for managing designated rivers, and created processes for designating additional rivers into the National System. To the extent that Special Designations of BLM lands in paleontologically sensitive areas/geologic units (Class 3, 4/5, and 5) result in restricted public access and use, and prohibit surface-disturbing actions, paleontological resources would be less likely to be unlawfully collected or vandalized, or damaged or destroyed by livestock, vehicular traffic, or construction. Therefore, in this general sense, Special Designations represent a beneficial impact on paleontological resources because they lessen the probability of their permanent loss to

science and education. If public access to special designations areas such as ACECs is encouraged or facilitated with trails, roads, or off-road use, and surface-disturbing actions are permitted, adverse direct and indirect impacts on paleontological resources could occur. These impacts could be reduced to below the level of significance with the implementation of paleontological mitigation measures designed to collect scientifically significant fossils prior to ground disturbance and transfer them to a public museum, or to protect resources in place with the installation of fencing or other protective barriers. Under each alternative, varying management decisions would apply to ACECs and WSRs. Decisions related to ACECs and WSRs include various levels of management prescriptions for the 12 ACECs and eligible WSRs segments managed by the Monticello FO.

Impacts related to travel decisions are generally similar to those discussed under recreation in that they include potentially adverse, direct and indirect impacts on paleontological resources associated with surface-disturbing actions, and increased public access to BLM lands resulting in a greater potential for unauthorized fossil collecting or vandalism. The construction of travel infrastructure such as roads, trails, and trailheads would be associated with construction-related surface disturbance that could damage or destroy fossils in areas with paleontologically sensitive areas/geologic units (Class 3, 4/5, and 5). The overall increase in public access to BLM lands associated with travel decisions would increase the potential for unauthorized fossil collecting (poaching) and vandalism. As with other management decisions, the potentially adverse impacts to paleontological resources could be reduced to below the level of significance through mitigation. Mitigation in itself would be a beneficial impact because it would result in the authorized collection of fossils that may otherwise never have been discovered, along with their preservation in a public museum where they would be available for scientific research and education. Mitigation strategies would include surveys of paleontologically sensitive areas/geologic units by a qualified and permitted paleontologist in areas where surface-disturbing actions are planned, to collect surface occurrences of fossils and associated data. It would also include the installation of protective fencing or other barriers around known fossil localities. Interpretive signs and displays in paleontologically sensitive areas. Mitigation could include the encouragement of lawful collection of invertebrate and plant fossils, could foster a greater overall appreciation for paleontological resources and their scientific significance.

Decisions related to woodlands decisions would have long-term direct adverse impacts on paleontological resources due to surface-disturbing actions from OHV access, road construction, and commercial and private woodland harvesting. Additionally, the increase in public access resulting from new roads would have indirect adverse impacts on paleontological resources because it could increase the potential for unauthorized fossil collecting and vandalism. The implementation of paleontological mitigation measures in paleontologically sensitive areas/geologic units prior to and during the construction of new roads and other surface-disturbing activities related to woodlands management would reduce potential adverse direct and indirect impacts on paleontological resources to below the level of significance. Such measures provide for a qualified and BLM-permitted paleontologist to collect scientifically significant surface fossils and associated data, and transfer these resources to a public museum for permanent storage.

Under all action alternatives, woodlands decisions would include the harvesting of woodlands in 9 proposed harvesting zones. Woodlands resource management decisions would be guided by

BLM Forest Health and Forest Management standards and guidelines, and the Healthy Forests Initiative.

4.3.9.3.1. Impacts of Lands and Realty Decisions on Paleontological Resources

The analysis of impacts of lands and realty decisions on paleontological resources under each alternative address wind and solar energy exploration and development, and related ROWs.

4.3.9.3.1.1. Alternative A

Under Alternative A, there are no specified restrictions on the locations of exploration and development for wind and solar energy within the Monticello PA (except in WSAs). This alternative would have the highest potential for adverse impacts on paleontological resources as it could result in the greatest amount of surface disturbance associated with wind and solar energy exploration and development activities.

4.3.9.3.1.2. Alternative B

Under Alternative B, wind and solar energy would be permitted on all lands within the Monticello PA except WSAs, eligible Wild and Scenic River segments, ACECs, all areas managed as open to minerals leasing with major constraints (such as areas under NSO leasing stipulations), designated VRM Class I, II, and III areas, migratory bird habitats and raptor-nesting complexes in riparian habitats and sagebrush and aspen, and special status species habitats. Of all the proposed alternatives, Alternative B would exclude the second largest area within the Monticello PA from wind and solar energy exploration and development, primarily because of VRM constraints on surface disturbances that could impact scenic quality (see Table 4.184 VRM Acreages by Alternative). Thus, this alternative has the second lowest potential for adverse impacts on paleontological resources as it would result in the second least amount of surface disturbance associated with wind and solar energy exploration and development activities. Compared to Alternative A, this alternative would have more beneficial impacts to the resource because more area would be protected from surface disturbances.

4.3.9.3.1.3. Alternative C

Under Alternative C, wind and solar energy would be permitted on all lands within the Monticello PA except WSAs, eligible Wild and Scenic River corridors, ACECs, all areas managed as open to oil and gas leasing with major constraints (such as areas under NSO stipulations), designated VRM Class I, II, and III areas, and migratory bird habitats and raptor-nesting complexes in riparian habitats and sagebrush and aspen. Alternative C exempts the third largest area of the PA from wind and solar energy exploration and development, primarily because of VRM management objective constraints on surface disturbances. Management decisions would be identical to Alternative B, except that energy exploration and development would be permitted in special status species habitats. The impacts of this alternative, when compared to Alternative A, would be the same as Alternative B.

4.3.9.3.1.4. Alternative D

Under Alternative D, wind and solar energy would be permitted on all lands within the Monticello PA except WSAs, designated VRM Class I areas, threatened and endangered species habitats, and all areas managed as open to oil and gas leasing with major constraints (such as

NSO areas). Alternative D exempts the fourth largest amount of BLM land from wind and solar energy exploration and development (after Alternatives B, C, and E). As related to potential surface disturbance and increased access to public lands associated with wind and solar energy exploration and development, potential adverse impacts on paleontological resources under Alternative D would be less than Alternative A for the same reasons as discussed under Alternative B.

4.3.9.3.1.5. Alternative E

Lands and realty management decisions under Alternative E would be the same as the impacts discussed under Alternative B, except that 582,360 acres of non-WSA lands with wilderness characteristics would be managed as exclusion areas for ROWs, including ROWs for wind and solar energy. This would restrict or prohibit surface disturbances and would have additional long-term, beneficial, preservation-related impacts on paleontological resources. Compared to Alternative A, this alternative would have the lowest potential for adverse impacts to the resource because it would result in the least amount of surface disturbance associated with wind and solar energy exploration and development activities.

4.3.9.3.2. Impacts of Livestock Grazing Decisions on Paleontological Resources

4.3.9.3.2.1. Alternative A

Under Alternative A, no acres of Class 1 units, 1,501 acres of Class 2 units, 129,899 acres of Class 3 units, 5,151 acres of Class 4/5 units, and 724 acres of Class 5 units would be unavailable for livestock grazing. Alternative A would have the highest potential for adverse impacts on paleontological resources in sensitive areas/geologic units because it would manage the least amount of land as unavailable to livestock grazing (117,921 unavailable acres, with an additional 16,599 acres in the Comb Wash Allotment as unavailable), and thus would have the greatest likelihood of livestock trampling of important surface fossils.

4.3.9.3.2.2. Alternatives B and E

Alternatives B and E would manage the same number of acres as unavailable for grazing (117,921 acres, with additional 26,086 acres as unavailable to livestock grazing) for the life of the plane, including portions of Slickhorn Canyon (Perkins Brother's Allotment), Rone Bailey Mesa (Upper Mail Station Allotment), Dodge Canyon Allotment, Mule Canyon, Arch Canyon, Fish and Owl Canyons, Road Canyon, Roger Allotment, West Butler Wash Canyon, and Horsehead Canyon within the Montezuma Canyon Allotment. Under Alternatives B and E, no acres of Class 1 units, 4,034 acres of Class 2 units, 126,939 acres of Class 3 units, 7,552 acres of Class 4/5 units, and 2,053 acres of Class 5 units would be unavailable for livestock grazing. These alternatives would restrict other areas to livestock trailing only, with no grazing, and the BLM would develop seasonal restrictions, unavailable acreages, and/or forage utilization limits on grazing in riparian areas considered to be Functioning at Risk. Compared to Alternative A, this alternative would have more beneficial impacts on paleontological resources because more area would be protected from the potential impacts of livestock trampling.

Alternatives B and E would have the lowest potential for long-term adverse impacts to the resource because these alternatives would impose the most restrictions on livestock grazing, with reduced potential for adverse impacts to paleontological resources. Compared to Alternative A,

these alternatives would be have less adverse impacts to the resource from livestock grazing because more area would be unavailable to livestock grazing disturbances of surface fossils. The impacts comparison of this alternative with Alternative A would be the same as discussed above for Alternative B.

4.3.9.3.2.3. Alternative C

Alternative C would have the second largest acreage managed as unavailable for livestock grazing (after Alternative E) by managing 117,921 acres as unavailable, with additional 24,762 acres as unavailable. The acreages and impacts would be the same as discussed under Alternative B, except that Alternative C opens Mule Canyon below U-95 to livestock grazing. Under Alternative C, zero acres of Class 1 units, 4,031 acres of Class 2 units, 134,159 acres of Class 3 units, 7,552 acres of Class 4/5 units, and 2,053 acres of Class 5 units would be unavailable for livestock grazing. The impacts comparison with Alternative A would be the same as discussed under Alternatives B and E.

4.3.9.3.2.4. Alternative D

Alternative D livestock grazing decisions would manage the fourth most acreage as unavailable to livestock grazing (with slightly less unavailable acreages [117,921 acres as unavailable, with an additional 22,593 acres], when compared to Alternative A). Under Alternative D, Slickhorn Canyon (Perkins Brother's Allotment), Rone Bailey Mesa (Upper Mail Station Allotment), Mule Canyon below U-95, Arch Canyon, Fish and Owl Canyons, Road Canyon, Rogers Allotment, and portions of West Butler Wash Canyons would be unavailable for livestock grazing for the life of the plan. Under Alternative D, zero acres of Class 1 units, 2,664 acres of Class 2 units, 130,032 acres of Class 3 units, 5,111 acres of Class 4/5 units, and 724 acres of Class 5 units would be unavailable for livestock grazing. Alternative D would have a higher potential for adverse impacts on paleontological resources in sensitive areas/geologic units due to livestock trampling than Alternatives B, C, and E, but a lower potential for adverse impacts than Alternative A.

4.3.9.3.3. Impacts of Minerals Decisions on Paleontological Resources

4.3.9.3.3.1. Alternative A

The number of acres open to oil and gas leasing under both standard and special stipulations within each Monticello PA RFD area under Alternative A and corresponding paleontological sensitivities of geologic units is shown in Table 4.73.

Table 4.73. Proposed Acreages per PFYC Classes Open to Oil and Gas Leasing Under Alternative A for Each of the RFD Areas

	Class 1	Class 2	Class 3	Class 4/5	Class 5
Blanding	19	78,268	36,241	163,403	120,136
Monument Upwarp	0	166,911	335,015	72,658	12,506
Paradox Fold and Fault	0	127,473	85,977	31,317	8,306
Total	**19**	**372,652**	**457,233**	**267,378**	**140,948**

Table 4.74 shows the oil and gas leasing stipulations applicable by RFD area for Alternative A.

Table 4.74 Oil and Gas Leasing Stipulations (acres) by RFD Area, Alternative A

RFD Area	Open with Standard Conditions	Open with Special Stipulations	Open with No Surface Occupancy	Closed to Oil and Gas Leasing
Blanding	270,410	127,657	9,059	15,547
Monument Upwarp	144,241	442,848	147,249	359,337
Paradox Fold and Fault	163,953	89,121	4,916	10,432

Alternative A has the second lowest potential for adverse, surface disturbance-related impacts on paleontological resources because it proposes opening the second least amount of land containing paleontologically sensitive (Class 3, 4/5, and 5) geologic units for minerals exploration and development (see Table 4.83 in Section 4.3.9.4, Summary of Impacts).

4.3.9.3.3.2. Alternative B

The number of acres open to oil and gas leasing under both standard and special stipulations within each RFD area under Alternative B and corresponding paleontological sensitivities of geologic units is provided in Table 4.75:

Table 4.75. Proposed Acreages per PFYC Classes Open to Oil and Gas Leasing Under Alternative B for Each of the RFD Areas

	Class 1	Class 2	Class 3	Class 4/5	Class 5
Blanding	19	56,593	30,408	159,113	120,217
Monument Upwarp	0	179,266	400,895	75,585	12,506
Paradox Fold and Fault	0	120,491	51,713	26,851	8,180
Total	**19**	**356.350**	**483,016**	**261,751**	**140,903**

Table 4.76 below shows the oil and gas leasing stipulations applicable by RFD area for Alternative B.

Table 4.76. Oil and Gas Leasing Stipulations (acres) by RFD Area, Alternative B

RFD Area	Open with Standard Conditions	Open with Special Stipulations	Open with No Surface Occupancy	Closed to Oil and Gas Leasing
Blanding	148,521	214,212	39,805	15,000
Monument Upwarp	192,290	456,604	35,826	390,014
Paradox Fold and Fault	24,359	182,876	49,473	11,597

Alternative B has the third lowest potential for surface disturbance-related adverse impacts on scientifically significant paleontological resources because it contains the third lowest number of acres of paleontologically sensitive (Class 3, 4/5, and 5) geologic units on acreage proposed for minerals exploration and development (see Table 4.83 in Section 4.3.9.4, Summary of Impacts). Compared to Alternative A, this alternative would have potentially more adverse impacts on the resource because more acreage with sensitive paleontological fossils would be open to minerals development.

4.3.9.3.3.3. Alternative C

The number of acres open to oil and gas leasing under both standard and special stipulations on BLM-administered lands within each RFD area under Alternative C and corresponding paleontological sensitivies of geologic units is provided in Table 4.77:

Table 4.77. Proposed Acreages per PFYC Classes Open to Oil and Gas Leasing Under Alternative C for Each of the RFD Areas

	Class 1	Class 2	Class 3	Class 4/5	Class 5
Blanding	19	75,907	36,770	164,025	120,300
Monument Upwarp	0	192,183	419,889	76,607	12,507
Paradox Fold and Fault	0	127,397	83,470	31,722	8,180
Total	**19**	**395,487**	**540,129**	**272,354**	**140,987**

Table 4.78 shows the oil and gas leasing stipulations applicable by RFD area for Alternative C.

Table 4.78. Oil and Gas Leasing Stipulations (acres) by RFD Area, Alternative C

RFD Area	Open with Standard Conditions	Open with Special Stipulations	Open with No Surface Occupancy	Closed to Oil and Gas Leasing
Blanding	254,706	142,314	8,213	16,012
Monument Upwarp	293,201	407,984	25,171	367,720
Paradox Fold and Fault	81,564	172,205	5,939	11,597

Alternative C has the fourth lowest potential for adverse impacts on scientifically significant paleontological resources because it contains the fourth lowest acreage of paleontologically sensitive (Class 3, 4/5, and 5) geologic units within areas proposed for minerals exploration and development (see Table 4.83 in Section 4.3.9.4, Summary of Impacts). Compared to Alternative A, this alternative would have potentially more adverse impacts because more acreage of sensitive resources would be open to minerals development.

4.3.9.3.3.4. Alternative D

The number of acres proposed as open to oil and gas leasing under both standard and special stipulations within the Monticello PA RFD areas under Alternative D and corresponding paleontological sensitivities of geologic units are provided in Table 4.79:

Table 4.79. Proposed Acreages per PFYC Classes Open to Oil and Gas Leasing Under Alternative D for Each of the RFD Areas

	Class 1	Class 2	Class 3	Class 4/5	Class 5
Blanding	19	75,865	37,334	163,974	120,299
Monument Upwarp	0	193,556	445,074	76,775	12,506
Paradox Fold and Fault	0	127,526	90,342	31,823	8,179
Total	**19**	**396,957**	**572,750**	**272,572**	**140,984**

Table 4.80 shows the oil and gas leasing stipulations applicable by RFD area for Alternative D.

Table 4.80. Oil and Gas Leasing Stipulations (acres) by RFD Area, Alternative D

RFD Area	Open with Standard Conditions	Open with Special Stipulations	Open with No Surface Occupancy	Closed to Oil and Gas Leasing
Blanding	303,258	118,675	8,936	15,506
Monument Upwarp	505,529	222,393	5,240	360,914
Paradox Fold and Fault	153,496	104,374	0	10,433

Alternative D would have the highest potential for adverse impacts on scientifically significant paleontological resources because it contains the largest amount of acreage of paleontologically sensitive (Class 3, 4/5, and 5) geologic units within acreage proposed for minerals exploration and development (see Table 4.83 in Section 4.3.9.4, Summary of Impacts). Compared to Alternative A, this alternative would have potentially more adverse impacts because more acreage of sensitive resources would be open to minerals development.

4.3.9.3.3.5. Alternative E

The number of acres open to oil and gas leasing under both standard and special stipulations within each RFD area under Alternative E and corresponding paleontological sensitivities of geologic units are provided in Table 4.81:

Table 4.81. Proposed Acreages per PFYC Classes Open to Oil and Gas Leasing Under Alternative E for Each of the RFD Areas

	Class 1	Class 2	Class 3	Class 4/5	Class 5
Blanding	19	56,076	30,255	156,724	119,658
Monument Upwarp	0	163,911	324,905	71,702	12,506
Paradox Fold and Fault	0	95,645	24,600	18,750	8,160
Total	**19**	**315,632**	**379,760**	**247,176**	**140,324**

Table 4.82 shows the oil and gas leasing stipulations applicable by RFD area for Alternative E.

Alternative E would have the lowest potential for adverse impacts on scientifically significant paleontological resources because it would manage the smallest acreage for minerals exploration and development in paleontologically sensitive areas/geologic units (Class 3, 4/5, and 5). Compared to Alternative A, this alternative would have potentially less adverse impacts because fewer acres of sensitive resources would be open to minerals activities and surface disturbances.

Table 4.82. Oil and Gas Leasing Stipulations (acres) by RFD Area, Alternative E

RFD Area	Open with Standard Conditions	Open with Special Stipulations	Open with No Surface Occupancy	Closed to Oil and Gas Leasing
Blanding	148,520	217,919	40,492	15,001
Monument Upwarp	170,523	433,456	35,826	454,270
Paradox Fold and Fault	24,359	172,444	46,770	24,732

4.3.9.3.4. Impacts of Non-WSA Lands With Wilderness Characteristics Decisions on Paleontological Resources

Management decisions related to non-WSA lands with wilderness characteristics decisions would have beneficial direct and indirect impacts on paleontological resources that occur within their boundaries. Non-WSA lands with wilderness characteristics would be managed to protect natural values; surface-disturbing activities would be prohibited. This decision would protect any paleontological resources that exist on non-WSA lands that are managed to protect their wilderness characteristics.

4.3.9.3.4.1. Alternatives A–D

No acres of non-WSA lands with wilderness characteristics would be managed to protect wilderness values. Therefore, no beneficial impact to paleontological resources would occur. The potentially adverse impacts to the resource would be the same as discussed under the other resources within this section.

4.3.9.3.4.2. Alternative E

Alternative E would manage 582,357 acres to protect non-WSA lands with wilderness characteristics. These lands would be managed as 1) closed to oil and gas leasing, 2) designated as VRM Class I (allowing a very low degree of surface impacts), 3) closed to OHV travel, and 4) ROWs would not be permitted. These restrictions would protect paleontological resources by precluding surface-disturbing activities.Compared to Alternative A this alternative would have more beneficial impacts on the resource because more area would be protected from surface and subsurface disturbances.

4.3.9.3.5. Impacts of Recreation Decisions on Paleontological Resources

4.3.9.3.5.1. Alternative A

Alternative A would generally have the least restrictions to recreational activities within the SRMAs and the ERMA. However, since site surveys and resource mitigation would be conducted prior to surface disturbance, the impacts from recreational actitivies on paleotological resources would likely be minor.

4.3.9.3.5.2. Alternative B

Alternative B would generally be the second most restrictive on recreational activities within the Monticello PA SRMAs and the ERMA. To the extent that increased recreation results in greater public access and may require the installation of surface-disturbing infrastructure such as trails, and buildings, adverse impacts on important paleontological resources may result. Thus, Alternative B has the second lowest potential for adverse impacts on paleontological resources (after Alternative E) related to recreation decisions. Compared to Alternative A, this alternative would be more beneficial to the resource because more restrictions would be placed on recreational activities and facility construction.

4.3.9.3.5.3. Alternative C

Alternative C generally provides the third highest level of restrictions on recreational activities within the SRMAs and the ERMA. To the extent that increased recreation results in greater public access and may require the installation of surface-disturbing infrastructure such as roads, trails, and buildings, adverse impacts on important paleontological resources may result. Thus, Alternative C has a lower potential for adverse impacts on paleontological resources related to recreation decisions than Alternatives A.

4.3.9.3.5.4. Alternative D

Alternative D would generally provide the fourth highest level of restrictions on recreational activities within the Monticello PA SRMAs and the ERMA. The impacts would be the same as those discussed under Alternative B and C, but to a potentially greater adverse degree, from fewer restrictions on recreational activities. Alternative D would a higher potential for adverse impacts on paleontological resources than Alternative A because of more restrictions on recreation-related surface disturbances and access than Alternative A.

4.3.9.3.5.5. Alternative E

The impacts on paleontological resources from recreation management decisions within the SRMAs, C-SRMAs, and the ERMA would be the same as discussed under Alternative B, except within lands with non-WSA wilderness characteristics, which would be managed with additional protective measures that would be beneficial to paleontological resources, as described above in Section 4.3.9.3.4. Approximately 165,831 acres of SRMAs would have inventoried wilderness characteristics, and would therefore be managed with prescriptions beneficial to paleontological resources. An additional 416,526 acres within the ERMA would also be managed under these beneficial prescriptions. Because of the large area managed to preclude surface disturbance and with reduced public access, Alternative E would be the most beneficial to paleontological resources. However, there would also be an adverse reduction of discovery and recovery of additional fossils and other resources due to reduced surface disturbance and access. Compared to Alternative A, this alternative would be more beneficial to the resource because of the increased level of protection within the non-WSA lands with wilderness characteristics.

4.3.9.3.6. Impacts of Special Designations Decisions on Paleontological Resources

4.3.9.3.6.1. Alternative A

Alternative A would generally be the least restrictive in terms of commercial and recreational access uses of lands designated as ACECs and eligible WSR segments. Under Alternative A, no acres of Class 1 geologic units, 96,932 acres of Class 2 units, 171,736 acres of Class 3 units, 141,790 acres of Class 4/5 units, and 93,985 acres of Class 5 units would lie within ACECs. Under Alternative A, 3,577 acres of ACECs would be open to minerals leasing under standard conditions, 122,335 acres would be open under controlled surface use and timing limitations, 95,246 acres would be open with no surface occupancy, and 292,289 acres would be closed to minerals leasing. Of all the alternatives, Alternative A would permit the greatest commercial and recreational access to ACECs and WSRs, and is associated with the highest amount of potential surface disturbance. Therefore, Alternative A has the greatest potential for adverse impacts on important paleontological resources.

4.3.9.3.6.2. Alternative B

Alternative B would generally be the second most restrictive in terms of commercial and recreational access and uses of lands proposed as ACECs and eligible WSR segments (only Alternative E is more restrictive). Under Alternative B, no acres of Class 1 geologic units, 43,954 acres of Class 2 units, 439,341 acres of Class 3 units, 21,793 acres of Class 4/5 units, and 14,804 acres of Class 5 units would be designated as ACECs. Under Alternative B, 44,884 acres of ACECs would be open to minerals leasing under standard conditions, 102,825 acres would be open under controlled surface use and timing limitations, 62,698 acres would be open with no surface occupancy, and 310,651 acres would be closed to minerals leasing. Compared to Alternative A, this alternative would be more beneficial to the resource because more restrictions would be placed on access to areas with sensitive paleontological resources.

4.3.9.3.6.3. Alternative C

Under Alternative C, no acres of Class 1 geologic units, 11,141 acres of Class 2 units, 34,302 acres of Class 3 units, 15,264 acres of Class 4/5 units, and 14,804 acres of Class 5 units would be designated as ACECs. Under Alternative C, 92,115 acres of ACECs would be open to minerals leasing under standard conditions, 101,572 acres would be open under controlled surface use and timing limitations, 35,822 acres would be open with no surface occupancy, and 291,605 acres would be closed to minerals leasing. Alternative C is less restrictive than Alternatives B and E, but more restrictive than Alternatives A and D. Therefore, Alternative C would be the third most limiting in terms of commercial and recreational access to ACECs and eligible WSR segments, and is associated with the second least degree of potential surface disturbance and resulting adverse impacts on important paleontological resources. Compared to Alternative A, this alternative would be more beneficial to the resource because more restrictions would be placed on access to areas with sensitive paleontological resources.

4.3.9.3.6.4. Alternative D

Under Alternative D, no new ACECs would be designated and no river segments would be managed as eligible for WSR status. Under this alternative, 152,809 acres of existing ACECs would be open to minerals leasing under standard conditions, 71,093 acres would be open under controlled surface use and timing limitations, 9,736 acres would be open with no surface occupancy, and 287,462 acres would be closed to minerals leasing. Alternative D would be the second least restrictive in terms of commercial and recreational access and uses of lands designated as ACECs and WSRs, and thus would potentially allow the second most degree of adverse impacts to paleontological resources of the proposed alternatives because it would allow the second highest level of commercial and recreational access to ACECs and river segments within the Monticello PA. This alternative would be more restrictive than Alternative A, so Alternative D would have potentially fewer adverse impacts to the resource than Alternative A.

4.3.9.3.6.5. Alternative E

The impacts of special designation decisions on the resource would be similar to those discussed under Alternative B because the proposed ACEC acreages and miles of eligible WSR segments would be the same. Under this alternative, the proposed ACECs would encompass approximately 109,206 acres of non-WSA lands with wilderness characteristics, and would therefore be managed with prescriptions that would prevent surface disturbances to paleontological resources. Because of the larger area managed to preclude surface disturbance and with reduced public access, Alternative E would be the most beneficial to paleontological resources. However, there would also be an adverse reduction of discovery and recovery of additional fossils and other resources due to reduced surface disturbance and access. Compared to Alternative A, this alternative would be more beneficial to the resource because greater protection would be afforded the resource.

4.3.9.3.7. Impacts of Travel Decisions on Paleontological Resources

4.3.9.3.7.1. Alternative A

Under Alternative A, 611,310 acres would be open to OHV use, 540,260 acres would be open to limited use with seasonal restrictions, 570,390 acres would be limited to existing roads and trails,

218,780 acres would be limited to designated roads and trails, and 276,430 acres would be closed to OHV use. Of the proposed alternatives, Alternative A would have the highest potential for adverse impacts on paleontological resources in sensitive areas/geologic units because it opens the highest acreage of the Monticello PA to travel and access to the general public, thus increasing the potential for unauthorized fossil collection and vandalism of scientifically significant paleontological resources in sensitive areas/geologic units. The construction of new roads, routes or trails in sensitive areas/geologic units under Alternative A would also adversely impact paleontological resources if surface disturbances were not mitigated to protect the resource.

4.3.9.3.7.2. Alternative B

Under Alternative B, no acres would be open to cross-country OHV travel, 1,359,417 acres would be limited to designated routes, and 423,698 acres would be closed to OHV use. Of the proposed alternatives, Alternative B would have the second lowest potential for adverse impacts on paleontological resources in sensitive areas/geologic units because it is the second most travel restrictive (after Alternative E). This would reduce the likelihood of unauthorized fossil collection and vandalism of scientifically significant paleontological resources resulting from increased access to public lands due to the construction of roads, routes, and trails. Compared to Alternative A, this alternative would be more beneficial to the resource because all cross-country OHV travel (and potential impacts to surface fossils from this form of travel) would be eliminated.

4.3.9.3.7.3. Alternative C

Under Alternative C, 2,311 acres would be open to cross-country OHV use, 1,362,142 acres would be limited to designated routes, approximately 3.8 miles would be limited to designated routes with seasonal restrictions, and 418,667 acres would be closed to OHV use. Alternative C would have the third lowest potential for adverse impacts on paleontological resources in sensitive areas/geologic units because it is the third-most travel restrictive. Alternatives B and E would have a lower potential for adverse impacts, and Alternatives A and D would have a higher potential for adverse impacts resulting from increased public access due to the construction of roads, routes, and trails.

4.3.9.3.7.4. Alternative D

Under Alternative D, 2,311 acres would be open to cross-country OHV use, 1,780,807 acres would be limited to designated routes, no acres would be limited to designated routes with seasonal restrictions, and zero acres would be closed to OHV use. Alternative D would have the second highest potential for adverse impacts on paleontological resources in sensitive areas/geologic units because it is the second least travel restrictive. Alternatives B, C, and E would have a lower potential for adverse impacts, and Alternative A would have a higher potential for adverse impacts resulting from increased public access due to the construction of roads, routes, and trails.

4.3.9.3.7.5. Alternative E

Under Alternative E, no acres would be open to cross-country OHV use, 812,683 acres would require travel along designated routes, and 970,435 acres would be closed to OHV use. Of all the

alternatives, Alternative E would have the lowest potential for adverse impacts on paleontological resources in sensitive areas/geologic units because it is the most travel restrictive. These restrictions would reeuce the likelihood of unauthorized fossil collection and vandalism of scientifically significant paleontological resources resulting from increased public access due to the construction of roads, routes, and trails. Compared to Alternative A, this alternative would be more beneficial to the resource because of the substantial reduction in travel opportunities, most notably on lands with non-WSA wilderness characteristics.

4.3.9.3.8. Impacts of Woodlands Decisions on Paleontological Resources

4.3.9.3.8.1. Alternative A

Under Alternative A, no restrictions would be placed on the harvesting and use of woodlands products outside WSAs and other designated exclusion areas (see Section 4.3.20.3.1.12, Impacts of Woodlands Decisions on Woodlands). Of the proposed alternatives, Alternative A would permit the most commercial and public access within the Monticello PA for woodlands product use (1,309,894 acres would be available for harvesting within the PA), including surface disturbance associated with the harvesting and access to harvesting areas. Under Alternative A, zero acres of Class 1 units, 194,783 acres of Class 2 units, 365,088 acres of Class 3 units, 186,942 acres of Class 4/5 units, and 110,193 acres of Class 5 units would be open to woodland harvest. Alternative A would have the highest potential for adverse impacts on paleontological resources in sensitive areas/geologic units because it would result in greater surface disturbance that could damage or destroy important or valuable fossils. It would also facilitate greater commercial and public access to more areas within the PA, thus increasing the potential for unauthorized fossil collecting and vandalism.

4.3.9.3.8.2. Alternative B

Alternative B would place a high level of seasonal restrictions, limits, and closures of areas to woodlands harvesting. Under Alternative B, a total of 730,074 acres of BLM lands would be available for commercial and recreational use of woodlands products with harvesting limits and restrictions specific to each of the proposed nine harvesting zones. This alternative would potentially affect no acres of Class 1 geologic units, 96,932 acres of Class 2 units, 171,736 acres of Class 3 units, 141,790 acres of Class 4/5 units, and 93,985 acres of Class 5 units on land open to woodland harvesting. Because it would allow the second least amount of surface disturbance associated with woodlands harvesting and the least amount of commercial and public access to potentially sensitive areas/geologic units of all alternatives, Alternative B would have the second lowest potential for adverse impacts on important paleontological resources. Compared to Alternative A, this alternative would be more beneficial to the resource because more restrictions would be placed on woodland harvesting that would provide greater protection to paleontological resources.

4.3.9.3.8.3. Alternative C

Of the proposed alternatives, Alternative C would manage woodland resources with the third highest level of seasonal restrictions, limits and closures of areas to harvesting. Under Alternative C, 841,938 acres would be available for commercial and private harvesting, with specified harvesting limits and restrictions for each of the nine woodland zones. This alternative

would manage woodland resources with zero acres of Class 1 geologic units, 98,838 acres of Class 2 units, 234,757 acres of Class 3 units, 153,168 acres of Class 4/5 units, and 106,909 acres of Class 5 units on land available for harvesting. Because it would allow the second lowest amount of surface disturbance associated with woodlands products harvesting and the second lowest amount of commercial and public access to potentially sensitive areas/geologic units, Alternative C would have a lower potential for adverse impacts on important paleontological resources than Alternatives A.

4.3.9.3.8.4. Alternative D

Of the proposed alternatives, Alternative D would have the fourth-highest level seasonal restrictions, limits, and closures of areas to woodland harvesting. The acreage available for woodlands harvesting would be the same as Alternative C. However, Alternative D places fewer restrictions on woodlands harvesting than Alternative C by removing the stipulation that OHV travel be restricted to 150 feet of designated routes in most woodland zones. As it would allow the second highest amount of surface disturbance associated with woodlands products harvesting and the second highest amount of commercial and public access to potentially sensitive areas/geologic units, Alternative D would have a higher potential for adverse impacts on important paleontological resources than Alternatives B, C, and E, but a lower potential for adverse impacts to paleontological resources than Alternative A.

4.3.9.3.8.5. Alternative E

The impacts of Alternative E woodland management decisions on paleontological resources would be the same as those discussed under Alternative B because the proposed management decisions would be the same, except that 1) approximately 6,197 acres within the proposed woodland harvesting zones would impose restrictions on surface disturbance to protect lands with non-WSA wilderness characteristics (these areas fall within the White Canyon, Harts Draw, and South Cottonwood zones), and 2) 548,477 acres would be available for harvesting within the PA. The impacts on paleontological resources would be beneficial in the long-term within these areas because the underlying resources would be protected. This alternative would have the lowest potential for adverse impacts on important paleontological resources because it would manage the smallest area for woodland harvesting. Compared to Alternative A, this alternative would be more beneficial to paleontological resources because over 40% less of the Monticello PA would be available for harvesting.

4.3.9.4. Summary of Impacts

In this section, the impacts of the five alternatives evaluated in this chapter are summarized. Table 4.83 summarizes the acreage available by PFYC class for mineral exploration and development.

Alternative E would have the lowest potential for adverse impacts on scientifically significant paleontological resources because it involves the least amount of acreage in paleontologically sensitive areas/geologic units (Class 3, 4/5, and 5). Alternative A would have the second lowest potential, followed by Alternative B. Alternative C would have the fourth lowest potential. Alternative D would have the highest potential for adverse impacts on scientifically significant paleontological resources.

Table 4.83. Summary of Proposed Acreages per PFYC Classes Available for Mineral Exploration and Development within the Monticello PA

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Class 1	19	19	19	19	19
Class 2	372,652	356,350	395,487	396,957	214,747
Class 3	457,233	483,016	540,129	572,750	168,343
Class 4/5	267,378	261,751	272,354	272,572	237,698
Class 5	140,948	140,903	140,987	140,984	138,121
Total Class 3-5	*865,559*	*885,670*	*953,470*	*986,306*	*544,162*
Total Acres	**1,238,230**	**1,242,039**	**1,348,976**	**1,383,282**	**758,928**

See Section 4.3.9, Paleontological Resources, for detailed PFYC class descriptions.

4.3.9.5. Mitigation Measures

As a nonrenewable resource, paleontological resources are unique. At the time fossils are discovered during paleontological surveys or mitigation-monitoring of ground-disturbing activities, many have already been subjected to a variety of destructive processes. These include predation; scavenging; disarticulation of skeletal remains; transport; primary weathering; diagenesis (physical changes in rock that occur over time, such as compaction, cementation, and mineral replacement); erosion; secondary weathering; and, if discovered during monitoring, additional damage that may have occurred during the ground-disturbing action that led to fossil discovery. Unlike other resources, it is difficult to develop measurable performance standards for paleontological mitigation because 1) fossils may have been damaged by natural processes prior to their discovery during a paleontological survey or during paleontological monitoring; 2) sub-surface fossils are often further damaged by construction activities that reveal their presence to paleontological monitors, and 3) there is no way to quantify how many fossils are preserved in the sedimentary deposits underlying a given site that were not exposed during the ground-disturbing action. Therefore, the absence of fossils would not indicate failure of the mitigation measures. Paleontological mitigation seeks to discover, via survey or monitoring, as many scientifically significant fossils as possible prior to their destruction during human-caused surface disturbance. Measurable performance standards in paleontology apply to survey- and mitigation-monitoring procedures, which ensure that fossil localities are documented thoroughly and accurately, and that fossils are collected according to professional paleontological standards.

4.3.9.6. Unavoidable Adverse Impacts

With project-specific assessments and, if appropriate, paleontological mitigation, lands and realty decisions, minerals decisions, recreation decisions, woodlands decisions, livestock grazing decisions, travel decisions, and special-designations decisions under all alternatives would reduce adverse impacts on paleontological resources resulting from surface-disturbing actions to below the level of significance. However, the increased possibility of public access to previously inaccessible lands due to new commercial and recreational activities and infrastructure will increase loss risk of paleontological resources due to unauthorized fossil collecting (poaching).

The loss of these resources represents an unavoidable adverse impact. The rate, extent, intensity, and duration of loss cannot be quantified at this time due to lack of data.

4.3.9.7. SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY IMPACTS

Short-term uses of BLM lands for activities involving surface disturbance or increased public access would have long-term impacts on non-renewable paleontological resources. In paleontologically sensitive areas/geologic units, surface-disturbing activities affecting paleontological resources would include mineral development (including oil and gas), trampling by livestock, and the construction of infrastructure such as roads, trails, reservoirs, buildings, and fire lines. Travel decisions involving maintenance, upgrade, and realignment of roads and OHV use would also have long-term adverse impacts on paleontological resources in sensitive areas/geologic units. Enhancing or restricting public access through Lands and Realty decisions and Special Designations would create the potential for long-term impacts, either adverse or beneficial. In most cases, implementation of paleontological mitigation measures would reduce adverse impacts to below the level of significance, and result in beneficial impacts by salvaging and preserving fossils that otherwise may have never been discovered. Such fossils would be permanently available in a public museum for scientific research, education, and public display. Accordingly, these long-term impacts would not result in a loss of the long-term productivity of this resource.

4.3.10. RECREATION

Recreational resources are defined for this impacts analysis as the natural elements (e.g., scenery, vegetation, geology, land forms, weather) within the environment that provide the physical basis for recreation. Recreational opportunities are defined as the combination of the natural elements and human-controlled conditions (e.g., roads and trails, developed sites, signs, route markers, facilities) that create the potential for recreation. Recreational expectations are those assumptions made by the recreation resource user (for example, an OHV rider, scenic driver, or hiker [see the description of user groups below]) that, having prepared for the desired recreational experience, he/she will have that desired experience (e.g., a challenging or scenic off-road trail, driving while enjoying high-quality scenery, or the natural sights and sounds of an undeveloped landscape along a hiking trail). Recreational user satisfaction can be defined as the mental state in which the resource user is able to successfully benefit from the available recreational opportunities and recognize that his/her recreational experiences meet or exceed those recreational expectations.

The following assumptions were made and considered in the analysis of impacts of the proposed RMP management decisions on recreational opportunities and experiences, and on recreation resources within the Monticello PA:

- The BLM assumed that resource users within the Monticello PA could be classified into specific user groups, each of which has its set of recreation expectations or objectives, recreational opportunities, and needs to achieve satisfying recreational experiences. We also assumed that, because each user group has its needs, opportunities, and expectations, each group also has specific recreational conditions and criteria that increase the likelihood of satisfying user experiences. The descriptions, expectations, and criteria of these groups were derived from Monticello FO resource specialist knowledge of visitor use of recreational resources and of what constitutes user group satisfaction, based on informal but long-term in-field interviews with visitors recreating throughout the PA. For the action alternatives

(Alternatives B, C, D, and E), the Monticello FO's benefits-based recreation management (BBM) goals and objectives (see Appendix E) for the proposed SRMAs were also used in analyzing the impacts of resource decisions on user groups and on the likelihood of users having satisfying recreational experiences in these areas. The recreation user groups and assumed conditions/criteria for satisfactory recreational user experiences are:

- **Scenic Drivers** – This would include users of passenger cars and recreational vehicles (RVs) driving for pleasure while enjoying scenic attractions.
  - This user group prefers paved access to scenic vistas, cultural sites, and interpretive stations with turnoffs and/or temporary parking.
  - High traffic volumes, crowded kiosk parking areas, impacts to visual resources from paved viewpoints, and crowded developed campsites would adversely affect this user group's recreational experience.
- **Motorized (off-highway)** – This group would include users of off-road motorcycles, all terrain vehicles (ATVs), and four wheel drive vehicles.
  - This group prefers a range of settings, from remote, natural-appearing environments with non-paved surfaces and few human disturbances through settings that include graded, dirt roads and challenging trails to settings that could include moderate evidence of human sights, sounds, and surface disturbances. A moderate concentration of users and the presence of human constructed structures are acceptable. Trails and facilities provided for group activities (including parking lots, trail information, trailheads, and toilet facilities) are generally beneficial for this group.
  - Overcrowding and overuse of trails, particularly by slower users (e.g., hikers or mountain bikers) and other OHV users, would have an adverse impact on their experiences. Moderate numbers of hikers, bikers, or equestrians are unlikely to adversely affect their recreational experiences.
- **Mountain bikers** – Mountain bike users prefer a relatively natural or naturally appearing environment, with natural surface trails ranging from beginner to advanced where evidence of human disturbances, restrictions, and controls are present but are subtle or do not dominate the environment. Recreation facilities would be optional and would blend with the natural environment. Recreation management would encourage user dispersal. Preferred facilities include semi-primitive camping with basic facilities (i.e., parking lots, trailheads, and toilet facilities).
  - Overcrowding, noise (particularly from motorized users), dust/exhaust, and poor trail etiquette from other users can have an adverse impact on this group's recreational experiences.
- **Non-mechanized** – This group would include hikers, backpackers, and equestrians.
  - This group prefers a natural appearing environment with little evidence of disturbance, few restrictions or visitor controls, no motorized users, and few mountain bikers. Trails, signs and active management that foster dispersal of users are the typical management decisions needed for this user group.
  - Adverse recreational experiences include those listed under mountain biking, but would also include the high speeds of mountain biking and motorized users. The speed and noise of motorized users is of particular concern to equestrian users.

- **River floating** – This group would include those recreating in non-motorized boats (predominantly in canoes, kayaks, and rafts).
  - The needs of this group are similar to those of the non-mechanized user group, with a natural appearing environment that shows little evidence of human disturbances within the river corridor. Other than boat ramps and restroom facilities at put-in and take-out locations and designated primitive campsites, facilities needs are few.
  - Overcrowding, noise, and impacts to visual resources seen from the San Juan and Colorado Rivers would detract from the user experience.
- **Specialized Recreation** – This group includes rock climbers, competitive motorized trail users, and Building-Antenna-Span-Earth (BASE) jumpers.
  - This diverse group prefers locations that provide the conditions for specialized recreation. Recreation BASE jumpers prefer high cliffs with favorable wind conditions and safe landing zones. Rock climbers prefer a range of challenging routes in sufficient numbers so that crowding and waiting is minimized. Competitive motorized trail users prefer challenging routes, often with enough distance and open area to allow for speed.
  - Overcrowding of a given area may detract from the user or group experience for either BASE jumpers or rock climbers. Conflicts with slower moving vehicles, people, or livestock would detract from the user experience for competitive motorized trail users.
  - While recognizing that some recreational resource users may not have expectations that include high scenic quality, recreational opportunities that are likely to provide satisfying experiences in general are related in some way to scenic quality and to visual resource management (VRM) because high quality scenery was assumed to be an important recreational expectation for all user groups. Thus, it was further assumed that those management decisions that protect visual resources/scenic quality or permit fewer surface disturbances (in areas designated as VRM Class I and II and managed under their resource objectives) would have more beneficial impacts to recreational experiences and opportunities than those management decisions that allow greater degrees of surface disturbance and less visual resource protection (those areas designated as VRM Class III and IV and managed under VRM Class III and Class IV objectives).

4.3.10.1. Impacts Common to All Alternatives

Management decisions common to all of the alternatives would include developing and/or improving campgrounds (e.g., Sand Island, Indian Creek, Comb Wash), improving developed cultural resource interpretive sites (i.e., Butler Wash Ruin, Mule Canyon Ruin, Three Kiva Pueblo), and improving the Kane Gulch Ranger Station. As discussed in Section 3.10.4.3, Resource Conflicts/Impacts, increasing recreational resource use and resource use conflicts are adversely impacting recreational resources and user experiences. Accommodating the increase in resource users through improvements to recreation facilities and sites would have long-term, direct, beneficial impacts for all user groups by potentially enhancing the recreational user experience.

A fundamental component of the recreational experience in the Monticello PA is scenic quality, so those management decisions that diminish or degrade scenic quality through the effects of smoke, haze, or other air pollutants would have potentially adverse short-term or long-term impacts on the recreational opportunities that include scenic quality as part of the experience. For all of the alternatives, air quality management decisions would comply with current interagency MOUs regarding smoke management. Fire management treatment (including prescribed burning) would be timed to minimize smoke impacts and mitigation would be applied in compliance with federal and state regulations to meet air quality standards and prevent deterioration of air quality within the Monticello PA airshed. All of these decisions would have long-term, direct, beneficial impacts on recreational opportunities for all recreation user groups that include scenic quality as a component of the recreational experience because smoke, haze, and other air pollutants produced within the Monticello PA would be mitigated or limited to levels that would not likely diminish or degrade scenic quality.

Management decisions common to all of the alternatives include managing the Old Spanish National Historic Trail to beneficially protect its recreational and interpretive resource values in the long-term, with the exception that under the action alternatives (i.e., B, C, D, and E) SRPs would be authorized only for re-enactments and heritage tours. This would also have long-term, beneficial impacts on the resource by managing the potential impacts from recreational resource users.

None of the alternatives propose specific areas or acreages for fire management. Fire management decision impacts on recreation resources and all recreation user groups would be beneficial in the long-term: management decisions common to all of the alternatives would use fuels treatments (e.g., prescribed fire) to restore ecosystems and to reduce hazards associated with fuel loading. Fire suppression would be a required consideration for all non-prescribed fires. The potential disturbances caused by these activities would be short-term, surface disturbance-related impacts on recreational activities and recreation resources that would include the closing of recreational facilities and the loss of recreational opportunities within burned areas for all user groups until recreation resources were rehabilitated or restored. Recreational scenic quality would be adversely impacted in the short-term in burned areas until vegetation would re-grow. The long-term, beneficial impacts on recreation resources and user experiences would be produced by the reduced risk or likelihood of wildland fires within treated areas (and the reduced risk of loss of remote and developed recreational areas and facilities from fire). The improvement of wildlife habitat (and enhancement of recreation opportunities for wildlife viewing and hunting in the long-term) for all user groups by improving vegetation communities through fire management would have long-term, beneficial impacts to recreation. It should be noted that fuels treatments to reduce the risk of wildland fire would be similar to those used to improve vegetation communities and improve or restore ecosystem health. See Section 4.3.17.2.7, Impacts of Paleontological Resources Decisions on Vegetation, for related impacts on recreation from vegetation treatments.

Under all of the alternatives, management decisions to identify and address hazardous materials within the Monticello PA that pose health or safety risks (e.g., AML sites, hazardous waste sites) would continue to pose potential short-term health and safety risks to all recreational users in those areas where hiking, OHV use, and target shooting are in close proximity to hazardous materials and AML sites. Once the health and safety concerns of AML sites, unauthorized waste dumps, and hazardous materials sites (e.g., lead contaminated shooting ranges) were addressed

and/or the areas were reclaimed, these areas would be considered as beneficially in compliance with federal and state regulations and/or as possible recreation areas. If managed as such they would then be an additional recreation resource and potentially provide beneficial, long term recreational opportunities to all user groups.

For impacts common to all alternatives, season-of-use changes in grazing allotments would beneficially affect wildlife by improving the functioning condition of grazed areas and also providing improved forage for wildlife, which would indirectly benefit long-term recreational opportunities for wildlife viewing and/or hunting for all user groups.

There are no specific paleontological management decisions that are applicable to each alternative. However, the collection of invertebrate and plant fossils on BLM-administered public lands for personal, non-commercial use is an approved recreational activity. The impacts of paleontological management decisions common to all alternatives on recreation resources would be negligible in the short-term and long-term because fossil collection is a recognized recreational activity, and current and proposed management decisions would not constrain, limit, or enhance this activity beyond those limits already mandated in BLM regulations.

Management decisions for SSS under all of the alternatives would have impacts on special recreation users and commercial recreation groups requiring SRPs. Commercial groups would be seasonally restricted from recreating within SSS habitat to protect these species during breeding seasons, which would have adverse impacts on motorized recreational opportunities for commercial users. Private, non-commercial motorized users would not be affected by these restrictions. Specialized recreation user groups (i.e., rock climbers) would be restricted from using climbing routes within areas where raptor species would be nesting, which would have adverse impacts on specialized recreation rock climbing opportunities during raptor nesting season.

Under all alternatives, travel decisions would prohibit vehicle access within the San Juan River SRMA along a river segment from Comb Wash downstream to Lime Creek, and below Mexican Hat Bridge. This would have long, term, adverse impacts on recreation-related travel because opportunities would not be available for motorized OHV recreation within this area. Under all alternatives, non-mechanized travel would not be restricted except to protect specific resource values, preserve public safety, and maintain identified recreational opportunities. All alternatives would identify routes and provide recreational opportunities for non-mechanized travel that are independent of motorized OHV and mountain biking routes. These management decisions would have long-term, beneficial impacts on non-mechanized recreational users because the recreational opportunities for this user group would be enhanced by relatively unrestricted access throughout the Monticello PA and by management decisions to spatially separate non-mechanized users from mountain biking and motorized OHV users. These decisions would increase the likelihood that non-mechanized users would have satisfying recreational experiences where the expectations include remoteness and a sense of solitude, an undeveloped, pristine natural environment, and natural sounds and sights.

Under all of the alternatives, the impacts of management decisions for woodlands would be adverse in the long-term on recreation user groups whose expectations include solitude and a sense of remoteness in an undisturbed landscape. Woodland harvesting would be allowed within some SRMAs and within the ERMA, and there would be adverse impacts on non-mechanized users from intrusive noise produced by chainsaws and by motorized OHVs used to access and

collect harvested wood. Adverse visual impacts on non-mechanized, mountain biking, scenic driver, specialized, and some motorized OHV groups would result from wood collecting OHV surface disturbances, trash and litter, and the remnants of cut stands of pinyon and juniper.

As the impacts for air quality, fire management, human health and safety, paleontology, SSS, and woodlands would have the same impacts on recreation under all alternatives; the impacts of these resource decisions on recreation will not be discussed further.

4.3.10.2. Impacts Common to All Action Alternatives

Management decisions common to all action alternatives (Alternatives B, C, D, and E) would:

- Close the proposed San Juan River SRMA to woodland products use except for on-site collection of campfire wood and permitted collection of wood by Native Americans for ceremonial purposes. This would have long-term, direct, beneficial impacts on recreation resources and recreational experiences by preserving scenic quality along the SRMA river corridor.
- Exclude backpackers from camping within one mile of Slickhorn Canyon and Grand Gulch along the San Juan River. This would have long-term, direct, beneficial impacts for river floating user groups by potentially reducing crowding by non-mechanized user groups along the river corridor. It was also have long-term, adverse impacts on non-mechanized groups by limiting recreational opportunities along the San Juan River corridor.
- Limit camping within the proposed Cedar Mesa CSRMA (under Grand Gulch Plateau Mesa-Top Camping) to 14 days within any period of 28 consecutive days. This would have long-term, beneficial impacts on recreation resources and experiences within the CSRMA by limiting the potential impacts from commercial and private non-mechanized users.
- Require that all garbage, refuse, and solid waste be packed out of the proposed Cedar Mesa CSRMA (under Grand Gulch Plateau [In-Canyon Permitted Overnight Camping]). This would have substantially beneficial, long-term preservation-related impacts on recreation resources within this portion of the CSRMA. The impacts to non-mechanized users would be negligible because packing out waste would not affect the recreational opportunities for experiencing solitude, cultural resources, and a natural environment.
- Prohibit camping within the Indian Creek riparian corridor (within the proposed Indian Creek SRMA), from Newspaper Rock to south of the Dugway Ranch, with camping outside of the riparian corridor limited to designated camping areas and campsites. As funding permits, the designated campground at Newspaper Rock would be removed and rehabilitated, with new campgrounds and parking areas constructed within the proposed SRMA. These management decisions would have long-term, beneficial impacts on recreation resources and on recreation user groups that frequent this area (i.e., scenic drivers, specialized, motorized, and non-motorized) because recreation resources would be protected and adequate recreation facilities would be constructed to enhance the recreational experience.
- Rock climbing routes in conflict with cultural sites would be closed. This management decision would have long-term, direct, adverse impacts on specialized recreational opportunities. However, it would have long-term, beneficial impacts on other user groups that consider scenic quality an important recreational experience.
- Woodland harvesting would be prohibited within the Indian Creek SRMA and the White Canyon SRMA, including on-site collection of firewood for campsites. This would have

long-term, beneficial impacts on recreation resources by preserving recreation-related scenic resources. The impacts on all user groups would be beneficial in the long-term because the recreational experience would be enhanced by the preservation of scenic quality.

- Under all of the action alternatives, BBM would be applied to the proposed SRMAs that include targeted outcomes to enhance personal, community, economic, and environmental goals (see Appendix E). This would have beneficial impacts on all user groups, as all SRMAs would be managed with prescriptions to increase the likelihood that resource users would have satisfying recreational experiences.

The general management decisions of the action alternatives would apply adaptive management to protect natural and cultural resources, and maintain and enhance recreational opportunities. Wildlife water sources would be protected and camping would be excluded within buffer zones around these areas to allow wildlife access to water. Dispersed camping within the Monticello PA would be assessed for its environmental impacts and would be seasonally closed, as conditions warrant, to protect recreational resources, and recreational OHV off-road retrieval of game would be prohibited. These management decisions would have long-term, resource protection-related, beneficial impacts on recreation resources, but there could be short-term, adverse impacts to specific recreation user groups to protect recreation resources (e.g., seasonal exclusion of non-mechanized users from dispersed camping areas to protect recreation resources, prohibitions on off-road game retrieval for motorized OHV users).

4.3.10.3. ALTERNATIVES IMPACTS

4.3.10.3.1. ALTERNATIVE A

Under Alternative A, cultural management decisions that impact recreation resources are either unspecified or unrestricted within the areas proposed for Comb Ridge CSMA, Tank Bench CSMA, and Beef Basin CSMA. Vehicle and OHV use decisions would designate these areas as either open, limited to designated routes, or closed. There are no management decisions that address dispersed camping, private and commercial group size limits, campfires, or pets. The impacts would be long-term, substantially adverse to recreation-related cultural resources and to all recreation user groups because, as discussed in Section 3.10.4 Recreation Issues and Concerns, the current trend toward increasing recreational use within the Monticello PA is creating recreational resource use conflicts between user groups, and the potential for OHV-caused degradation of recreation resources. A lack of specific management decisions to address these concerns would perpetuate current conditions, exacerbate recreation-related cultural resource degradation, and allow resource user conflicts to intensify, resulting in a diminishing likelihood of recreation resource users having satisfactory recreational experiences.

The proposed McLoyd Canyon-Moon House CSMA and the Grand Gulch National Historic District lie within WSAs, and are subject to the management decisions required to protect the resources within WSAs. Under this alternative, public access to the proposed McLoyd Canyon-Moon House CSMA would be restricted, which would reduce and adversely impact, in the long-term, the recreational opportunities for motorized, mountain biking, and non-mechanized recreational user groups.

The proposed Grand Gulch National Historic District would be closed to OHV use, managed to restrict recreational activities if cultural or scenic values were degraded or damaged, and

managed for primitive recreational opportunities. These management decisions would have long-term, beneficial impacts on those user groups that seek solitude and dispersed and remote recreational opportunities (non-mechanized or specialized users) because the area would be managed for opportunities that they prefer, but would highly limit the recreational opportunities for mechanized user groups (scenic driver, motorized OHV, and mountain bikers).

4.3.10.3.2. ALTERNATIVE B

Under Alternative B, cultural sites within the Monticello PA would be closed to recreational use if the Monticello FO determines that recreational activities pose a risk to cultural resources. Also, in order to protect and preserve the planning area's cultural resources, climbing aids and ropes would be prohibited to access cultural sites/ruins except in emergencies or administrative needs. These management decisions would have long-term, beneficial, preservation-related impacts on recreation resources because cultural sites are a component of the recreational opportunities within the PA, and protecting these recreational resources would preserve cultural/interpretive-recreational opportunities.

Under this alternative, specific management plans and CSMA status would be developed for culturally sensitive areas within Cedar Mesa that could potentially limit or restrict recreational activities to protect cultural resources. This would have long-term, preservation-related beneficial impacts on recreation resources that include a cultural resource component by reducing the likelihood of recreation-related degradation of or loss of recreational opportunities.

To protect cultural resources, this alternative would create CSMAs in areas known to have a high density of cultural resource sites, and/or sites that may be eligible for NRHP designation and provide recreational opportunities for cultural resource interpretation. These management areas would include Comb Ridge (38,012 acres), Tank Bench (2,646 acres), Beef Basin (20,302 acres), and McLoyd Canyon-Moon House (1,607 acres). Other special management areas for cultural resources would include the current Grand Gulch National Historic District and the Old Spanish National Historic Trail.

The proposed Comb Ridge CSMA would be managed for heritage tourism, OHV use would be limited to designated routes, the CSM would be closed to dispersed camping (with camping only in designated areas), hiking would be allowed only on designated trails, and a campground would be developed in Comb Wash. These management decisions would be beneficial to recreation resources in the long-term by reducing the likelihood of recreation-related degradation or loss of recreational opportunities within the CSMA, and by enhancing the recreational experience from improved and/or expanded recreational facilities. The impacts on user groups would be variable; there would be beneficial recreational opportunities for scenic drivers, motorized, and mountain biking recreational user groups from a designated route/trail system and recreational facilities. The recreational opportunities for non-mechanized dispersed hiking, equestrian, backpacking, and specialized recreation would be few to none because of the prohibitions on dispersed camping; the low likelihood of satisfying recreational experiences that include solitude, a sense of remoteness and an undeveloped, natural environment; and the high likelihood of user conflicts between mechanized and non-mechanized user groups. Also under this alternative, recreation users would be required to obtain a permit to access Butler Wash east of Comb Ridge. The permit process would require viewing a video on low-impact recreation at Sand Island or the Kane Gulch Ranger Station. The impacts on the recreational experience caused by the additional travel time to and from these sites to watch a video would be adverse for

all user groups (the Kane Gulch Station would be approximately 22 miles one-way from the entrance to Butler Wash), and there would be a potential for non-compliance with the permitting process for this area because of the perceived inconvenience, delay, and expense.

The proposed Tank Bench CSMA management decisions would have impacts on recreation resources similar to those discussed for Comb Ridge above, but to a lesser degree, as no recreational facilities are proposed for the area. The impacts on recreational user groups would be beneficial in the long-term for scenic drivers and non-motorized users (day hikers). The area is proposed as closed to OHV use, so the recreational opportunities for motorized OHV and mountain biking recreational users would be few to none, with long-term, adverse impacts to these user groups. Closing the area to OHV recreational opportunities would have long-term, beneficial impacts to non-mechanized and specialized user groups, as resource user conflicts with motorized users would be reduced and the opportunities for solitude, quiet, and a sense of remoteness would be enhanced.

The proposed Beef Basin CSMA management decisions would have impacts on recreation resources similar to those discussed for Comb Ridge, as OHV use and hiking would be confined to designated routes, primitive car camping would be at designated sites only, and car camping facilities would be developed for primitive camping. The impacts on recreational user groups would be similar to that discussed for Comb Ridge because this area would also be managed for heritage tourism, except that additional restrictions would be placed on specialized (rock climbing) user groups to protect rock art.

The proposed McLoyd Canyon-Moon House CSMA would have impacts on culturally related recreation resources similar to those discussed for Comb Ridge: camping would be restricted to designated areas, visitors would be prohibited from entering Moon House, and hiking would be allowed only on designated routes. These management decisions would have long-term, beneficial impacts on the recreation-related cultural resource by reducing the likelihood of recreation-related degradation or loss of recreational opportunities and experiences. There would be long-term, beneficial impacts on non-motorized users, and on non-mechanized users that do not require dispersed, remote recreational opportunities (i.e., day hikers) because the hiking and driving route restrictions would be more compatible with these user groups. The recreational opportunities for non-mechanized dispersed hiking and backpacking, motorized, scenic driver, and specialized recreation would be available within the CSMA, with long-term, beneficial impacts on these users; however, management decisions to protect the cultural site would impose restrictions or controls on site visitation, pets, campfires, and waste management that could adversely reduce the level of satisfying recreational experiences within the CSMA.

As the proposed Grand Gulch National Historic District lies within a WSA, the restrictions on surface disturbances and activities that could potentially affect the area would be greater in order to preserve the wilderness characteristics of the WSA, as required by the IMP. The historic district would be closed to OHV use and trails and camping areas designated as necessary to protect cultural resources. These management decisions would have long-term, beneficial impacts on culturally-related recreation resources similar to those discussed for the Comb Ridge CSMA above. The impacts on scenic drivers, motorized, mountain biking, and specialized mechanized user groups experiences would be long-term, substantial reductions in recreational opportunities. Activities associated with these activities would be prohibited within the WSA because of their potential for surface disturbances. Non-mechanized users would benefit in the

long-term because of the recreational opportunities for remote and dispersed camping, hiking, and backpacking.

Compared to Alternative A, this alternative would have more long-term, beneficial impacts on recreation resources within the proposed Comb Ridge, Tank Bench, Beef Basin, and McLoyd Canyon-Moon House CSMAs because the recreation-related cultural resources would be protected and maintained and opportunities for education and interpretation would be preserved. Compared to Alternative A, the impacts to the proposed Grand Gulch Historic District under this alternative would be negligible because the area would continue to receive protection under the area's WSA land status. Under this alternative, approximately 62,567 acres (including the current Grand Gulch Historic District) would be designated as CSMAs. Compared to Alternative A, which does not designate any CSMAs within the Monticello PA, this alternative would have greater long-term, beneficial impacts on recreation resources because these areas would be managed for protection of their cultural/recreational resources under CSMA management plans. Compared to Alternative A, this alternative would have fewer recreational opportunities for user groups because protection-related management decisions would limit or prohibit some activities that would be allowed under Alternative A. Thus, there would be more adverse, long-term impacts to recreational opportunities under Alternative B than under Alternative A. However, unlimited use by recreation user groups under Alternative A would potentially create resource use conflicts between user groups. Alternative B, by limiting or prohibiting recreational activities in specified areas, would beneficially reduce resource use conflicts. When compared to Alternative A, Alternative B would have more certain long-term, beneficial impacts because reducing resource use conflicts would increase the likelihood that scenic driver, motorized OHV, mountain biking, and non-mechanized user groups would have satisfying recreational experiences.

4.3.10.3.3. ALTERNATIVE C

The cultural resource management decisions on recreation resources would be similar to those discussed under Alternative B for the proposed Comb Ridge, Tank Bench, Beef Basin, and McLoyd Canyon-Moon House CSMAs because the management decisions would be similar. The proposed Grand Gulch Historic District would have impacts similar to those discussed under Alternative B, but to a greater degree because while the area would continue to be managed under WSA surface disturbance restrictions and because the cultural resource management decisions would be similar, recreational opportunities for pack animal camping would be permitted. The Old Spanish National Historic Trail would have impacts similar to those discussed under Alternative B. The comparison of Alternative A to Alternative C would be similar to those discussed above under Alternative B.

4.3.10.3.4. ALTERNATIVE D

Under this alternative, Comb Ridge, Tank Bench, and Beef Basin would not be managed as CSMAs. Comb Ridge would permit OHV use only on designated routes. Beef Basin would prohibit climbing aids except as hiking route aids, develop a commercial campground in the Ruin Park area, and close campsites that degrade or adversely impact cultural sites. Management decisions under this alternative would be beneficial to recreation resources in the long-term, similar to those discussed under Alternative B, by reducing the likelihood of recreation-related degradation or loss of recreational opportunities within these areas, but to a lesser degree because

these areas would be managed with fewer resource-protecting management decisions when compared to the other action alternatives. The impacts on user groups under this alternative would be more beneficial in the short-term because fewer restrictions and prohibitions on activities within these areas would create more opportunities for all user groups. In the long-term, the impacts on user groups would be adverse because of increased resource user conflicts and degraded recreational resources, as discussed under Alternative A. Compared to Alternative A, this alternative would have more beneficial impacts on recreation resources in the short term because of the proposed resource protection measures, but in the long-term the increased likelihood of recreation user conflicts and the likely degradation of recreation resources would have impacts similar to those discussed under Alternative A.

The impacts of management decisions under this alternative on the McLoyd Canyon-Moon House area would be similar to those discussed under Alternative C because the management decisions are similar. The impacts comparison of Alternative A to Alternative D would be similar to the discussion under Alternative C above.

The impacts of management decisions on the Grand Gulch National Historic District would be similar to those discussed under Alternative C because the management decisions are similar. Likewise, the alternatives impacts comparison between Alternative A and Alternative D would be similar to those discussed under Alternative C because the management decisions are similar.

4.3.10.3.5. ALTERNATIVE E

Under this alternative, management decisions for Beef Basin, Tank Bench, the Old Spanish National Historic Trail, and McLoyd Canyon-Moon House CSMAs and the Grand Gulch Historic District would be similar to those discussed under Alternative B because no areas with non-WSA wilderness characteristics lie within these cultural/recreational areas. Within the Comb Ridge CSMA, 18,514 acres (39% of the area proposed as a CSMA) would be managed to protect the wilderness values within the non-WSA wilderness characteristics areas. The impacts on recreation resources would be beneficial in the long-term, similar to the discussion under Alternative B. Within the protected non-WSA lands with wilderness areas of the CSMA, the beneficial impacts to culturally related recreation resources would be enhanced by the increased restrictions on surface disturbances imposed by VRM Class I management objectives. The impacts on resource user groups would be the same as discussed under Alternative B because the area's proposed recreational management decisions emphasizing heritage tourism would be the same. The impacts on recreation users from the permitting process for Butler Wash would be the same as discussed under Alternative B.

4.3.10.3.6. IMPACTS OF LANDS AND REALTY DECISIONS ON RECREATION

There are no specific lands and realty management decisions under the alternatives that are applicable to recreation. Management decisions common to all of the alternatives that would potentially impact recreation resources include those proposed to protect PA resources during commercial filming projects. Management decision stipulations that require protection of habitat, soils, and cultural resources and prohibit the use of explosives or pyrotechnics or the introduction of exotic species would have short-term and long-term, beneficial impacts to recreation by preserving recreation resources. Prohibitions on pyrotechnics and explosives would have short-term, beneficial impacts on opportunities for non-mechanized, river floating, specialized, and mountain biking user groups because the potential noise and light distractions caused by these

devices would not be a source of disturbance to those who seek recreational opportunities that can provide solitude and/or minimal artificial distractions. Protection of soils, water, air, vegetation, and wildlife during filming projects would have long-term, beneficial impacts on all recreational users because maintaining recreational resources would increase the likelihood that they would have satisfactory recreational experiences. Management decisions common to all action alternatives would establish avoidance and exclusion areas for proposed ROWs. These areas would include areas with wilderness characteristics, ACECs, WSAs, WSR segments, developed recreation sites, and special emphasis and hiking areas. The impacts on recreation would be similar to the above discussion: long-term, beneficial protection of resources from surface disturbances, which would benefit all user groups because opportunities would be maintained for satisfying recreational experiences.

4.3.10.3.7. Impacts of Livestock Grazing Decisions on Recreation

Under all of the alternatives, 137,440 acres would be unavailable for livestock grazing because of vegetation, wildlife, recreation, or other resource concerns. This would have long-term, beneficial impacts on all user groups, as high scenic quality and naturalness are generally common to all recreational user expectations. Cattle tend to disrupt the backcountry experience sought by hikers, mountain bikers, and backpackers because of the presence of manure along trails and at camp sites, the consumption of wildlife forage (that potentially reduces wildlife viewing opportunities), and surface disturbances that contribute to soil compaction and soil erosion and indirectly exacerbate the opportunities for exotic species establishment and spread. Proper grazing management through the livestock grazing standards and guidelines would reduce these impacts to all recreation user groups.

4.3.10.3.7.1. Alternative A

Alternative A would make 20,361 acres (in addition to the 137,440 acres discussed above) unavailable to livestock grazing within Mule, Arch, Fish, Owl, and Road canyons, as well as Comb Wash side canyons. The impacts on recreation resources and resource user groups in these areas would be beneficial in the long-term, for reasons as discussed above.

4.3.10.3.7.2. Alternative B

This alternative would make 29,790 acres unavailable for livestock grazing. Alternative B would also develop additional seasonal use restrictions and forage utilization limits on grazing in riparian areas found to be Functioning At Risk, potentially closing land available for livestock grazing. These management decisions would have long-term, beneficial impacts on recreation resources similar to those discussed under Alternative A. Compared to Alternative A, 9,429 more acres would be unavailable for grazing under this alternative (a 46% increase in areas unavailable to livestock), which would have beneficial, long-term impacts on recreation resources and on recreational opportunities for resource users, as discussed under Alternative A.

4.3.10.3.7.3. Alternative C

Alternative C would have impacts on recreation resources and users similar to those discussed under Alternative B because the proposed management decisions would be similar (except for additional areas unavailable for grazing in south Mule Canyon). Compared to Alternative A, this

alternative would have impacts similar to those discussed under Alternative B for the same reasons.

4.3.10.3.7.4. Alternative D

Alternative D would make approximately 20,569 acres within the Monticello PA unavailable for livestock grazing, with impacts on recreation resources similar to those discussed under Alternative B because the proposed management decisions would be similar. Compared to Alternative A, this alternative would have similar impacts on recreation resources, but to a slightly more beneficial degree, because the number of acres unavailable for livestock grazing would be slightly higher (a 1% increase in exclusions compared to Alternative A).

4.3.10.3.7.5. Alternative E

The impacts of this alternative on recreation would be the same as discussed under Alternative B because the proposed grazing decisions are the same.

4.3.10.3.8. Impacts of Minerals Decisions on Recreation

4.3.10.3.8.1. Alternative A

Under Alternative A, approximately 1,387,933 acres would be available under standard stipulations and timing and controlled surface use leasing stipulations for oil and natural gas exploration and development (78% of the planning area). It should be noted, however, that the RFD predictions for minerals development are that an average total of 76 natural gas or oil wells would be drilled, with a total surface disturbance of approximately 730 acres, over the lifetime of the proposed RMP. Under this alternative, the predicted surface disturbances on BLM-administered lands within the planning area from geophysical activities over the lifetime of the proposed RMP would be 886 acres. All of the geophysical surface disturbances would be reclaimed within 10 years. Thus, the expected potential disturbance from oil and natural gas exploration and development and related disturbances would be 1,616 acres or approximately 0.11% of the area available for development.

The impacts on recreation resources from the drilling of approximately 76 oil or gas wells within the Monticello PA and geophysical activities would be minor because of the very small area of potential surface-disturbance impacts and the likelihood that this relatively small area would potentially impact visual/scenic quality to a minor degree. Additional long-term, beneficial motorized OHV recreational opportunities may be created along oil and gas well access roads if these roads were open for public access, but the impacts on these recreational opportunities would be minor, as the access roads would be short spur roads from existing roads within the planning area and the access roads would be reclaimed at the end of the well lifecycle. The impacts on recreational resource user groups that expect to experience naturalness, isolation, and high levels of scenic quality (non-mechanized, mountain biking, specialized, and river floating users) would be negligible to minor in the long-term because all wells located within high-scenic quality viewsheds (VRM Class I and Class II) would be required to meet visual resources objectives so that the visual intrusions are either hidden from or not noticeable to the casual viewer.

4.3.10.3.8.2. Alternative B

Under Alternative B, approximately 1,241,909 acres would be available under standard stipulations and timing and controlled surface use leasing stipulations for oil and natural gas exploration and development. The potential impacts of mineral exploration and development on recreation resources and resource user groups would be the same as discussed above under Alternative A because the RFD forecast for minerals development within the planning area would be similar. Under this alternative, the RFD predicts that an average of 66 wells would be drilled during the life of the proposed RMP, causing surface disturbances on approximately 636 acres. The predicted surface disturbances within the planning area from geophysical activities over the lifetime of the proposed RMP would be 794 acres. The expected total disturbance under this alternative would be approximately 1,430 acres, with total reclamation of geophysical disturbances within 10 years of the activity. Compared to Alternative A, the expected potential disturbance from oil and natural gas exploration and development and geophysical activities would be the same (approximately 0.11% of the area available for minerals development). The impacts to recreation resources and users would be the same as discussed under Alternative A.

4.3.10.3.8.3. Alternative C

Under this alternative, approximately 1,348,973 acres would be available under standard stipulations and timing and controlled surface use leasing stipulations for oil and natural gas. The potential impacts on recreation resources and recreation users would be similar to those discussed above under Alternative A because the RFD predicts that an average of 74 wells would be drilled during the life of the proposed RMP, with total surface disturbances of approximately 710 acres, and approximately 903 acres of surface disturbances from geophysical activities, totaling 1,613 acres (or 0.12% of the area available for minerals development). The expected potential disturbance from oil and natural gas exploration and development would be similar to Alternative A.

4.3.10.3.8.4. Alternative D

Under Alternative D, approximately 1,383,283 acres would be available under standard stipulations and timing and controlled surface use leasing stipulations for oil and natural gas. The expected potential disturbance from oil and natural gas exploration and development and geophysical activities would be similar to those discussed under Alternative A because the RFD predictions would be similar: an average of 75 wells drilled during the life of the proposed RMP, with approximately 721 total acres of surface disturbances and 924 acres of geophysical-related surface disturbances, totaling 1,645 acres (or 0.12% of the area available for minerals development under this alternative). The impacts to recreation resources and user groups would be the same as discussed under Alternative A.

4.3.10.3.8.5. Alternative E

Under this alternative, approximately 582,360 acres of lands with non-WSA wilderness characteristics would be closed to minerals leasing and locatable and saleable minerals disposal. This would reduce the area of potential surface disturbances from oil and gas development on lands leased under standard and timing and controlled surface use stipulations to 758,930 acres (a reduction of approximately 45% compared to Alternative A). The RFD prediction for oil, gas, and geophysical activities under this alternative would be a total of 54 wells drilled and 380

miles of geophysical exploration, with a total surface disturbance of 1,109 acres. The adverse impacts on recreation from RFD-predicted activities would be similar to those discussed under Alternative A, but to a lesser degree, because more area would be protected from potential surface disturbances within those lands with non-WSA wilderness characteristics.

4.3.10.3.9. Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Recreation

Areas with non-WSA wilderness characteristics would only be managed under Alternative E, with a total of 165,831 acres of non-WSA areas with wilderness characteristics that lie within Alternative E-proposed SRMAs and CSRMAs. Recreation resources within the proposed SRMAs and CSRMAs that contain these areas would receive increased beneficial protection from surface disturbances through management decisions to preserve the wilderness values within the non-WSA wilderness areas. These protective decisions would include closing the areas to OHV travel, management under VRM Class I objectives to preserve high scenic quality, closure to firewood gathering, and closure to mineral leasing and mineral materials disposal.

The impacts on primitive recreation users would be beneficial because naturalness, solitude, and outstanding opportunities for primitive recreation would be preserved and enhanced from closure/restrictions on surface disturbing activities and other uses on 582,360 acres in non-WSA lands with wilderness characteristics.

There could be adverse impacts to some specialized user groups because no competitive, motorized, or mountain biking events would be permitted in non-WSA lands with wilderness characteristics. Specialized recreational activities (e.g., rock climbing or BASE jumping) that would potentially degrade wilderness values could be restricted or prohibited. Approximately 416,357 acres of wilderness characteristics areas would be protected within the ERMA through the same decisions and with the same impacts on recreation resources and user groups as discussed above. Compared to Alternative A, this alternative would be more beneficial to recreation resources and users because the non-WSA wilderness characteristics areas would be preserved in a pristine, undeveloped state, retaining recreational resources for more opportunities in the long-term for most user groups than under Alternative A.

4.3.10.3.10. Impacts of Recreation Decisions on Recreation

General analysis assumptions on the impacts to recreation user groups are discussed above in Section 4.3.10. Additionally, it is assumed for analysis purposes that in order to reduce resource use conflicts and to preserve recreation resources, management decision restrictions or limitations on private and commercial recreational opportunities would have both beneficial as well as adverse impacts on recreation user groups. Restrictions on resource use would have long-term beneficial impacts on those recreational user groups that seek experiences associated with a natural, undeveloped, or pristine environment; remoteness; and solitude (in general, river floating, non-mechanized, and mountain biking groups) because restrictions would reduce the likelihood of crowding and resource use conflicts and increase the perception of solitude and remoteness, thus increasing the likelihood of satisfying recreational experiences for these groups. Related is the assumption that resource restrictions on commercial permits and commercial group sizes would create more long-term, beneficial recreational opportunities for private, non-commercial users for the same reasons as discussed above: less crowding within a river corridor or on a biking or hiking route would increase the perception of solitude and remoteness, which

would increase the likelihood of a satisfying experience for users who seek these recreational qualities.

It is assumed that the proposed restrictions on resource use would also cause short-term, adverse access-related impacts, as users would be denied the opportunity to recreate in a given area, as well as create competition for day use and camping permits for private and commercial uses. These potential reductions in commercial use would reduce recreational opportunities for those users who would rely on a commercial outfitter or a permitted activity for their recreational experiences.

Analysis assumptions for recreation-related waste management and the use of fire pans include the following: By minimizing the amount of waste found around popular recreational areas, it is assumed that the short-term inconvenience of removing or burying waste would be outweighed by the long-term beneficial impacts to the recreational experience that include preservation of visual resources, human health benefits, and maintenance of unspoiled natural and cultural resources. The use of fire pans would have short-term and long-term beneficial impacts on recreation resource and opportunities because they would reduce the risk of recreation-caused wildland fire that could destroy recreation resources. Short-term beneficial impacts would include the safety of those recreating within an area, while the long-term beneficial impacts would include the preservation of the natural and cultural resources within the Monticello PA. A summary of the data contained within the proposed recreation management decisions (and used in the analysis), by alternative, is shown below in Tables 4.84 and 4.85 and in Maps 30–33.

4.3.10.3.10.1. San Juan River SRMA

Alternative A

Under this alternative, recreation management decisions would continue under current conditions, and the 15,100-acre San Juan River SRMA would continue to be impacted by conditions and trends as discussed in Section 3.10.2.5.1.

Current management decisions for river use include restrictions on motorized use, launch limits of 40,000 user days per year, limitations on group size, and a 50% commercial use limitation of total river use. Launch limits and commercial and group limits currently allow recreational opportunities for a large number of users. However, based on the recreational expectations of the river floating user group discussed in Section 4.3.10, the permitted use of motorized boating and the large number of permitted river floaters would reduce the likelihood of a satisfactory recreational experience for those users expecting to experience isolation, a pristine and non-motorized environment, and remoteness. The large percentage of commercial use would also limit, in the short-term, the river recreational opportunities of private users because half the allocation for permitted river use would only be available to commercial users.

Table 4.84. Summary of Recreation Management Decision Analysis Data for Special Recreation Management Areas (SRMAs)

Criteria Type	Decision Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
San Juan River SRMA					
	Launch limits (user days/year)	40,000	30,000	40,000	45,000
	Trip size (group #)	25	20	25	35
	Commercial (% of total trips per day)	50%	30%	40%	50%
Cedar Mesa Cultural SRMA					
Mesa Top Day Use	Trip size (group #) private and commercial	No Limit	10	12	12
Mesa Top Camping	Trip size (group #) private and commercial	No Limit	12	24	No Limit
	Dispersed vs. designated camping	Dispersed	Designated only	Designated 12–24 users	Designated 24+ users
In Canyon Day Use, Private	People per day per trailhead	No Limit	10	12	12
	Trip size (group #)	12	10	12	12
In Canyon Day Use, Commercial	Trip size (group #) per day	12	10	12	12
	Groups per day per trailhead	No Limit	1	1	2
In Canyon Permitted Overnight Camping	Trip size (group #)	12	10	12	12
	Dispersed vs. designated camping	Designated only	Designated up to 4–10 users	Designated 8–12 users	Designated 8–12 users
Private Use	Trip size (group #) per day	12	6	8	12
Commercial Use	Trip size (group #) per day	12	10	12	12
	Groups per day per trailhead	1	1	1	1
Trailhead Allocations, Overnight Visitors Per Day:	Kane	26	16	20	24
	Bullet	22	16	20	24
	Government	12	16	20	24
	Collins	22	16	20	24
	Fish/Owl	26	16	20	24
	Road Canyon	22	16	20	24
	Lime Creek	22	16	20	24

Table 4.84. Summary of Recreation Management Decision Analysis Data for Special Recreation Management Areas (SRMAs)

Criteria Type	Decision Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
	Mule Canyons	22	16	20	24
	Slickhorn Canyons	22	16	20	24
	Dark Canyon SRMA				
	Trip size (group #) private	No limit	10	15	15
	Commercial	No limit	12	15	15
	Commercial trips per week	No limit	1	3	7
	Total private users per day	No limit	15	20	No limit

Table 4.85. Summary of Recreation Management Decision Analysis Data, Special Recreation Permits (SRPs)

Decision Type	Alternative A	Alternative B	Alternative C	Alternative D
Private Use				
Day use organized event in ERMAs	N/A	25 people	50 people	75 people
Overnight group or event in ERMA	N/A	15 people	25 people	50 people
Group OHVs on designated routes	N/A	15 OHVs	25 OHVs	No limit
Mountain biking on designated routes	N/A	15	25	No limit
Group of riding/pack animals	N/A	10 animals	15 animals	20 animals
Car camping	N/A	10 vehicles, 50 people +	15 vehicles, 50 people +	20 vehicles, 50 people +
Commercial Use				
Groups size limits for commercial motorized events	Any commercial use	2 groups of 12 vehicles/ day	Same as Alternative B	2 groups of 25 vehicles/day
Balloon festivals limits	Any commercial use	35 balloons	Same as Alternative B	Same as Alternative B
Special OHV event limits	Any commercial use	350 total vehicles	Same as Alternative B	Same as Alternative B
Commercial hiking in Comb and Butler Wash	Any commercial use	10 individuals	Same as Alternative B	N/A

Under this alternative, vehicle access and camping would be restricted between Comb Wash and Lime Creek, and below Mexican Hat Bridge, which would have long-term, adverse impacts on non-river floating users by maintaining restrictions on recreation-related travel opportunities for access to and recreation within the SRMA. Other proposed management decisions would minimize resource use conflicts by designating certain reserved campsites along the river corridor, with timing stipulations that permit only one-night stays at each campsite. This would have beneficial, short-term impacts on the river recreational experience by dispersing users along the river corridor, which would reduce the perception of crowding and the impacts of human noise. Under this alternative, the permitted levels of visitation and the lack of resource protection management decisions would continue to have potentially long-term impacts to recreation resources because, as discussed in Section 3.10.2.5.1, intense river use and associated human-caused surface disturbances along the river corridor would continue to disturb riparian vegetation, create conditions for the spread of invasive species, impact special status species habitat, and degrade cultural resources.

Alternative B

Alternative B would manage the San Juan River as a 10,203-acre SRMA for the purposes of providing opportunities to engage in backcountry private and commercial river running, backcountry hiking and camping, horseback riding, and cultural site visitation. This alternative would designate and manage motorized boating within the San Juan River corridor for emergency use only. Riparian resources would be protected and launch limits would be set at 30,000 user days per year to improve the river running experience, with trip sizes limited to 20 people. Under this alternative, commercial users would also be restricted to 30% of the total river use. The impacts of these management decisions on river floating users would be beneficial in the long-term because the river floating experience would potentially be enhanced by creating conditions that reduce river use crowding and motorized noise and increase the sense of remoteness, solitude, and a pristine, natural environment. The opportunities for private users of the river would be beneficially increased in the long-term, while commercial river user recreational opportunities would be proportionally reduced. The proposed reductions in commercial river permits would also create increased competition among outfitters and those who would rely on a commercial outfitter for their recreational river opportunities within the SRMA because the opportunities for a commercially based river experience would be limited by the available permits. Under this alternative, vehicle camping restrictions would be limited to areas upstream of Comb Wash, and the bench above Sand Island would be closed to vehicle camping, and all areas within one-half mile of designated campsites would exclude vehicle camping. This would have long-term, beneficial impacts on river floating users by increasing the recreational opportunities for solitude and a sense of remoteness, but would limit the river recreational opportunities for all other user groups.

The land on the south bank of the San Juan River is owned by the Navajo Nation and camping is currently not permitted. Under this alternative, an MOU allowing camping on the south bank would be negotiated between the BLM, the NPS, and the Navajo Nation. If an MOU were agreed to, this management decision would potentially have long-term beneficial impacts on recreational opportunities for backcountry-river camping because the opportunities would be increased. The reduction in permits would have long-term, beneficial impacts on river floating recreational user groups because these conditions would increase the likelihood for a satisfactory

river floating experience in which a sense of isolation and a primitive backcountry experience is an important recreational expectation.

Under this alternative, vehicle camping would be allowed upstream of Comb Wash only, with exceptions along Lime Creek Road, the Mexican Hat Rock area, and the Mexican Hat Boat Ramp. Further restrictions under Alternative B would include closing the bench above Sand Island Recreation Area to vehicle camping and closing camping within one-half mile of designated campsites. Lime Creek Campground would be reserved for river runners only. Limiting the availability of camp sites and access along the river would potentially create a higher density of camping sites and a higher number of user impacts in areas where camping is allowed. This would potentially impact non-mechanized, specialized, and mountain biking users by degrading the overall recreational experience because the opportunities for isolation and a sense of remoteness would be marginally reduced. However, this would be offset somewhat by the designation of the Lime Creek campground (with designation contingent on project funding), which would decrease competition for campsites among river runners themselves, as well as between river runners and other recreationists. Livestock grazing restrictions and prohibitions on woodland harvesting under this alternative would have long-term, beneficial impacts on riparian resources and on the recreation resource components that lie along and within the riparian corridor, including wildlife habitat, vegetation, and scenic quality.

When compared to Alternative A, this alternative would reduce the number of annual launch limits from the current 40,000 under Alternative A to 30,000 user days per year. This 25% reduction in permitted use would increase the likelihood of satisfactory river recreational experiences where the expectation includes a sense of remoteness and solitude, and would reduce potential user conflicts and impacts on the resource by allowing river users to be more widely dispersed along the river corridor. Compared to Alternative A, Alternative B would have potentially greater long-term beneficial impacts on river floating users because it reduces the number of annual river permits, which would create more of an experience of solitude and a sense of isolation for those floating the river. However, this alternative would have more short-term, access-related recreational opportunity impacts on those potential river users who were unable to obtain permits to float the river. Compared to Alternative A, this alternative would have more beneficial preservation-related impacts on riparian resources. The long-term outcome of increasing the likelihood for satisfying private and commercial river running, backcountry, and cultural visitation recreational experiences within the proposed SRMA would include an enhanced appreciation for the area's cultural heritage, mental health maintenance from experiencing a quiet and natural environment, an improved sense of well-being from physical exercise, personal growth and development, an enhanced appreciation of the natural environment, tourist revenue from permits, and stimulation and a sense of achievement from river running challenges and risks.

Compared to Alternative A, Alternative B would reduce the size of the San Juan River SRMA to 10,203 acres (a 30% reduction in area compared to the 15,000 acres under Alternative A); however management decisions under Alternative B would seek to purchase private property and/or land development rights along the river to expand recreational areas within the SRMA boundary. This would have beneficial impacts on river recreation, if land purchases or development rights were acquired.

Alternative C

General management decisions under Alternative C would be the same as discussed under Alternative B, with similar impacts on recreation resources and resource users.

Management decisions under this alternative would allow motorized boating on the river, with impacts as discussed under Alternative A. An MOU with the Navajo Nation and the NPS would be sought under this alternative, and proposed designated camping and camping restrictions along the river corridor would have impacts as discussed under Alternative B. Commercial river use would be allowed up to 40% of the total river use, with impacts to recreational river users similar to those discussed under Alternative B. Launch limits of 40,000 user days per year would have impacts to recreation similar to those discussed under Alternative A because the management decisions are similar. The vehicle camping restrictions under this alternative would be the same as Alternative B, with similar impacts to recreation user groups. The impacts of grazing restrictions and woodland harvesting prohibition under this alternative would be the same as discussed under Alternative B because the management decisions are the same.

Compared to Alternative A, this alternative would manage the SRMA as 9,859 acres (a 33% reduction in size), with more potentially adverse impacts to recreational resources under Alternative C because the area managed for recreational resource protection would be reduced. Restrictions on grazing and woodland harvesting would have more beneficial impacts on recreation than Alternative A because recreation resources would receive more protection, and more designated campsites (assuming a successful, mutually beneficial MOU with the Navajo Nation and the NPS) would have more beneficial impacts on recreation user groups than under Alternative A. Under this alternative, the SRMA would be managed to maintain opportunities for remoteness and isolation within the bounds imposed by the permit and patrol system, which would be more beneficial to river users than Alternative A because Alternative A would not address these recreation qualities. Alternative C would have similar motorized boating and launch limit impacts as Alternative A.

Alternative D

General management decisions would be the same as discussed under Alternative B, with similar impacts on recreation resources and resource users.

Specific management decisions under this alternative would establish launch limits at 45,000 user days per year, motorized boating would be allowed, trip sizes would be limited to 35 individuals per trip, and commercial/private permit allocations would be evenly split. The impacts of these management decisions on recreational river users would be similar to those discussed under Alternative A. Management decisions to increase the number of designated campsites through an MOU with the Navajo Nation and the NPS with the purpose of reducing resource user conflicts along the river would have impacts similar to those discussed under Alternative B. Under this alternative, vehicle camping restrictions would be limited to the Sand Island area and all areas within one-half mile of designated campsites. This would have long-term, beneficial impacts on non-river floating recreation users by increasing the recreational opportunities for access to and recreation within the SRMA for scenic drivers, motorized, mountain biking, non-mechanized, and specialized recreation resource users.

Compared to Alternative A, the boundary of the SRMA under Alternative D would be reduced to 6,365 acres (a 58% reduction), thereby reducing the number of acres managed specifically for

recreational opportunities and SRMA recreation resource protection. However, while the SRMA boundary would be reduced when compared to Alternative A, those areas remaining within the proposed SRMA would receive greater resource protection than under Alternative A because more management decisions would be proposed to beneficially reduce resource use conflicts, protect recreation resources, and apply adaptive management to the SRMA for the protection of recreational resources and maintain and/or enhance recreational opportunities than would occur under Alternative A.

Alternative E

The impacts on recreation within the San Juan River SRMA would be the same as discussed under Alternative B for a portion of the SRMA (area outside the non-WSA wilderness characteristics lands).

Approximately 4,124 acres (40% of the proposed San Juan River SRMA) of non-WSA lands with wilderness characteristics lie within the San Juan River SRMA. Under Alternative E, the impacts to recreation for this SRMA would be that recreation resources would receive increased protection from surface disturbances through management decisions to preserve the wilderness values within the non-WSA wilderness characteristics areas. These protective decisions would include closing the areas to OHV travel, management under VRM Class I objectives to preserve high scenic quality, closure to firewood gathering, and closure to mineral leasing and mineral materials disposal.

The impacts on primitive recreation users would be beneficial because naturalness, solitude, and outstanding opportunities for primitive recreation would be preserved and enhanced from closure/restrictions on surface disturbing activities and other uses on 4,124 acres in non-WSA lands with wilderness characteristics.

4.3.10.3.10.2. Cedar Mesa Cultural SRMA

Alternative A

Under Alternative A the area proposed as Cedar Mesa Cultural SRMA (CSRMA) would continue to be managed as part of the current 385,000-acre Grand Gulch Plateau SRMA. Camping would be allowed only at designated campsites, campfires would be prohibited, pets would be under human control at all times and excluded from sensitive sites, stock animal use would require a permit, and specified areas within the SRMA would be open or closed to stock animal use and subject to length of stay restrictions. Group sizes would be limited and stock animal herding would be prohibited and excluded from water sources and other sensitive sites. Stock use would be limited to existing trails. All of these management decisions would have long-term, beneficial impacts within the SRMA because these decisions would maintain the cultural and natural resource recreational opportunities within the SRMA by reducing or minimizing recreation user group impacts. Recreation user groups most likely to benefit from these management decisions would be those seeking primitive, dispersed, and remote recreational opportunities (non-mechanized hikers, equestrian, and stock animal users).

Alternatives B

The management decisions under Alternative B would establish the Grand Gulch SRMA as the 375,743-acre Cedar Mesa Cultural Special Recreation Management Area (CSRMA). The SRMA would be managed to provide cultural appreciation/interpretive related recreation, and

backcountry to front country recreational opportunities. These opportunities would include rock art viewing, hiking, horseback riding, OHV riding, and camping. Pet and stock animal restrictions would be the same as discussed under Alternative A with additional stipulations that would exclude these animals from canyons requiring permits, which would have additional beneficial, preservation-related impacts on recreational resources. Woodland harvesting and collecting prohibitions and potential vegetation treatments and wildlife improvements within the proposed CSRMA would also have long-term, beneficial protection-related impacts on recreation resources. There would be short-term impacts on vegetation and scenic quality from surface disturbances caused by vegetation and range treatments, as discussed under Fire Management. Under this alternative, dispersed camping would be allowed except in cultural at-risk areas, but permits would be required for a limited number of overnight camping and day hiking groups to preserve sensitive cultural resources. This would have long-term, beneficial impacts on recreation resource users by expanding the opportunities for remote, dispersed, backcountry recreational experiences by non-mechanized, mountain biking, and motorized user groups while still preserving sensitive recreational resources. The potential outcome of these recreational opportunities would be a greater likelihood for an appreciation and understanding of the natural environment and the area's cultural heritage, improved physical health and fitness from exercise, positive contributions to the local economy and increased revenues from tourist revenue, personal growth and development by confronting physical challenges in a remote setting, and maintenance of mental health from relaxation in an uncrowded, remote, and physically stimulating environment.

Compared to Alternative A, this alternative would have impacts that are more beneficial to recreational opportunities by allowing dispersed camping within the CSRMA. There would be more long-term beneficial impacts to recreational resources under this alternative when compared to Alternative A because permitted vegetation, range, and wildlife improvements would have more long-term, beneficial impacts that would enhance the recreational experience (e.g., improved wildlife habitat that would potentially increase the likelihood of satisfying wildlife observation experiences, a healthy mosaic of vegetation that provides a natural wilderness-like experience and better sight-seeing, etc.).

Alternative C

This alternative would have management decisions and impacts similar to those discussed under Alternative B (except for those decisions addressing pet and stock animal issues) because the management decisions are similar. Pet and stock animal-related management decisions would be similar to those discussed under Alternative A except that greater limitations would be applied to stock day use under Alternative C. Stock day use would be limited to one party per day per trailhead in all canyons requiring permits, which would have short-term, adverse, but minor, limitation-related impacts on stock use recreational opportunities for this user group, but long-term, beneficial impacts on the recreational resource through resource preservation. Also, greater limitations would be placed on pets and stock animals if resource monitoring and management determined that the presence of these animals was adversely affecting recreational resources. The impacts of this decision on recreational opportunities or resource user groups would be negligible to minor because pets are not an integral component of recreational resources or opportunities within the CSRMA and alternative stock trails and recreational opportunities would be available within the CSRMA. The benefits from the recreational opportunities provided under this alternative would be similar to those discussed under Alternative B.

This alternative would have more beneficial impacts on recreation and resource users than Alternative A for reasons similar to those discussed under Alternative B because the management decisions are similar: more opportunities would be available for dispersed recreation, and more resource protection-related management decisions would be applied than under Alternative A to ensure the maintenance and preservation of recreation resources.

Alternative D

Alternative D would have management decisions and impacts similar to those proposed under Alternative C because the management decisions are the same, except for those decisions addressing pets and stock animals. Under this alternative, pets and stock would be prohibited or have limitations placed on their presence if monitoring determined they were causing adverse impacts to resources within the CSRMA. Otherwise, stock and pet management decisions and impacts would be the same as discussed under Alternative A.

Compare to Alternative A, this alternative would have more beneficial impacts on recreational opportunities and resources for reasons similar to those discussed under Alternative B because the management decisions are similar. Pet and stock-animal management decisions would be more beneficial than Alternative A because greater limitations or prohibitions would potentially be placed on them under this alternative to protect recreation resources.

Alternative E

Under this alternative, the impacts on recreation would be the same as discussed under Alternative B, except that approximately 109,700 acres (29% of the proposed SRMA) would be protected from surface disturbances to preserve the wilderness values within non-WSA lands with wilderness characteristics. This would beneficially impact recreational resources within these areas through the application of greater restrictions and prohibitions on surface disturbances, including mineral leasing closure, no off-route OHV use, designation as VRM Class I, and closing these areas to firewood collection. The impacts on resource user groups would be the same as the discussion under Alternative B because the opportunities for remote, dispersed, backcountry experiences for motorized OHV, mountain biking, and non-mechanized users would remain: OHV motorized and mountain biking travel would be allowed along designated routes within the non-WSA wilderness characteristics areas, and dispersed camping would be also be allowed within these areas. The comparison of this alternative with Alternative A would be the same as discussed under Alternative B because the management decisions are the same.

4.3.10.3.10.3. Grand Gulch

Alternative A

Under Alternative A, 385,000 acres would continue to be managed as the Grand Gulch Plateau SRMA through the management decisions established in the 1991 RMP. As a continuation of current management, the SRMA would be impacted by conditions and trends discussed in Section 3.10.4.2. These include the potential for increased resource use conflicts, disturbance of cultural resources within the SRMA, and trampling of vegetation and disturbance to wildlife from recreationists.

Grand Gulch/Cedar Mesa Top Day Use and Camping

Under this alternative, the Cedar Mesa mesa top would remain open to dispersed camping, no permits would be required, and there would be no limitations on the number and size of user groups. The beneficial impacts for all recreation user groups under Alternative A would be short-term because current recreational management would provide unrestricted opportunities for non-mechanized recreational groups that seek remoteness, solitude, and primitive backcountry experiences. The long-term impacts of unrestricted resource use would include recreational resource degradation across the mesa top from an increasing number of unrestricted recreational resource users. Current trends and conditions (see Section 3.10.4) indicate that this type of unrestricted recreational use is likely to result in visitor overcrowding, resource use conflicts, and resource degradation, with potentially adverse impacts on all recreation user groups.

Grand Gulch/Cedar Mesa In-Canyon Day Use

Management decisions for in-canyon day use within the Grand Gulch SRMA limit commercial and private groups sizes by setting the group size limits at 12 individuals, but they do not limit the number of parties per day along trails. Permits are required for commercial groups. As discussed above, the impacts of these management decisions would have beneficial short-term impacts on non-mechanized users because the recreational opportunities for experiencing daytime in-canyon hiking and sightseeing are essentially unrestricted. As the popularity of the area increases, as is indicated by current trends, the long-term impacts would include resource use conflict and recreational experience degrading impacts for those seeking a recreational experience that includes solitude, quiet, and uncrowded trails because there are no private or commercial restrictions on access to any of the day use canyons.

Grand Gulch/Cedar Mesa In-Canyon Camping

Under Alternative A, current management limits group sizes (see Table 4.84 above) and no overnight camping party may spend more than two consecutive nights at a campsite near Junction Ruin, Turkey Pen Ruin, Jailhouse Ruin, or the mouth of Bullet Canyon. Camping would be permitted in all established campsites only, away from any cultural resources and riparian areas. No campfires would be allowed.

In-canyon management decisions would restrict the number of people allowed to camp within the canyons, which would have protection-related beneficial impacts on both recreation-related cultural and natural resources while maintaining recreational opportunities for in-canyon isolation and a sense of solitude (recreational qualities that are sought by non-mechanized recreational user groups). Non-mechanized user groups may experience short-term impacts on the range of available in-canyon camping recreational opportunities because of the limitations placed on the number of users allowed to camp, where they may camp, and how long they may camp. In-canyon camping restrictions would have long-term preservation-related beneficial impacts on recreation resources by restricting the potential surface disturbances caused by camping to specific areas and requiring waste management and disposal at campsites. Restrictions on in-canyon length-of-stay would beneficially provide more recreational opportunity in the long-term for more non-mechanized user groups because more groups could potentially receive in-canyon camping permits during the camping season.

Alternatives B and E

Grand Gulch/Cedar Mesa-Top Day Use and Camping

Under the action alternatives (Alternatives B, C, D, and E), the Grand Gulch area would be managed under the Cedar Mesa CSRMA to provide cultural appreciation/interpretive-related recreation and backcountry to front country recreational opportunities. These managed opportunities would include rock art viewing, hiking and backpacking, horseback riding, OHV riding, and camping.

Management decisions under Alternatives B and E would permit an unrestricted number of day use groups on the mesa top, but limit group size for commercial and private recreational use to 10 individuals per group. Camping would be permitted in designated campsites with limitations on group size (12 individuals per group) for commercial and private groups. Waste removal would be required for overnight camping, and campsites would be closed if adaptive-management monitoring detected that recreation users were adversely impacting sensitive mesa top cultural sites. The impacts of these management decisions on mesa top recreational resources would be beneficial in the long-term because cultural resources would be protected, the intensity of surface disturbances caused by non-mechanized recreational user groups would be reduced by reducing group sizes and restricting campsites, and waste removal from campsites would reduce the impacts to natural resources. The impacts on resource users would also be beneficial in the long term: limiting both day use and camping group sizes would increase the likelihood of a satisfying recreational experience by limiting the noise, overcrowding, and use conflicts associated with large groups. Waste removal would have short-term and long-term, beneficial impacts on resource users by maintaining a satisfying recreational camping experience. Limiting group size would have negligible impacts on recreational opportunities for non-mechanized recreational users because there are no limits on the number of groups permitted on the mesa top. The potential outcome of increasing the likelihood of satisfying recreational experiences through the proposed management decisions would have beneficial impacts on resource users as discussed under Alternatives B and E, Cedar Mesa CSRMA.

Compared to Alternative A, these alternatives would have more beneficial impacts on mesa top day use and camping recreational opportunities because limitations on group size, waste removal requirements, the requirement for designated camping, and monitoring of cultural resources would provide more protection to recreational resources, reduce the potential for resource use conflicts, and reduce the intensity of recreation-caused surface disturbances to the recreation resource.

Grand Gulch/Cedar Mesa In-Canyon Day Use

In-canyon day use for commercial and private groups would have limitations on group size and group numbers per day (group size limits of 10 individuals for commercial and private; one commercial group every other day per trailhead, one private group per day per trailhead). In-canyon areas would be closed to commercial use, as needed to protect cultural and natural resources, and permits would be required for private and commercial groups. The impacts of these management decisions on recreational resources would be beneficial in the long-term because the intensity of recreation-caused surface disturbances within the canyons would be reduced and natural and cultural recreation resources would be protected. Under these alternatives, there would be potential impacts of 10 visitors per day per trailhead from private users, and five visitors per day per trailhead for commercial users (totaling 15 visitors per day

per trailhead). The impacts on in-canyon recreation users would be short-term, but minor on those non-mechanized users who seek in-canyon recreational opportunities but do not immediately receive an in-canyon permit because of group size and number limitations. The long-term impacts on resource users seeking an in-canyon recreational opportunity would be beneficial because group size and number limits (i.e., a reduction in the density of in-canyon recreation users) would: (1) beneficially increase the likelihood of a satisfying experience in which remoteness, isolation, and quiet are expected; and (2) reduce the likelihood of resource use conflicts between in-canyon day use groups.

Compared to Alternative A, these alternatives would have more beneficial, long-term impacts on recreation resources and on non-mechanized user groups because more resource protection-related management decisions would be applied to in-canyon day use. Alternatives B and E would have more long-term beneficial impacts on recreation resource users than Alternative A because more restrictions on group size and numbers would, in the long-term, create in-canyon group conditions that increase the likelihood for satisfying in-canyon recreational experiences.

Grand Gulch/Cedar Mesa In-Canyon Camping

The management decisions applicable to in-canyon camping would be the same as discussed under Alternative A except that designated campsites would be assigned based on group size and if stock animals are included in the group, limitations on group camping would be applied if monitoring determined that recreation activity was adversely impacting in-canyon cultural resources, limits on the size and number of private and commercial in-canyon camping groups would be applied, and requirements for waste removal would be enforced if monitoring determined that recreation-related waste was threatening public health and/or in-canyon resources. Under these alternatives, private group size would be limited to six individuals per day for each trailhead, and commercial groups would be limited to 10 individuals per day for each trailhead. Overnight camping use for the major trails in the proposed SRMA would be limited to 16 visitor days per trail. The impacts of these management decisions on recreation resources would be similar to the impacts discussion for Grand Gulch/Cedar Mesa top day use, in-canyon day use, and mesa top camping.

Compared to Alternative A, these alternatives would have impacts that are more beneficial to recreation resources and on recreation resource users for the same reasons as discussed under Grand Gulch/Cedar Mesa top day use, in-canyon day use, and mesa top camping.

<u>Alternative C</u>

Grand Gulch/Cedar Mesa Top Day Use and Camping

Day use management decisions and impacts would be the same as those discussed under Alternative B except there would be no group size limits, commercial or private, for groups using Kane Gulch Ranger Station, Mule Canyon Ruin, Salvation Knoll, and other sites as identified. Group size limits of 12 individuals for other private and commercial use on the mesa top would be applied, but there would be no limits on group numbers. The long-term impacts of unrestricted group size limits on recreation resources in the developed, day use areas would be negligible to minor because: (1) these sites have been managed and designed to accommodate large number of visitors and (2) adaptive management would be applied to these areas (as discussed under management decisions common to action alternatives) to ensure that resource degradation would not occur. The impacts on recreation resource users (primarily motorized

scenic drivers and non-mechanized day hikers) would be negligible because site visitation has not required a permit.

Mesa top camping management decisions and impacts would be the same as discussed under Alternative B except group size limits would be doubled (to 24 individuals) for commercial and private groups, and large groups (12–24 individuals) would be assigned designated campsites to accommodate the large group size. Increasing the group size limits under this alternative (that is, potentially doubling the number of individuals permitted to camp on the mesa top when compared to Alternative B) could have impacts on recreational opportunities to experience remoteness, isolation, and an uncrowded backcountry experience if large groups were hiking and/or camping near each other. Permitting large-group size under this alternative could also increase the likelihood of resource use conflicts (e.g., competition for shade, water, scenic view points) if several large groups are using the same trail or route, but management decisions to designate campsites for large groups would mitigate this concern. The impacts to recreation resources from permitted large groups and designating campsites for large groups would be mixed: the impacts on trailside natural resources would be more intense in the long-term because of the larger number of individuals impacting an area at the same time, but designated campsites would have long-term beneficial impacts on natural resources because it is assumed that these sites would be designed to accommodate large group sizes, thereby concentrating camping impacts within the designated area.

Compared to Alternative A, this alternative would be more beneficial for reasons discussed under Alternative B, and because even though large groups would be permitted to camp on the mesa top, management decisions would accommodate camping impacts by designating campsites that could absorb these potential impacts.

Grand Gulch/Cedar Mesa In-Canyon Day Use

The proposed management decisions and impacts for in-canyon day use under this alternative are similar to those proposed and discussed under Alternative B, except that a group size of 12 individuals per group for private and commercial use would be applied. Private and commercial use would be limited to 12 individuals per day for each trailhead, with impacts of 12 visitors per day per trailhead from private users, and 12 visitors per day per trailhead from commercial users (totaling 24 visitors per day per trailhead), a 60% increase in use compared to Alternative B. The comparison of this alternative to Alternative A would be similar to the discussion under Alternative B.

Grand Gulch/Cedar Mesa In-Canyon Camping

The proposed management decisions and impacts for in-canyon camping under this alternative would be similar to those proposed under Alternative B, except that under this alternative, private group size would be limited to eight individuals per day for each trailhead, and commercial groups would be limited to 12 individuals per day for each trailhead. Overnight camping use for the major trails in the proposed SRMA would be limited to 20 visitors per day per trail, a 25% increase in recreational use when compared to Alternative B. The comparison of this alternative to Alternative A would be similar to the discussion under Alternative B.

Alternative D

Grand Gulch/Cedar Mesa Top Day-Use and Camping

The proposed management decisions for in-canyon day use and camping under this alternative would be similar to those proposed under Alternative C, with similar impacts. The comparison of this alternative for mesa top day use to Alternative A would be similar to the discussion under Alternative C.

The proposed management decisions for mesa top camping would not establish designated campsites for large groups fewer than 24 individuals, would establish designated campsites for group sizes larger than 24 individuals, group size limits would not be set, campsite facilities would be developed as needed, and recreational activity at campsites that adversely impact cultural sites would be closed. These management decisions would have long-term impacts on recreational resources similar to those discussed under Alternative A because of the potential for resource use conflicts and overcrowding from unrestricted numbers of campers, the potential degradation of resources caused by the concentration of large camping groups at undesignated campsites, and the potential degradation of natural and cultural resources from concentrated surface disturbances caused by large camping and hiking groups. The proposed management decision to provide campsite facilities as needed to accommodate the large camping groups would have beneficial impacts on natural resources by providing for waste disposal, and it would have beneficial impacts on the recreation experience of those recreation users who expect a less primitive, less natural camping experience. However, based on the assumed recreational expectations (as described in Section 4.3.10) of non-mechanized recreational user groups, the development of mesa top campsites with toilets, fire grates, picnic tables, and other amenities would likely produce an unsatisfying recreational experience where there was an expectation of a primitive, undeveloped, natural, remote, and uncrowded backcountry experience that also provides opportunities for solitude.

The impacts on recreational users would be similar to those discussed under Alternative A.

Grand Gulch/Cedar Mesa In-Canyon Day Use

The proposed management decisions for in-canyon day use under this alternative would be similar to those proposed under Alternative C except that two commercial groups per day (with 12 individuals per group) would be permitted to access the Grand Gulch trails (totaling 24 commercial visitors per day per trail). Combined with proposed private trail use of 12 visitors per day per trail, this would have a total trail impact of 36 visitors per day per trail, an almost two and one-half times increase in permitted day trail use when compared to Alternative B and a one and one-half times increase when compared to Alternative C. The impacts would be similar to those discussed under Alternative A (e.g., resource degradation, potentially unsatisfying hiking experiences) because the number of individuals permitted to access trails under this alternative would likely create conditions that degrade, diminish, or reduce the opportunities for a sense of solitude, quiet, naturalness, and remoteness sought by this recreational user group.

Grand Gulch/Cedar Mesa In-Canyon Camping

The management decisions for this alternative would be similar to those discussed under Alternative C except that dispersed camping would be permitted for groups of seven or fewer, groups of eight to 12 and those with stock animals would be permitted to camp in designated campsites, and adaptive-management limits on visitors would be modified to protect recreational

resources. The impacts on recreational resources and on recreational users would be similar to those discussed under Alternative C because, while total overnight visitor limits would be higher (24 visitors per day per trail versus 20 for Alternative C, or a 20% increase over Alternative C), the impacts of dispersed in-canyon camping and the impacts of larger group designated camping would be similar. Compared to Alternative A, this alternative would have impacts similar to those discussed under Alternative C.

4.3.10.3.10.4. Dark Canyon SRMA

Under the action alternatives (B, C, D, and E), the 30,820-acre Dark Canyon SRMA would be established. Under these alternatives, the area would be managed under the BBM goals and objectives (see Appendix E) to provide recreational opportunities for backcountry, non-mechanized recreation, and cultural resource and heritage appreciation. The primary activities for which the area would be managed would include backcountry hiking and backpacking, canyoneering, horseback riding, cultural site visiting, and wilderness therapy and education.

Alternative A

Under this alternative, Dark Canyon would continue to be managed under the stipulations of the 214,390-acre Canyon Basin SRMA management plan (which would also continue to include Indian Creek [see below]). Management decisions under this plan would include no limitations on recreation group size or group numbers, open to dispersed camping, no permits for private use, no permit fees for commercial use, dogs and vehicles allowed, fires allowed, and a minimal ranger presence within the Canyon Basin SRMA. Current conditions and trends, discussed in Section 3.10.2.5, describe increasing demand for both private and commercial use of the area by non-mechanized user groups for primitive backcountry hiking; increasing popularity of the area combined with unlimited, unrestricted group size; minimal monitoring of potential recreation-caused surface disturbances from unrestricted camping and potential degradation of cultural resources; the unrestricted use of campfires; and the unrestricted presence of pets within the area, which would create conditions for substantial noise and surface disturbance. In the long-term, these conditions would intensify as demand for access to the area continues to grow. The impacts on recreation resource users would be beneficial in the short-term because the recreational opportunities for non-mechanized user groups to experience remote, primitive, backcountry hiking and sightseeing and a sense of solitude and isolation would be unrestricted. However, as private and commercial demand to experience this area increases, the long-term impacts on recreation users would include the potential for overcrowding, the potential for pet noise, the potential for resource use conflicts because of overcrowding, pet waste, pet-wildlife and pet-human conflicts, the increasing potential for surface disturbances that degrade cultural and natural resources, and the resulting degradation or diminishment of recreational opportunities for a satisfying primitive, backcountry recreational experience.

Alternatives B and E

Similar management decisions for the proposed Dark Canyon SRMA under Alternatives B and E would include limits on group size (10 individuals for private use, 12 individuals for commercial use), limits on the total number of private users per day (15 individuals), the establishment of a permit and fee system, designated campsites, limits on campfire use (mesa tops only), waste management, prohibitions on pets, and prohibitions on firewood collection. Under this alternative, one commercial trip allowed per week (12 individuals), combined with a maximum

15 private users per day would have a potential maximum use of 27 individuals per day within the SRMA. These management decisions would have short-term and long-term protection-related, beneficial impacts on recreation resources within the boundaries of the SRMA because: (1) limits on group size and number of users, removal of waste, and camping within designated campsites within the SRMA would reduce the intensity and area of natural resource surface disturbances; and (2) restricting campfire use would reduce surface disturbances and reduce the risk of wildland fire within the canyon. The impacts of limiting group size and numbers could cause short-term delayed entry into the SRMA for those recreation resource users seeking opportunities for a primitive, remote backcountry experience. However, these management decisions would have long-term beneficial impacts on those non-mechanized recreation resource users seeking a primitive, remote backcountry experience that includes a pristine natural environment, a sense of solitude and remoteness, and quiet. The potential beneficial outcome of the opportunities for backcountry recreational experiences would include physical rest and maintenance of mental health, improved physical fitness, increased tourist revenue, and an appreciation of the natural environment and the region's cultural heritage. The likelihood of a satisfying backcountry experience that includes the above attributes would be increased because: (1) limits on group size and group numbers would increase the likelihood of group dispersal within the SRMA; (2) designated camping, prohibitions on open fires, and requirement for waste removal would reduce natural resource impacts; and (3) and the prohibitions on pets would reduce pet-wildlife and pet-human conflicts and potentially reduce the level of intrusive noise.

Note that under Alternative E, approximately 2,522 acres (8% of the proposed Dark Canyon SRMA) would be managed as non-WSA lands with wilderness characteristics for the preservation of wilderness values. Beneficial, minor impacts to recreation resources and user groups would result from the additional restrictions or prohibitions on surface disturbances within these areas. The impacts would be minor because: (1) the proposed SRMA under this alternative would be managed to maintain the area's pristine environment for remote, dispersed, and primitive recreation, allowing only minor surface disturbance impacts, and (2) the size of the affected area would be relatively small in comparison to the size of the proposed SRMA, which would not likely affect the opportunities for primitive recreation within the proposed SRMA.

Compared to Alternative A, this alternative would preserve the recreation-related natural and cultural resources, have a greater potential to reduce or prevent resource use conflicts, and create the conditions and increase the likelihood for a satisfying recreational experience for non-mechanized recreational user groups.

Alternative C

The management decisions under Alternative C would be same as those discussed under Alternative B except that adaptive-management would assess and then determine if waste management was required to preserve recreation resources, pets would be allowed in-canyon but on leash and under physical control, fire pans would be permitted, and groups size and numbers would be increased. The impacts on Dark Canyon recreation resources would be similar to those discussed under Alternative B, but with a decrease in long-term beneficial impacts caused by an increase in permitted commercial groups (15 individuals per group for private and commercial use; an increase from one commercial group per week under Alternative B to three commercial groups per week under this alternative) and reduced restrictions on pets within the canyon. A total of 20 private users per day would be permitted. So, total permitted SRMA use per day could

be 65 users per day (45 commercial users and 20 private users). This would potentially increase maximum users per day by almost two and one-half times when compared to Alternative B. An increase in commercial groups under this alternative would reduce the sense of in-canyon solitude and remoteness because commercially-related users would potentially increase more than three times in comparison to Alternative B. The presence of pets within the canyon could create in-canyon intrusive noise and on-trail human-pet conflicts, but mandatory physical control of pets would mitigate pet-wildlife conflicts.

Compared to Alternative A, this alternative would have more beneficial resource preservation and recreation user impacts for the same reasons as discussed under Alternative B.

Alternative D

Alternative D proposes management decisions for Dark Canyon that would allow seven commercial trips per week and group size limits of 15 individuals for both commercial and private recreational groups. Dispersed camping and campfires would be permitted throughout the proposed SRMA, as would on-site collection of campfire wood and physically controlled on-leash pets in the canyon. Maximum potential commercial-type recreation within the SRMA would be limited to a total 105 individuals per day (seven groups of 15 individuals each) with no limits on the number of private groups. At least, this represents an almost four-fold increase in recreational impacts within the SRMA when compared to Alternative B. The impacts of these management decisions on recreation resources would be similar to those discussed under Alternative A because the combination of unrestricted dispersed camping, an unrestricted number of private groups, large and numerous commercial groups, unrestricted use of campfires, no designated campsites, and unrestricted collection of firewood would have substantial long-term impacts on recreation resources. As discussed under Alternative A, there would be short-term beneficial impacts on unrestricted recreational opportunities for primitive, dispersed non-mechanized backcountry recreational experiences, but these opportunities would be diminished and/or degraded, and the likelihood of a satisfying backcountry experience that includes solitude, quiet, a sense of remoteness in a pristine environment, and the potential personal benefits derived from those experiences (as discussed under Alternative B) would be adversely impacted. This would be due to overcrowding, resource user conflicts indirectly caused by overcrowding, noise, and natural and cultural resource degradation caused by the intensity of recreational use and by the intensity of surface disturbances from dispersed camping, firewood collection, and human and pet waste.

Compared to Alternative A, this alternative would have impacts similar to those discussed under Alternative A because, while Alternative A would manage the area with fewer restrictions than Alternative D, the differences between the two alternatives would be negligible.

4.3.10.3.10.5. Indian Creek SRMA

Alternative A

Under Alternative A, Indian Creek Corridor would continue to be managed under the stipulations of the 214,390-acre Canyon Basin SRMA management plan. The management decisions for this area would be the same as those discussed above under Dark Canyon Alternative A (see Section 4.3.10.3.10.4). The impacts of these management decisions on recreation resources within Indian Creek would be short-term and long-term, based on the current conditions and trends discussed in Section 3.10.2.5. Briefly, these current trends and conditions include: (1) the rapidly

increasing popularity of the area for specialized (rock climbing), non-mechanized (hiking), motorized OHV use, and scenic driver user groups; (2) the demand for additional recreational services and facilities to meet the needs of these diverse recreational users; (3) an increase in the size and intensity of use of dispersed camping areas; (4) intensifying resource use conflicts (between recreation user groups and between livestock grazing and recreational uses) because of its increasing popularity; (5) waste management concerns; (6) inadequate and/or unsafe vehicle parking along the Indian Creek Corridor; and (7) the current impacts of recreational activities on the area's cultural resources.

Continuing to manage Indian Creek under the above-mentioned conditions combined with proposed management decisions that permit unlimited, unrestricted group size, minimal monitoring of potential recreation-caused surface disturbances from unrestricted camping and potential degradation of cultural resources, the unrestricted use of campfires, and the unrestricted presence of pets within the area would create conditions for substantially intensifying surface disturbances to recreation-related natural and cultural resources. The proposed management decisions under this alternative would cause these impacts because the decisions neither address nor mitigate the current recreational trends and conditions that are affecting and are expected to continue to affect this area.

Under Alternative A, the current impacts on recreation resource user groups would continue to intensify because the management decisions proposed under this alternative do not address these conditions. Specifically, the management decisions under this alternative would permit increasing resource user group conflicts, permit an increase in health and safety concerns, permit the potential degradation of recreation cultural and natural resources, permit a diminishment and degradation of recreational opportunities, and create a substantial decline in satisfactory recreational experiences for all resource user groups because none of the adversely causative issues described above would be addressed under the proposed management decisions.

Alternative B

Under Alternative B (and the other action alternatives), the 89,721-acre Indian Creek SRMA would be established and managed to provide BBM-based opportunities for backcountry to front country recreation, as well as opportunities for interpretation of cultural resources and appreciation of the region's cultural heritage. Managed recreational opportunities would include rock climbing, OHV riding, backcountry hiking and backpacking, viewing rock art, camping, wilderness education, and sight-seeing.

Management decisions under Alternative B would include prohibitions on dispersed camping within the Indian Creek riparian corridor from Newspaper Rock to downstream of the Dugout Ranch, the Newspaper Rock campground would be closed and rehabilitated, designated-only camping would be allowed along Bridger Jack Mesa bench, a new campground would be constructed, prohibitions on woodcutting and collecting with restrictions on campfires would be applied, rock climbing routes that adversely impact cultural sites would be closed, funds from camping fees would be used to develop new facilities, parking areas would be developed, adaptive monitoring of the area would be applied to ensure resource protection, and new climbing routes would be established with designs to ensure raptor protection. Management decisions under this alternative would also prohibit dispersed camping in the Indian Creek Corridor. Other specific management decisions that address the need to protect and limit impacts to the area's natural and cultural resources, limit resource user conflicts, and meet the BLM's

mandate for multiple use within the proposed SRMA boundary were analyzed in the Indian Creek Corridor Plan and Environmental Assessment (EA) (BLM 2005m).

The proposed RMP management decisions and the management decisions contained within the Indian Creek Corridor Plan EA Decision Record would have short-term and long-term beneficial impacts on recreation resources within the proposed Indian Creek SRMA because recreation-related cultural resources and natural resources would be protected from potential degradation or disturbances caused by rock climbing, OHV use, and hiking. Intensifying visitor use and camping near Newspaper Rock would be addressed, as would waste concerns. Designated camping, prohibitions on dispersed camping and wood collection for campfires, and adaptive-management and monitoring of recreation resources within the SRMA would have short-term and long-term beneficial impacts because surface disturbances would be restricted to designated areas.

The impacts on recreational user groups that use the area would be beneficial in the short-term and long-term because building additional recreation facilities (parking lots, campgrounds, toilets, and day use picnic areas) would, respectively, reduce traffic safety concerns along the Indian Creek Corridor, relieve the demand for camping within the proposed SRMA, improve waste management conditions, and provide additional recreational opportunity areas for scenic driving users to enjoy the area. Recreation resource user groups that seek dispersed camping opportunities (e.g., rock climbers, backpackers) would be impacted by limitations that would be placed on dispersed camping (dispersed camping would not be allowed within the Indian Creek Corridor), which would reduce these opportunities and potentially diminish the recreational experiences that include dispersed camping. There would be long-term, beneficial impacts on all other recreation user groups that seek recreational opportunities in the proposed SRMA because, as the area's popularity continues to grow, the proposed management decisions would limit the number of users that are permitted to recreate and camp in the proposed SRMA, thereby reducing the potential for overcrowding and user conflicts. Management prescriptions contained within the EA, combined with the proposed management decisions under this alternative, would increase the likelihood that the current conditions and trends (as discussed under Alternative A) would be addressed, which in turn would increase the likelihood that recreational expectations would be met and that users would have satisfying recreation experiences and would maintain the range of recreational opportunities currently available in the area. The maintenance of recreational opportunities within the proposed SRMA would also increase the likelihood for beneficial experiences that include BBM objectives of challenging physical exercise and improved physical health, increased tourist revenues, education and personal development and growth, and maintenance of mental health (Table E.2.3, Appendix E).

Compared to Alternative A, this alternative would be more beneficial in the short-term and long-term because it would adequately address the resource use conflicts and recreational resource degradation concerns that are occurring within the area proposed as the Indian Creek SRMA.

Alternative C

The management decisions under this alternative would be the same as those discussed under Alternative B except that dispersed camping would be allowed within the Indian Creek Corridor (with designated, dispersed camping allowed within specific camping zones). The impacts of management decisions under this alternative would be similar to those discussed under Alternative B, but with greater surface disturbance impacts caused by dispersed camping from

the expected increasing use of the area by recreation user groups. The comparison of Alternative A to this alternative would be similar to those impacts discussed under Alternative B because the management decisions and the impacts of the management decisions are similar.

Alternative D

The management decisions and impacts on recreation resources and recreation resource users would be similar under Alternative D to those discussed under Alternative C because the management decisions are similar.

The comparison of Alternative A to this alternative would be similar to those impacts discussed under Alternative B because the management decisions and the impacts of the management decisions are similar.

Alternative E

Under this alternative, the impacts on recreation resources and users would be the same as discussed under Alternative B because the management decisions are the same, except that approximately 47,393 acres (53% of the proposed SRMA) of non-WSA lands with wilderness characteristics that lie within the proposed SRMA and would be managed to preserve their wilderness values. The impacts on recreation resources would be the same as discussed under Alternative B because surface disturbances within the proposed SRMA would be limited to specific areas (i.e., parking lots, designated camping sites, hiking trails, rock climbing on designated routes, and OHV travel along designated routes) to preserve the area's recreation resources. The impacts on recreation user groups would also be similar to Alternative B because the management decisions applied to the non-WSA wilderness characteristics areas to preserve wilderness values under this alternative (e.g., no wood gathering, no off-route OHV use, mineral leasing closures, no new road construction) would be similarly applied under the SRMA management decisions to reduce user conflicts while maintaining the area's resources and diverse range of recreational opportunities.

4.3.10.3.10.6. White Canyon SRMA

Alternative A

Under this alternative, White Canyon would not be managed as an SRMA. Management decisions under this alternative would not restrict private or commercial group size, would allow open camping and campfires, and would not require permits for private groups but would require permits for commercial groups. The impacts on recreation resources could be adverse in the long-term if campfires, camping wastes, and dispersed camping caused surface disturbances along the canyon rim were to degrade recreational resources. Increasing waste disposal within the canyon, which could degrade the in-canyon recreational experience for specialized recreation users (canyon climbers, slot canyoneers) and non-mechanized users (canyon hikers), would have short-term adverse impacts on these recreation users.

Alternative B

Alternative B would create the White Canyon SRMA (2,828 acres) for the purposes of providing outstanding recreational opportunities and visitor experiences while protecting the area's natural and cultural resource values The SRMA would be managed to provide opportunities for recreation that include backcountry hiking and backpacking, remote camping, canyoneering,

cultural site visitation, and wilderness education. Management of the SRMA would include the establishment of a backcountry permit system if deemed necessary, the development of primitive campgrounds at Soldier and Grave Crossings, the use of fire pans on mesa tops, a ban on campfires in canyons, and the requirement that wastes be packed out. These management decisions would have short-term and long-term, resource preservation-related beneficial impacts in-canyon and on the canyon rim of the SRMA by reducing or mitigating surface disturbances to recreational resources. The implementation of a backcountry permit system (as necessary to protect resources) could have access-related impacts on recreational user groups in the short-term by limiting recreational opportunities, but it would also increase the likelihood for solitude, a sense of isolation, and a satisfying canyon experience by reducing the density of canyon recreation users. The beneficial outcome of managing the area under BBM goals and objectives for satisfying recreational experiences would include the likelihood for personal development and growth from physical challenges within the canyon, an appreciation for the region's cultural heritage and natural resources, improved physical health, mental health maintenance, and tourism revenue from backcountry permits (Table E.2.5, Appendix E).

Compared to Alternative A, these alternatives would have more long-term beneficial impacts on the SRMA natural recreational resources and on the recreational opportunities for a satisfying in-canyon experience because the potential impacts caused by increasing use of the area would be less under this alternative than under Alternative A.

Alternative C

The management decisions and impacts under this alternative would be similar to those discussed under Alternative B because the management decisions would be similar. Compared to Alternative A, the impacts under Alternative C would be similar to those discussed under Alternative B.

Alternative D

Under Alternative D, the White Canyon SRMA would be established with management decisions that include the development of primitive canyon-rim campsites, waste management options if waste becomes a concern, and requirements for fire pans for in-canyon and canyon rim campfires. Management decisions would not include the establishment of a backcountry permit system, The impacts of these management decisions would have beneficial long-term impacts on recreation resources by providing canyon rim camping sites and requiring fire pans for campfires. These decisions would reduce or limit surface-disturbances to recreation resources. Recreation resources could be impacted in the long-term by the lack of a backcountry permit system because the intensity of in-canyon and canyon rim recreational use (with the potential for surface disturbances) would not be limited. The impacts of unlimited visitation and recreation within the SRMA could be adverse in the long-term because potential overcrowding would reduce the opportunities for a satisfying in-canyon canyoneering or hiking experiences if in-canyon recreational expectations include solitude, a sense of remoteness, and an unspoiled canyon environment. The potential beneficial outcomes of BBM management for satisfying recreational experiences (as discussed under Alternative B) would be unlikely because of the reduced opportunities for these experiences (see Table E.2.5, Appendix G). However, compared to Alternative A, this alternative would have impacts that are more beneficial on recreation resources and on recreational users because it proposes management decisions that would limit or mitigate surface disturbances caused by recreational resource use.

Alternative E

Under Alternative E, the management decisions and impacts on recreation would be the same as under Alternative B because the management decisions are the same, except that approximately 2,092 acres (74% of the proposed SRMA) would be managed as a non-WSA area with wilderness characteristics for the protection of wilderness values. The impacts on recreation resources would be the same as discussed under Alternative B because the proposed SRMA management decisions under this alternative would apply the same prescriptions to protect recreational resources from surface disturbances as those applied within non-WSA wilderness characteristics areas. The impacts on recreational users would be the same as discussed under Alternative B because both alternatives would have the same levels of resource protection with the same impacts on resource users.

4.3.10.3.10.7. Extensive Recreation Management Area (ERMA)

Alternative A

Management decisions for managing the ERMA are not specified under this alternative. However, general management decisions under this alternative would apply adaptive management to the Monticello PA to monitor and assess resource uses to determine if more intensive management should be applied to the ERMA. If adaptive management were to determine that an area was receiving intense use, then SRMA designation would be an option for that area, with SRMA designation assigned through the RMP amendment process. Construction of recreation facilities would be considered for areas within the ERMA, as needed, to ensure visitor health and safety, reduce user conflicts, and protect recreation resources.

All of these proposed management decisions would have long-term, beneficial impacts on ERMA recreation resources because adaptive management would ensure that changes in recreation resource use would receive an appropriate management response to protect recreation resources. The impacts on recreational resource users would also be beneficial in the long-term because ERMA adaptive management would respond appropriately to potential resource use conflicts and resource user group needs for facilities, which would maintain the likelihood for satisfactory recreational experiences for all recreation user groups.

Alternative B

Alternative B would also apply the general adaptive management decisions to the Monticello PA to monitor and assess resource uses, as discussed above under Alternative A, with the same impacts on recreation resources and resource user groups. Specific management decisions under this alternative would limit dispersed vehicle camping within the ERMA to previously disturbed areas along designated routes, limit camping to designated type camping along portions of the Bears Ears road and Deer Flat roads, and coordinate with the Glen Canyon Recreation Area on constructing a campground at Muley Point. These specific management decisions would also have long-term, beneficial impacts on recreation resources within the ERMA by limiting potential recreation-related surface disturbances from camping. The impacts on recreation user groups that seek dispersed vehicle camping opportunities would be minor in the long-term because the recreational opportunities for this type of camping within the ERMA would be reduced. The potential construction of a campground at Muley Point would be beneficial in the long-term for scenic driver groups and other recreational user groups that seek remote but

developed camping sites with high scenic quality because the campground would provide additional recreational opportunities for camping and sightseeing.

Compared to Alternative A, this alternative would have impacts that are more beneficial to recreation resources by limiting vehicle camping-related surface disturbances to areas along designated routes. The impacts on dispersed vehicle camper recreation resource users would be minor because limitations on this form of camping would reduce vehicle camping recreational opportunities. The proposed construction of a campground would have impacts that are more beneficial to recreation than Alternative A because it would provide more recreational opportunities for vehicle camping with a sight-seeing and visual quality component.

Alternative C

The management decisions and impacts on recreation resources and recreation users would be the same as discussed under Alternative B except that dispersed vehicle camping would be allowed within 150 feet of centerline on roads within the ERMA, with dispersed camping encouraged within previously disturbed areas. The impacts of these management decisions would have potentially long-term impacts on recreation resources because surface disturbances from dispersed vehicle camping would potentially degrade roadside recreation resources. However, FO monitoring and management would assess resource impacts and close and rehabilitate roadside camping areas if the level or intensity of the activity were determined to be excessive. Adaptive management would reduce the adverse impacts of roadside vehicle camping because impact mitigation would be applied. The comparison of impacts under Alternative A to this alternative would be similar to those discussed under Alternative B because the impacts discussed under Alternative C are similar to Alternative B.

Alternative D

The management decisions and impacts on recreation resources and recreation users would be the same as discussed under Alternative C except that dispersed vehicle camping would be allowed within 300 feet of centerline on roads within the ERMA. The impacts of dispersed vehicle roadside camping would be similar to those impacts discussed under Alternative C because adaptive management mitigation would be applied to areas where surface disturbances were deemed excessive, including closing and rehabilitating disturbed roadside vehicle camping sites. The comparison of the impacts Alternative A with the impacts of this alternative would be similar to those discussed under Alternative C because the impacts of Alternative C would be similar to the Alternative D impacts.

Alternative E

Under this alternative, a total of 416,526 acres of non-WSA lands with wilderness characteristics would be managed within the ERMA. These areas would be closed to firewood gathering, closed to cross-country OHV travel and new road construction, designated as VRM Class I, and closed to mineral leasing. Surface disturbances within these areas would be minimized to preserve their wilderness characteristics, which would have long-term, beneficial impacts on recreation resources. The impacts on user groups within these areas would be the same as the discussion under Alternative B because the decisions are the same: opportunities for motorized OHV travel, mountain biking, equestrian, and scenic driving into these areas would be unrestricted along designated routes; opportunities for non-mechanized recreation and dispersed camping would remain. Compared to Alternative A, this alternative would have more beneficial impacts on

recreation user groups because recreation-related non-WSA areas with wilderness characteristics would be preserved, which would maintain recreational opportunities for all users.

4.3.10.3.10.8. Special Recreation Permits (SRPs)

Alternative A

Under this alternative, the proposed special recreation permit (SRP) management decision would require SRPs for any recreation-related commercial activity within the Monticello PA (e.g., river floating), with no specified limits on group size. Under this alternative, the issuing of SRPs would be a discretionary management decision containing standard stipulations and additional stipulations as needed to control visitor use (i.e., reduce or minimize resource use conflicts), help meet management objectives, protect cultural and natural resources, and provide for the health and safety of visitors. These SRP management decisions would have long-term, beneficial impacts on recreation resources and on recreation resource users because the special recreation permit process would review the proposed commercial activity and include stipulations to ensure that recreational resources would not be adversely impacted and that the resource use would minimize conflicts between other recreational user groups.

Alternative B

Under Alternative B, the proposed management decisions for SRPs would include those discussed under Alternative A with additional management decisions that would use SRPs to manage not only commercial activities and events but also competitive events, organized group events, vending, and special areas. Specific criteria for determining if an SRP would be required would be proposed under this alternative, including: (1) events, activities, or group sizes that involve a threshold number of individuals; (2) events with potential resource use conflicts and/or health and safety concerns; (3) events that could potentially conflict with management guidelines or prescriptions; and (4) commercial limitations on group size and time of use to protect natural and cultural resources. These SRP criteria would have impacts similar to those discussed under Alternative A because they would also ensure that natural and cultural recreation resources would be protected from special event/activity-related surface disturbances, and that recreational resource user conflicts would be minimized or prevented. Compared to Alternative A, this alternative would have more beneficial, long-term impacts on recreation resources because it proposes specific SRP permit criteria, which Alternative A does not, that could be used to more finely manage and limit the adverse impacts of large recreational private and commercial groups or events.

Alternative C

This alternative would have similar impacts as discussed under Alternative B because the management decisions are similar. The comparison of this alternative to Alternative A would be similar to the discussion under Alternative B.

Alternative D

This alternative would have similar impacts as discussed under Alternative B because the management decisions are similar. The comparison of this alternative to Alternative A would be similar to the discussion under Alternative B.

Alternative E

Alternative E would have impacts similar to those discussed under Alternative B, except that no competitive motorized or mechanized events would be permitted within areas with wilderness characteristics. The impacts would be similar to those discussed under Alternative B, but to a lesser degree, because commercial-type specialized recreational opportunities would be reduced, with long-term, adverse impacts on this user group.

4.3.10.3.11. Impacts of Riparian Decisions on Recreation

4.3.10.3.11.1. Alternative A

Under Alternative A, no specific management decisions would be applied to riparian areas that would affect recreational activities. However, as discussed in Section 3.11.4 Riparian Resource Demand and Forecast, current trends and conditions under this alternative would have indirect impacts on recreational opportunities in riparian areas. The current impacts on riparian resources from recreational use and exotic species encroachment from surface disturbances would continue to degrade riparian recreational resources, and would likely in time degrade scenic quality and recreational opportunities for wildlife viewing, hiking, equestrian, and other trail uses from the loss of native riparian vegetation and riparian habitat. Livestock grazing could degrade riparian areas and recreational opportunities for wildlife viewing, sightseeing, day hiking, and camping (see Section 3.11.4.1) if standards and guidelines are not followed. Consequently, mechanized and non-mechanized user group conflicts would likely intensify as increasing numbers of users compete for use of this diminishing resource, thus reducing the opportunities for and likelihood of satisfying recreational experiences in riparian areas for all users.

4.3.10.3.11.2. Alternative B

Management decisions under this alternative would limit, seasonally restrict, or make unavailable livestock grazing in selected riparian areas determined to be Functioning At Risk. Selected riparian areas Functioning At Risk would also be closed to motorized OHV and mountain biking use if riparian assessments determined that these activities were contributing to riparian degradation. Functioning At Risk riparian areas would be temporarily closed to dispersed, motorized camping until riparian proper functioning conditions were restored. These management decisions would have long-term, beneficial impacts on recreation resources by reducing or removing the causes of surface disturbance-related impacts to riparian recreational resources. These management decisions would have short-term, adverse impacts on recreational opportunities within those riparian areas determined to be Functioning At Risk (approximately 431 miles within the planning area, see Section 3.11.2) because recreational opportunities for some motorized user groups (e.g., OHV, dispersed vehicle campers) would be reduced. There would be long-term, beneficial impacts for all resource user groups because the restoration of functioning riparian areas would increase the likelihood for a satisfying recreational experience in riparian areas where the recreational expectation includes an available water source, protection from summer heat, absence of livestock, scenic quality, and wildlife viewing.

Compared to Alternative A, this alternative would have long-term impacts that are more beneficial to recreational resources and to riparian recreational use because the proposed management decisions would specifically address the causes of recreational/riparian degradation, apply site-specific adaptive management to assess the level of riparian restoration, and

eventually increase the recreational opportunities in these areas to a greater degree than proposed under Alternative A.

4.3.10.3.11.3. Alternative C

Under Alternative C, the management decision impacts on riparian recreational resources would be similar to those discussed under Alternative B because the management decisions are the same. The comparison of Alternative A to this alternative would be the same as discussed under Alternative B above.

4.3.10.3.11.4. Alternative D

The management decision impacts on riparian recreational resources under this alternative would be similar to those discussed under Alternative A because the management decisions are the same.

4.3.10.3.11.5. Alternative E

Under Alternative E, the management decision impacts on riparian recreational resources would be similar to those discussed under Alternative B because the management decisions are the same: Functioning At Risk riparian areas would be closed to cross-country motorized OHV and mountain biking use, and closed to dispersed camping. Opportunities for these recreational activities would be reduced, with long-term, adverse impacts on motorized and mountain biking groups and those seeking dispersed, motorized camping.

4.3.10.3.12. Impacts of Soils/Watershed Resources Decisions on Recreation

4.3.10.3.12.1. Alternative A

The soil and watershed management decisions under this alternative are unspecified.

4.3.10.3.12.2. Alternatives B–E

Soils and watershed management decisions under these alternatives do not specifically address recreation resources and/or recreational users because the management decisions address soil productivity, soil erosion, sedimentation, and watershed health. However, these alternatives have proposed management decisions for erosion control plans for steep slopes that would include steep slope erosion control strategies, and would require BLM-approved survey and design plans for surface disturbing activities on these slopes. These proposed decisions would have long-term, beneficial, indirect impacts on recreation resources and recreation resource users by mitigating soil erosion that could potentially degrade recreation-related scenic quality. Compared to Alternative A, these alternatives would be more beneficial to recreation resources because Alternative A does not include recreation-related management decisions to control, prevent, or mitigate soil erosion.

4.3.10.3.13. Impacts of Special Designation–ACEC Decisions on Recreation

4.3.10.3.13.1. Alkali Ridge ACEC

Alternative A

Under Alternative A, the 40,302-acre Alkali Ridge ACEC would be managed to preserve the cultural resources contained within it. Preservation-related management decisions would include avoidance of all cultural resources by 100 feet, and all NRHP-eligible cultural resource sites would be surrounded by buffer areas for permanent protection of the sites. In those areas where cultural resources or their buffer areas could not be avoided, then appropriate mitigation would be applied to those cultural sites. These management decisions would have beneficial, long-term impacts on recreation-related cultural resources because the resource would be preserved or potential impacts mitigated, and sightseeing/interpretive recreational opportunities would be maintained.

The 2,340-acre Alkali Ridge National Historic Landmark would be managed under the same management decisions as discussed above, with the same impacts as discussed.

Alternatives B and E

Under these alternatives, the 39,196-acre Alkali Ridge ACEC would be designated as a cultural ACEC, a RMP-consistent cultural resource management plan would be written for the area, on-site collection of campfire wood collecting would be permitted, and surface disturbing activities that would potentially impact ACEC cultural resources would be prohibited. These management decisions would have long-term, beneficial impacts as discussed above under Alternative A. The impacts on recreation user groups would be similar to the impacts discussed under Alternative A.

Under these alternatives, the 2,146-acre Alkali Ridge National Historic Landmark would be managed to preserve cultural-recreational resources by prohibiting surface disturbing activities that could adversely affect those resources. The beneficial impacts on the resource and on recreational users would be similar to the impacts discussed under Alternative A but to a greater degree, because more limitations would be placed on activities that could potentially threaten the landmark's cultural-recreational resources.

Alternative C

The management decisions under this alternative would be similar to those discussed under Alternative A, except that an RMP-consistent cultural resource management plan would be written for the area and some limits would be placed on surface disturbing activities. The impacts on cultural-recreation resources and recreation user groups would be similar to those discussed under Alternative A because the management decisions are similar.

The impacts on the Alkali Ridge National Historic Landmark would be similar to those discussed under Alternative B because the proposed management decisions are similar.

Alternative D

Under Alternative D, the area would not be designated as a cultural ACEC, but an RMP-consistent cultural resource management plan would be written for the area. The impacts on cultural recreation resources would be adverse in the long-term because the management decisions under this alternative do not limit potential surface disturbing activities that could

adversely impact cultural resources, particularly livestock grazing impacts and watershed improvement projects. The impacts on sight-seeing recreation resource user groups would be adverse in the long-term because the potential degradation of cultural resources under this alternative would reduce the recreational opportunities for viewing cultural recreational resources. Compared to Alternative A, this alternative would be more adverse in the long-term for recreational resources because, until a management plan was approved for managing the area's cultural resources, this alternative provides fewer resource protection management decisions than Alternative A.

The impacts on the Alkali Ridge National Historic Landmark would be similar to those discussed under Alternative B because the proposed management decisions would be similar.

4.3.10.3.13.2. Bridger Jack Mesa ACEC

Alternative A

Under Alternative A, Bridger Jack Mesa lies within a WSA, with management decisions that are consistent with the preservation of wilderness values, including ACEC near relict vegetation values. The impacts of this alternative's management decisions on recreation resources would continue to be beneficial in the long-term because the resource would be protected. Non-mechanized user groups would continue to benefit from opportunities for dispersed camping and hiking, backpacking, and equestrian activities within the WSA's pristine and undeveloped landscape. Motorized OHV, mountain biking, specialized, and scenic driving user groups would continue to be adversely impacted by the lack of recreational opportunities within the WSA because of IMP-imposed restrictions on surface disturbances.

Alternatives B–E

The impacts on recreation resources and on resource users would be the same as discussed under Alternative A because the area lies within a WSA.

4.3.10.3.13.3. Butler Wash North ACEC

Alternative A

Under Alternative A, the 16,985-acre Butler Wash ACEC lies within a WSA, with management decisions that would be consistent with the preservation of wilderness values, including ACEC scenic values. The impacts of this alternative's management decisions on recreation resources and user groups would be negligible because the area is and would continue to be protected to preserve wilderness and scenic values.

Alternatives B–E

The impacts on recreation resources and on resource users would be the same as discussed under Alternative A because the area lies within a WSA.

4.3.10.3.13.4. Cedar Mesa ACEC

Alternative A

Alternative A would continue to manage the 296,425-acre Cedar Mesa ACEC for cultural, recreational, and primitive/natural area values. Management decisions under this alternative

would permit short-term impacts to recreational resources from surface disturbances that include rangeland and wildlife habitat improvements, as well as fire suppression to protect life and property. Areas open to mineral entry and disposal of mineral materials could have long-term surface disturbance-related impacts on recreation within the ACEC by reducing the recreational opportunities for sight-seeing in areas of high scenic quality. Management decisions that limit OHV use to designated trails that limit or prevent impacts to cultural resources, manage areas for primitive or non-motorized use, and manage the scenic highway corridor would have long-term, beneficial impacts on mechanized and non-mechanized recreational resource users because the recreational opportunities for scenic driver, motorized, and non-mechanized resource users would be maintained.

Alternative B

Under Alternative B, the 306,742-acre Cedar Mesa ACEC would be managed for its cultural resources as a cultural-ACEC. Management decisions under this alternative would close the area to dispersed camping, require camping waste be packed out, and limit day use and overnight camping permits to protect cultural resources. The impacts on recreational resources would be beneficial in the long-term because the resources would be protected from surface disturbances. Short-term impacts to recreational resources would be similar to those discussed under Alternative A. The impacts on recreational resource user groups would be a long-term reduction in the recreational opportunities for motorized and non-motorized resource users because of the restrictions placed on motorized use and the prohibitions on dispersed camping. Compared to Alternative A, this alternative would have more long-term beneficial protection-related impacts on recreational resources. This alternative would also have long-term impacts that are more adverse to recreational resource users because of the reduced opportunities for motorized and non-mechanized recreational experiences within the ACEC.

Alternative C

Under this alternative, the long-term beneficial impacts to recreational resources would be similar to those discussed under Alternative B because, though the area would not be designated as a cultural-ACEC, the management decisions applied to the area through the proposed designation as a 375,734-acre CSRMA would be similar. The long-term impacts to recreational users would be similar to Alternative B, but to a lesser degree because the area would be open to dispersed camping. Compared to Alternative A, this alternative would have more long-term, beneficial protection-related impacts on recreational resources, but it would also have more long-term, adverse impacts on recreational resource users because of the reduced opportunities for motorized recreational experiences.

Alternative D

The impacts of this alternative would be similar to those discussed under Alternative C because the management decisions are the same as proposed for Alternative C: the area would not be designated as a cultural ACEC, but would instead be managed under proposed designation as a 375,734-acre CSRMA, with similar management decisions to those proposed under Alternative B.

Alternative E

Under this alternative, the management decisions would be similar to Alternative B, except that approximately 60,049 acres (19% of the proposed ACEC) would be managed for protection of wilderness characteristics within the proposed ACEC. The impacts to recreational resources would be similar to Alternative B, but to a greater degree, from the additional surface protection of wilderness characteristics areas under VRM Class I management objectives that would preserve scenic quality, soils, vegetation, and cultural values for all user groups. Compared to Alternative A, this alternative would have more beneficial impacts on recreational resources and users by maintaining more area for non-mechanized opportunities.

4.3.10.3.13.5. Dark Canyon ACEC

Under all of the alternatives, the area proposed as the Dark Canyon ACEC lies within a WSA, with management decisions that are consistent with the IMP that stipulates preservation of wilderness values. The impacts of this alternative's management decisions on recreational resources and recreational resource users would be beneficial in the long-term because the area is and would continue to be protected and managed to preserve wilderness values. Low-impact, non-mechanized recreational activities (as discussed in Section 4.3.10.3.10.4) would continue to be permitted, with continued long-term, beneficial impacts to these users.

4.3.10.3.13.6. Hovenweep ACEC

Alternative A

Under Alternative A, the impacts on recreational resource and recreational resource users would be similar to the analysis discussed under the Cedar Mesa ACEC for Alternative A because the management decisions applicable to recreation are similar.

Alternatives B, C, and E

The impacts of these alternatives on recreation would be similar to those discussed under Alternative A because the management decisions are similar.

Alternative D

Under this alternative, the Hovenweep ACEC would not be established and management of the area would be identical with surrounding lands. The area would be available for minerals development and open to watershed and vegetation treatments that would not impact sensitive cultural sites. The impacts of management decisions on recreational resources would be short-term and long-term. Short-term impacts to recreational resources would be produced by surface disturbances from vegetation and watershed treatments that would temporarily degrade scenic quality and reduce the recreational opportunities for sight-seeing. Long-term impacts to recreational resources would be produced by the paucity of management decisions to protect the area's cultural resources from surface disturbances while permitting minerals development, livestock grazing, and campfires. The impacts on recreational resource users would be beneficial in the long-term for recreational user groups that seek opportunities for OHV and non-motorized trail use because there would be few limitations on trail development. The impacts on recreational users who seek opportunities for solitude, undisturbed and undeveloped natural landscapes, and remoteness would be adverse in the long-term because under this alternative the area would not be managed to preserve these recreational qualities. Compared to Alternative A,

this alternative would have more adverse impacts because fewer resource protection-related management decisions would be specified. The impacts on recreational resource users would be similar to Alternative A.

4.3.10.3.13.7. Indian Creek ACEC

Alternative A

Under this alternative, the 13,100-acre Indian Creek ACEC would be managed to protect visual quality. Management decisions would permit minimal surface disturbances within the area (e.g., fire suppression to protect life and property, livestock grazing, geophysical activities). The area would be closed to OHV use. Recreational activities would be restricted if adaptive management determined that scenic values were being degraded. These management decisions would have long-term, protection-related beneficial impacts on recreational resources. The impacts on recreational user groups would be variable: there would be long-term, beneficial impacts on non-mechanized groups because the area's management would be consistent with the recreational expectations of these groups (i.e., scenic quality, a pristine environment, natural sights and sounds, solitude); the impacts on mechanized recreational users would be adverse in the long-term because the recreational opportunities for these groups would be limited.

Alternative B

The impacts on recreation under this alternative would be similar to those discussed under Alternative A because the management decisions to preserve scenic quality would be similar. Compared to Alternative A, this alternative would have fewer beneficial impacts because less area would be protected for recreation-related scenic quality (a 36% reduction when compared to Alternative A.

Alternative C

This alternative would have similar impacts as Alternative B on recreational resources because the management decisions are similar. The impacts on non-mechanized recreational users would be beneficial in the long-term because dispersed camping would be permitted within the Indian Creek Corridor. The impacts on mechanized recreational users would be similar to Alternative B. Compared to Alternative A, this alternative would have fewer beneficial impacts because less area would be protected for recreation-related scenic quality (a 71% reduction when compared to Alternative A).

Alternative D

Under this Alternative, the Indian Creek ACEC would not be established. The area would not be managed to maintain scenic quality, but would be managed for consistency with the surrounding lands. Those areas that lie within WSAs would have recreation impacts similar to the impacts discussed under Alternative B because WSA resource protection stipulations would preserve scenic quality and non-mechanized recreational resources. Recreational resources in those areas within the Indian Creek corridor that lie outside of WSAs would not be managed for their protection, which would be an adverse long-term impact. The affects on recreational user groups would be variable: non-mechanized user groups would be adversely impacted in the long-term because management of non-WSA areas would be inconsistent with this group's recreational expectations that include an undeveloped and natural landscape, high scenic quality, natural sights and sounds, and a sense of remoteness and solitude; motorized, mountain biking, and

specialized recreational user groups would be beneficially impacted in the short-term because the reduced restrictions on recreational activities within non-WSA areas would create more recreational opportunities for these users. However, the long-term impacts on all resource user groups would include an increased likelihood for resource use conflicts from expected increasing numbers of users combined with the reduced limitations on recreational resource use (see Section 4.1.1.3.10.5 above). Compared to Alternative A, this alternative would be more adverse in the long-term because there would be less protection of recreational resources and an increased likelihood in the long-term for unsatisfying recreational experiences for all recreational resource users.

Alternative E

The impacts of this alternative on recreational resources and users would be the same as discussed under Alternative B because the management decisions are the same, except that approximately 3,887 acres (30% of the proposed ACEC) would be managed to preserve wilderness values within the non-WSA areas with wilderness characteristics that lie within the proposed ACEC. The impacts on recreational resources and users of these areas would be the same as discussed under Alternative A because management to maintain a high level of visual quality and to preserve a pristine environment would be applied under both alternatives.

4.3.10.3.13.8. Lockhart Basin ACEC

Alternative A

Under this alternative Lockhart Basin would not be managed as an ACEC. However, the existing Indian Creek ACEC (designated to maintain scenic quality) and the Indian Creek WSA lie partially within the Lockhart Basin area. The area would be managed to limit recreational use if adaptive management determined that visual resource values were being degraded. The area would be open for mineral leasing (subject to NSO leasing stipulations), closed to OHV use, woodland harvesting would be prohibited, and the area would continue to be designated as VRM Class III. The impacts of these management decisions on recreational resources would be adverse in the long-term because, while permitted surface disturbances within the area would be monitored and managed to ensure that scenic quality would not exceed VRM Class III management objectives, the area has been inventoried as having VRM Class II scenic quality and sensitivity. Designating the area as VRM Class III would permit scenic quality degradation, which would have long-term, adverse impacts on recreational users who seek opportunities that include high scenic quality both within the basin and those areas that overlook the basin (see Visual Resources Section 4.3.18.3.1). The long-term impacts on motorized off-road recreational users include no access to 8,642 acres of land that lie within the Indian Creek ACEC. However, there would be increased long-term opportunities for scenic drivers, mountain biking, and non-mechanized users to enjoy scenic viewing, natural sounds, and solitude.

Alternative B

Under Alternative B Lockhart Basin would be designated as a 47,783-acre ACEC and as VRM Class I for management of scenic quality. All surface disturbing activities would be prohibited, but the area would be open for campfires. The impacts to recreational resources and user groups would be beneficial in the long-term because management under the VRM Class I objectives would restrict surface disturbing activities or actions that would impair visual resources and scenic quality to very low levels of impact. The impacts on user groups that seek quiet, solitude,

and remoteness in undisturbed landscapes (i.e., hikers, mountain bikers, scenic drivers) would benefit in the long-term because opportunities would be available that would likely meet their expectations. There would be few opportunities for other mechanized or specialized user groups, so the impacts on these users would be adverse in the long-term from limited recreational opportunities. Compared to Alternative A, this alternative would be more beneficial for those groups seeking quiet and solitude, with impacts to other user groups similar to those discussed under Alternative A.

Alternative C

Under this alternative, Lockhart Basin would not be designated as a scenic ACEC. The area would be designated as VRM Class II and Class III, available for livestock use, and open for mineral leasing (subject to standard and timing and controlled surface use leasing stipulations). The impacts to recreation resources would be adverse in the long-term for all recreational resource user groups in the designated VRM Class III area because visual objectives would permit surface disturbances throughout the area from recreational and non-recreational activities that would impact visual/scenic quality both from within the basin and from recreational areas that overlook the basin (see Visual Resources Section 4.3.18.3.1).

Compared to Alternative A, this alternative would be more adverse in the long-term for recreational resources and for all recreational resource users in the VRM Class III-designated area because the visual resource objectives under this alternative would permit more surface disturbance-related impacts to recreation resources that would likely diminish the quality of recreational experiences in the area.

Alternative D

The impacts under this alternative would be the same as discussed under Alternative C because the management decisions are the same.

Alternative E

Under this alternative, management decisions would be the same as those discussed under Alternative B, except that approximately 21,298 acres (45% of the proposed ACEC) with non-WSA wilderness characteristics that lie within the ACEC boundary would be protected from surface disturbances through VRM Class I designation and under minerals leasing prohibitions. The impacts on recreation would be the same as Alternative B because the management decisions under Alternative E would also protect the proposed ACEC under VRM Class I management objectives and through prohibitions on surface disturbances.

4.3.10.3.13.9. Lavender Mesa ACEC

Alternative A

Under this alternative, the 649-acre Lavender Mesa ACEC would continue to be maintained to manage the relict vegetation on the mesa top and managed for primitive, non-motorized recreation. The management decisions would minimize surface disturbing activities within the ACEC; would exclude OHV, pack animal, and saddle stock use; and would limit recreational activities that would potentially degrade scenic or cultural resource values. These decisions would have long-term beneficial preservation-related impacts on recreational resources because scenic quality, cultural resources, and an undisturbed environment are valued components of the

recreational experience. The impacts on scenic driver, mountain biking, motorized OHV, and most specialized recreational user groups would be negligible in the long-term because, though mountain biking and motorized OHV recreational opportunities and activities would be excluded from the ACEC, the ACEC is physically inaccessible to mechanized use. The impacts on non-mechanized recreational users and specialized recreation climbing users would be beneficial in the long-term because the management decisions would maintain the recreational opportunities and expectations that are preferred by this group: natural sights and sounds, remoteness, isolation, and a pristine, undeveloped environment.

Alternative B

The impacts of management decision on recreational users under this alternative would be similar to those discussed for Alternative A because the size of the ACEC and the management decisions are similar. Compared to Alternative A, this alternative would permit a greater degree of recreational resource degradation: recreational activities would be restricted or limited only if vegetation communities were being adversely affected.

Alternative C

The impacts of management decision on recreational users under this alternative would be similar to those discussed for Alternative A because the size of the ACEC and the management decisions are similar. Compared to Alternative A, this alternative would have long-term impacts on recreational resources as discussed under Alternative B above.

Alternative D

Under this Alternative, the ACEC would not be established and would be managed consistent with the surrounding area. Mountain biking and motorized recreation on designated routes would be permitted on the mesa top but, as noted above, the mesa top is inaccessible to these recreational activities. The impacts on recreational resources under this alternative would be potentially adverse in the long-term because there would be very few limitations or restrictions on potential surface disturbing activities (e.g., unlimited dispersed camping; lack of waste management) and these surface disturbances would potentially degrade recreational resources. Management decisions under this alternative would also not limit surface disturbance-related resource degradation by those users who access the mesa top (climbers, non-mechanized users), which could further exacerbate surface disturbances on the mesa top. In the long-term, potential recreational resource degradation and the lack of resource protection would likely degrade the recreational experience for those accessing the mesa top. Compared to Alternative A, this alternative would have long-term impacts that are more adverse to recreation resources because management decisions would not preserve the recreational resources on Lavender Mesa.

Alternative E

Under Alternative E, the proposed 649-acre ACEC would be protected as an area with non-WSA wilderness characteristics. The impacts to recreation resources would be beneficial in the long-term because surface disturbance restrictions to preserve wilderness values on the mesa would be either prohibited or greatly limited. The impacts to resource users would be comparable to the discussion under Alternative A because the level of resource preservation and allowed recreational activities would be the same.

4.3.10.3.13.10. Shay Canyon ACEC

Alternative A

This alternative would continue to manage the 3,561-acre Shay Canyon ACEC for conservation of cultural resources. The area would permit limited OHV use (along designated routes) and would manage the canyon for permanent protection of sensitive cultural sites, but would have no other specified limits or restrictions on recreational activities. The impacts of this alternative's management decisions on recreational resources would be minor because: (1) the area would be managed under VRM Class I objectives, so long-term degradation of scenic quality from surface disturbances would be minimal; (2) OHV-related surface disturbances would be limited; and (3) recreation-related cultural resources would be protected. The impacts on recreational resource users would also be minor because recreational opportunities for mechanized and non-mechanized groups would be available within the ACEC.

Alternative B

Under Alternative B, 119 acres would be designated as the Shay Canyon ACEC to manage the cultural resources within the canyon. The area would be closed to camping, motorized OHV and mountain biking recreational use would be limited to designated routes, hiking would be limited to designated trails, and recreation would be limited if cultural resources were adversely impacted by these activities. The impacts on recreational resources would be beneficial in the long-term because management decisions under this alternative would prohibit surface disturbances within the proposed ACEC (e.g., NSO for oil and gas development, no campfires, restricted grazing, no surface disturbing vegetation or wildlife treatments). The impacts on recreational use within the ACEC would be adverse in the long-term because management decisions to protect cultural resources would limit the recreational opportunities for mechanized and non-mechanized recreation within the proposed ACEC. Compared to Alternative A, this alternative would have greater long-term, adverse impacts on recreational resources and on recreational opportunities within the ACEC because it would: (1) reduce the size of the ACEC to approximately 2% of the acreage managed under Alternative A, so specific ACEC-related management prescriptions for the protection of recreational resources would be reduced; and (2) reduce the recreational opportunities within the ACEC because the 119-acre proposed ACEC would be too small to accommodate the range of recreational activities presently permitted under Alternative A.

Alternative C

The impacts of this alternative would be similar to those discussed under Alternative B because the management decisions are the same.

Alternative D

Under this alternative, the Shay Canyon ACEC would not be established but would be managed consistent with the surrounding lands. Management decisions would limit OHV use to designated trails, but management of the area under VRM Class III objectives would allow surface disturbances from other land use activities. In the long-term, recreational resources would potentially become degraded through surface disturbing minerals exploration and development, livestock grazing, watershed treatments, and fuels treatments. The impacts on recreational resource users would be beneficial in the short-term because opportunities would

become available for a range of mechanized and non-mechanized recreational activities. In the long-term, the lack of management prescriptions to protect recreational resources would allow those resources (i.e., cultural, wildlife, vegetation, and scenic quality) to become degraded, which would reduce the likelihood of satisfying recreational experiences for all resource user groups. Compared to Alternative A, this alternative would have impacts that are more adverse because management decisions would not preserve the recreational resources or recreational opportunities within the Shay Canyon area.

Alternative E

The management decisions under this alternative would be similar to those discussed under Alternative B, except that approximately 99 acres (83% of the proposed ACEC) would be managed to protect wilderness characteristics within the proposed ACEC. The impacts would be similar to those discussed under Alternative B because management decisions that prohibit surface disturbances within the canyon would be similar. The adverse impacts on recreation and user groups would be the same as Alternative B, for the same reasons: the proposed ACEC is too small an area to accommodate the range of opportunities available under Alternative A.

4.3.10.3.13.11. San Juan River ACEC

Alternative A

The 15,100-acre San Juan ACEC would be managed under this alternative through the current management decisions for the San Juan River SRMA. Analyses of the impacts of those management decisions on recreation and on recreation user groups are shown in Section 4.3.10.3.10.1 above.

Alternative B

Under Alternative B, the San Juan ACEC would be managed as a 7,590-acre area for the protection of scenic, cultural, wildlife, and natural system values. Management actions would limit surface disturbances within the proposed ACEC boundaries: vehicle access and motorized OHV and mountain biking activities would be restricted to designated routes, and trails to cultural sites would be designated, as needed, to protect resource values; recreational activities would be limited or restricted if those activities were determined to adversely impact wildlife; camping sites would be closed or restricted, as necessary, to protect resource values; and climbing aids to access cultural and raptor nesting sites would be prohibited. The management decisions under this alternative would have long-term beneficial impacts on recreational resources because recreational resource values that include scenic quality, wildlife, and cultural resource components would be preserved or managed to ensure minimal impacts.

The impacts on motorized OHV, mountain biking, non-mechanized, and specialized recreational user groups would be a long-term reduction or limitation of recreational opportunities within the proposed ACEC if recreational activities were determined to have adverse impacts on cultural, scenic, and wildlife resource values. The impacts of ACEC management decisions on river users would be minor to negligible because the recreational opportunities for this group would not likely be affected by ACEC resource use restrictions: river use would be limited by group size and group numbers under the proposed SRMA (see Section 4.3.10.3.10.1), with overnight camping at designated campsites.

Compared to Alternative A, this alternative would manage 50% fewer acres along the San Juan River corridor for the preservation of recreational values and place more limitations on San Juan River corridor recreational use. However, this alternative would manage the acreage within the proposed ACEC with greater restrictions on surface disturbing activities than Alternative A, which would provide more long-term protection to those resources that contribute to the river user's recreational experience.

Alternative C

The impacts of proposed management decisions on recreation under this alternative would be the same as discussed under Alternative B because the proposed decisions would be the same.

Alternative D

Under Alternative D, the San Juan River ACEC would not be designated. However, the management decisions under this alternative would be similar to those described under Alternative B, with similar impacts to recreational resources and user groups. Compared to Alternative A, this alternative would have impacts that are similar to those discussed under Alternative B.

Alternative E

The impacts on recreational resources and users would be the same as discussed under Alternative B because the management decisions are the same, except that 2,155 acres (28% of the proposed ACEC) of non-WSA lands with wilderness characteristics that lie within the ACEC would prohibit any surface disturbances that could potentially degrade the existing wilderness values within these areas. The impacts of non-WSA wilderness characteristics area protection on recreational resources and users would be the same as the discussion under Alternative B because the ACEC would be managed under alternative decisions to ensure that there would be minimal impacts to visual, cultural, wildlife, and natural values within the ACEC.

4.3.10.3.13.12. Valley of the Gods ACEC

Alternative A

This alternative would manage the 31,387-acre Valley of the Gods (within the current Cedar Mesa ACEC) for scenic quality preservation through VRM Class I designation with surface disturbances compatible with this visual resource objective. The impacts on recreational resources would continue to be beneficial in the long-term because the VRM Class I limitations on surface disturbances would continue to preserve recreational resources (e.g., OHV use would be limited to designated routes, potential scenic quality-degrading minerals activities would require visual mitigation and/or approved plans of operation). The impacts on scenic driver, mechanized and non-mechanized recreational resource user groups would continue to be beneficial in the long-term because recreational opportunities would continue to be available for these groups, with the likelihood of satisfying scenic quality-related recreational experiences because management decisions would continue to preserve the high scenic quality of the area.

Alternative B

This alternative would manage the Valley of the Gods as a 22,863-acre ACEC for the preservation of scenic quality. The impacts on recreational resources would be similar to those discussed for Alternative A because the area would continue to be protected under VRM Class I

management objectives with a similar level of potential surface disturbances to recreational resources. The impacts on recreational user groups would be similar to the discussion under Alternative A because the recreational opportunities for scenic driving, motorized OHV, mountain biking, and non-mechanized users would be similar. This alternative would provide recreation-related scenic quality protection to 73% of the area that would be protected under Alternative A. Consequently, the amount of recreational opportunities described would be proportionally less than those provided under Alternative A.`

Alternative C

This alternative would have impacts similar to those discussed under Alternative B because the management decisions are the same.

Alternative D

Alternative D would not designate the 22,863-acre Valley of the Gods as an ACEC for the protection of scenic quality and the area would be managed under VRM Class III objectives. The area would be for a lower level of visual/scenic quality (i.e., more surface disturbances would be permitted), with potentially adverse impacts on those recreational opportunities that include a high scenic quality component. The likelihood of satisfying recreational experiences for scenic driver, mountain biking, motorized, and non-mechanized user groups within this area would be diminished in comparison with Alternative A.

Alternative E

This alternative would manage the proposed ACEC under decisions similar to Alternative B, except that approximately 20,743 acres (91% of the proposed ACEC) within the ACEC would be managed to protect wilderness characteristics. The impacts would be the same as discussed under Alternative B because management decisions to protect wilderness characteristics (designation as VRM Class I, closed to mineral leasing and minerals disposal) would also be applied to the entire ACEC under that alternative.

4.3.10.3.14. Impacts of Special Designation–Wild and Scenic Rivers Decisions on Recreation

4.3.10.3.14.1. Colorado River Segments

Alternative A

Under Alternative A, Segment #1 (a 2.2-mile segment) was not evaluated for eligibility under the NWSRS. However, the river segment would continue to be managed according to floodplains and riparian/aquatic areas guidelines described in the current RMP, which includes limiting OHV use to designated trails, NSO minerals leasing, and prohibitions on surface disturbances caused by mountain biking and motorized OHV equipment (except for fire management or geophysical work). The impacts on recreational resources would be beneficial in the long-term because recreation-related restrictions or limitations would continue to be imposed on the river segment to protect any ORVs that the river segment may possess. The impacts on mountain biking, motorized, river floating, and non-mechanized resource users would be beneficial in the long-term because recreational opportunities for these user groups would continue to be available under current management decisions.

Colorado River Segments #2 and 3 (5.5 and 6.5 miles, respectively) were determined to be eligible, and would be managed to preserve any ORVs that the segments might possess. The impacts on recreation resources would be beneficial in the long-term because recreation resources (e.g., scenic, wildlife, cultural resources) would be preserved. The impacts on motorized, mountain biking, river floating, and specialized recreational user groups would be negligible in the long-term because, though river segment eligibility would continue to prohibit surface disturbances that could potentially degrade the ORVs for these river segments, recreational opportunities would continue to be available for these user groups. The impacts on non-mechanized and river floating recreational use would continue to be beneficial in the long-term because protection of the river corridor from surface disturbances along these segments would be compatible with the recreational expectations of these users, which includes a natural-appearing environment and little evidence of human surface disturbances along the river corridor. The impacts on mountain biking and motorized users would also be beneficial in the long-term because use of designated trails along the river corridor would continue.

Alternatives B and E

Under Alternatives B and E, Colorado River Segment #1 would be recommended as suitable for classification as recreational and would be managed under VRM Class III objectives. The impacts on recreational resources would be beneficial in the long-term because recreational ORVs that include cultural, wildlife, fishery, scenic, and ecological resources (see Section 3.14.2.2) would be preserved. The impacts on recreational resource users would be variable. Management decisions under these similar alternatives would have long-term beneficial impacts on specialized, mountain biking and motorized resource users because recreational opportunities would be available along the river corridor for trail use, and they would be managed under VRM Class III objectives. Development and roads already exist on the northern side of the segment in the Moab FO planning area (see Appendix H, Special Designations). The impacts on non-mechanized and river floating user groups would beneficial in the long-term because the recreational opportunities for experiencing solitude, remoteness, natural sights and sounds, and an undeveloped and pristine, natural-looking environment would be partially preserved under the Recreation category. Compared to Alternative A, these alternatives would permit a greater degree of surface disturbance under VRM Class III management objectives that would potentially degrade recreation resources, but would also provide more opportunities for recreational resource users.

Colorado River segment #2 would be recommended as suitable for classification as scenic and would be managed under VRM Class II objectives. The impacts would be beneficial because river ORVs would be preserved. Increased mountain biking and motorized recreational opportunities would have long-term, beneficial impacts on user groups that seek those opportunities because some surface disturbances along the river corridor would be permitted. The increased recreational opportunities for solitude, isolation, and naturalness would have beneficial impacts on recreational users who seek these experiences. Compared to Alternative A, these alternatives would have impacts that are more beneficial to recreation resources because river corridor ORVs would be protected.

Segment #3 would be recommended as suitable for classification as scenic, would be managed under VRM Class I objectives, and would be closed to OHV use. The impacts of these management decisions would be beneficial in the long-term for recreational resources because

surface disturbances within the river corridor would be minimized. Under these alternatives, there would be a long-term reduction in recreational opportunities for mountain biking and motorized resource user groups because of management under the VRM Class I objectives that permit very low surface disturbances impacts. The impacts on non-mechanized and river floating users would be an increased likelihood of satisfying recreational experiences from the elimination of OHV travel (and reduced resource use conflicts with this activity) within the river corridor. Compared to Alternative A, this alternative would be more beneficial for non-mechanized and river floating users and more adverse for mountain biking and motorized users.

Alternative C

Under this alternative, Segment #1 would be recommended as not suitable under the NWSRS. The impacts on recreational resources and on recreational resource users would be adverse in the long-term because the river corridor would be managed under minerals timing and controlled surface use leasing stipulations that could have long-term, adverse surface disturbance-related impacts on recreational scenic quality within the river corridor from potential minerals development.

Under this alternative, the impacts on Colorado River Segment #2 would be similar to those discussed under Alternative B because the management decisions are similar. There would be long-term, adverse impacts to river floating users from resource use conflicts with permitted motorized boat use within the river corridor, which would diminish the recreational experience for those river floaters who seek non-mechanized, natural sights and sounds. Compared to Alternative A, this alternative would be less beneficial for recreational users because of the increased likelihood of recreational use conflicts.

The impacts on Colorado River Segment #3 would be similar to those discussed under Alternative B because the management decisions are similar. There would be impacts to river floating users as discussed under Segment #2 above because motorized boat use would be allowed. Compared to Alternative A, this alternative would have impacts similar to those discussed under Alternative B. Compared to Alternative A, this alternative would have similar impacts on recreational river use.

Alternative D

Under Alternative D, the Colorado River segments would be recommended as not suitable under the NWSRS, which would have long-term impacts on recreational river use as discussed for Segment #1 under Alternative C because the segments would be managed under controlled surface use mineral leasing stipulations. Compared to Alternative A, this alternative would be more adverse in the long-term on recreational river opportunities because management decisions would provide fewer protections to recreational resources, and the likelihood of recreational resource degradation and unsatisfying recreational experiences for river floaters and non-mechanized users along the river corridor would be increased.

4.3.10.3.14.2. Indian Creek

Alternative A

Under this alternative Indian Creek was not evaluated for eligibility under the NWSRS, but still would be managed according to the floodplains and riparian/aquatic areas guidelines described in the current RMP. The impacts on recreational use would continue to be beneficial because

recreational resources would continue to be protected under current RMP management decisions and because a range of recreational opportunities for mountain biking, motorized, and non-mechanized groups would continue to be available within the creek corridor.

Alternative B

Alternative B would manage the proposed 4.8-mile segment of Indian Creek as recommended suitable for classification as recreational. The segment would be managed as VRM Class III objectives, with OHV travel limited to designated routes. The impacts on recreational resources would beneficial in the long-term because recreation-related ORVs (i.e., cultural resources) would be protected. The impacts on recreational resource users would also be beneficial in the long-term because more recreational opportunities for motorized, mountain biking, and non-mechanized resource users would become available within the creek corridor under VRM Class III class objectives management, while continuing to protect the creek riparian and floodplain area. Compared to Alternative A, this alternative would be more beneficial for recreation because the creek would be managed with more protection of recreational resources.

Alternative C

Alternative C would manage Indian Creek as recommended not suitable. This alternative would have long-term, adverse impacts on recreational resources because the Monticello FO eligibility study determined that the creek possesses recreation ORVs, and a non-suitability recommendation would increase the likelihood that the creek's ORVs would be degraded and diminished by surface disturbing activities. Under this alternative, the area beyond the creek riparian and floodplain would be managed under standard stipulations and timing and controlled surface use mineral leasing stipulations, which would likely decrease the quality of recreational resource users' experience, as well as potentially resulting in long-term surface disturbance-related degraded or diminished recreational resources. Compared to Alternative A, this alternative would be less beneficial because it would manage the creek segment with fewer recreational resource protection measures.

Alternative D

Alternative D would manage Indian Creek as recommended not suitable. This alternative would have similar long-term impacts on recreational resources and users as discussed under Alternative C because the segment would be managed under standard mineral leasing stipulations.

Alternative E

Under Alternative E, the impacts on recreation would be similar those discussed under Alternative B, except that 0.6 miles of the Indian Creek river corridor would be managed under VRM Class I objectives to preserve non-WSA lands with wilderness characteristics. Protecting the 0.6-mile segment of river would provide additional protection to recreational resources and enhance opportunities for non-mechanized users by prohibiting surface disturbances that could degrade the area's wilderness values. The impacts to motorized, mountain biking, and specialized user groups would be the same as discussed under Alternative B because these activities would still be limited to designated routes within the river corridor. Compared to Alternative A, this alternative would have more beneficial impacts to recreational resources and users, as discussed under Alternative B.

4.3.10.3.14.3. Fable Valley

Alternative A

Under Alternative A, Fable Valley was not evaluated for eligibility under the NWSRS. The impacts on recreational resources and users would continue to be beneficial because the area lies within the Dark Canyon WSA and has been and would continue to be managed under the IMP for protection of its wilderness characteristics. The impacts on recreation resources and non-mechanized recreational opportunities would continue to be beneficial in the long-term, with opportunities for satisfying hiking, backpacking, and equestrian experiences within a pristine, undeveloped landscape. The opportunities for motorized OHV, mountain biking, specialized, and scenic driving groups would continue to be adverse in the long-term because IMP-imposed stipulations would continue to prohibit mechanized use and limit surface disturbances in these areas.

Alternatives B–E

The action alternatives impacts would be the same as discussed under Alternative A.

4.3.10.3.14.4. Dark Canyon

Alternative A

Under Alternative A, Dark Canyon was not evaluated for eligibility under the NWSRS. The impacts on recreation would be the same as discussed under Fable Canyon: the proposed wild stream segment lies within the Dark Canyon WSA and recreation resources have been and would continue to receive protection under the IMP.

Alternatives B–E

The impacts of the action alternatives would be the same as discussed under Alternative A.

4.3.10.3.14.5. San Juan River Segments

Alternative A

Under this alternative the 8.5-mile San Juan River Segment #1 was not evaluated for eligibility under the NWSRS, with impacts similar to those described under Colorado River Segment #1 for Alternative A.

Segment #2. This 10-mile segment was determined to be eligible and would be managed under VRM Class I objectives with minimal surface disturbances, OHV use limited to designated trails, and withdrawn from mineral entry. The impacts on recreational resources and users would continue to be beneficial in the long-term because recreational resources within this segment of the river corridor would be protected. The impacts on recreational user groups would beneficial in the long-term because recreational opportunities would continue to be available to mountain biking, motorized, river floating, and non-mechanized users.

Segments #3–#5. The impacts for these segments (totaling 34.8 miles) would be the same as described for Segment #2 because the management decisions would be the same.

Alternatives B and E

Segment #1. Under Alternatives B and E, this segment would be recommended as suitable for recreational classification, managed under VRM Class III objectives, and subject to NSO minerals leasing within the floodplain and riparian corridor. River ORVs (i.e., historic, fish, and wildlife) would be beneficially protected in the long-term under this classification, but it should be noted that, though these similar alternatives propose to manage the segment as suitable for classification as recreational, the eligibility study conducted by the BLM Monticello FO (see Appendix H) found that "recreation and ecological values are not ORVs found in new Segment #1" because of current uses and development along this river segment. Thus, the impact on recreational resources would be negligible to minor because this segment possesses few ORVs. A comparison of this alternative to Alternative A shows that the impacts to recreation would be similar because recreational resources have not been well preserved along this segment.

Segment #2. This segment would be recommended as suitable for recreational classification, managed under VRM Class III objectives, and subject to NSO leasing within the riparian areas and floodplain. The impacts of these management decisions on recreation resources would be beneficial in the long-term because recreation-related ORVs would be protected and recreational opportunities for river floating, mountain biking, motorized OHV, and non-mechanized activities would be maintained. Compared to Alternative A, this alternative would be less beneficial because Alternative A provided a greater degree of protection to recreational resources than this alternative.

Segment #3. This 13.3-mile segment would be recommended as suitable for wild classification, managed under VRM Class I objectives, closed to OHV use, and proposed for mineral withdrawal. These impacts on recreational resources would be beneficial in the long-term because of the high degree of protection proposed for this river segment. The impacts on user groups would be variable: closing the segment to motorized OHV use would reduce the recreational opportunities for this user group; and river floaters and non-mechanized users would benefit from the proposed management decisions because removing OHVs from the river corridor would likely enhance the recreational experience where solitude, a sense of remoteness, natural sights and sounds, and a pristine river corridor environment is expected. Compared to Alternative A, these alternatives would be more beneficial for non-mechanized user and less beneficial for motorized OHV users. The impacts of these alternatives on recreational resources would be similar to Alternative A.

Segment #4. This 4.2-mile segment would be recommended as suitable for recreation classification, managed under VRM Class III objectives, and subject to NSO leasing within the riparian areas and floodplain. The impacts to recreation would be similar to those discussed under Segment #2 because the management decisions are the same.

Segment #5. The impacts to recreation along this 17.3-mile segment would be similar to those discussed under Segment #3 because the management decisions are the same.

Alternative C

Segment #1. Under this alternative, Segment #1 would be recommended as not suitable for classification under the NWSRS. The impacts on recreational resources and users would be negligible because, as mentioned above under Alternative B, this river segment was not

considered eligible by the Monticello FO and it did not possess recreational ORVs. Compared to Alternative A, this alternative would have similar impacts.

Segment #2. This segment would be recommended as not suitable. The impacts on recreational resources would be adverse in the long-term because the Monticello FO eligibility study determined that this segment does possess recreational ORVs, so a status of non-suitability would deny NWSRS protection to these recreation-related resource values. A lack of recreational resource protection would increase the likelihood of surface disturbance-related degradation of recreational ORVs with an associated diminishing of recreational experiences and opportunities on all recreational resource users within the river corridor. The floodplain and riparian areas along the river segment would be protected under executive orders and BLM riparian management policy, but beyond these areas, the river corridor would be open to mineral development under standard leasing stipulations. Compared to Alternative A, this alternative would be more adverse to recreation resources in the long-term because it would provide less protection to these resources.

Segment #3. The impacts would be similar to those discussed under Segment #2 because the river segment was determined to possess recreational ORVs and the management decision is the same as Segment #2.

Segment #4–#5. Same as Segment #2.

Alternative D

Segment #1. Under this alternative, recreational resource within this river segment would have impacts similar to those discussed under Alternative C because the management decision is the same.

Segment #2. The impacts on recreation within this segment would be similar to those discussed under Segment #2 for Alternative C because the management decision is the same.

Segment #3–#5. Same as Segment #2, Alternative C.

4.3.10.3.14.6. Arch Canyon

Alternative A

Under Alternative A, a 6.9-mile segment of Arch Canyon was not evaluated for eligibility under the NWSRS, but would still be managed according to the floodplains and riparian/aquatic areas guidelines described in the current RMP. The impacts on recreational use would continue to be the same as those discussed under Indian Creek Alternative A because the management decisions are the same.

Alternatives B and E

Under these alternatives, the impacts would be similar to those discussed for Indian Creek Alternative B because the management decisions are the same.

Alternative C

Under this alternative, the impacts would be similar to those discussed for Indian Creek because the management decisions are the same, except that the area beyond the creek riparian areas and floodplain would be managed under standard mineral leasing stipulations.

Alternative D

The impacts under Alternative D would be similar to those discussed for Indian Creek because the management decisions are the same.

4.3.10.3.14.7. White Canyon

Alternative A

Under Alternative A, White Canyon was determined to be eligible under the NWSRS, and would be managed to preserve any ORVs that the segment might possess. The impacts on recreation would be beneficial in the long-term because recreational resources would be preserved. The impacts on specialized recreation and non-mechanized recreational user groups would continue to be beneficial because recreational opportunities would continue to be available for these users.

Alternatives B–E

Under these alternatives, White Canyon would be managed as not suitable for classification under the NWSRS because the canyon is not a free-flowing water system. Thus, White Canyon is ineligible for inclusion under the NWSRS. The impacts on recreational resources would be negligible because the action alternatives would propose designation of the area as a SRMA to protect the canyon's recreational resources and continue to provide recreational opportunities for specialized and non-mechanized recreation within the canyon. Compared with Alternative A the impacts would be similar: these alternatives would provide protection to recreational resources and provide recreational opportunities for non-mechanized and specialized user groups along the canyon rim and within the canyon.

4.3.10.3.15. Impacts of Special Designation–Wilderness Decisions on Recreation

Under all of the alternatives, WSAs would be managed consistent with the IMP until Congress releases the WSAs from wilderness review (see Section 3.14.4.4). The Monticello FO currently manages 13 WSAs to preserve their wilderness values under VRM Class I objectives. The impacts on recreation resources and non-mechanized recreational opportunities of managing these areas under the IMP would continue to be beneficial in the long term, with opportunities for satisfying hiking, backpacking, equestrian, and dispersed camping experiences within a pristine, undeveloped landscape. The opportunities for motorized OHV, mountain biking, specialized, and scenic driving groups would continue to be adverse in the long term, as IMP-imposed stipulations would continue to prohibit mechanized use and limit surface disturbances in these areas under all of the alternatives because the areas have been and would continue to be managed so that their wilderness suitability would not be impaired.

4.3.10.3.16. Impacts of Travel Decisions on Recreation

4.3.10.3.16.1. OHV Areas

Alternative A

Under Alternative A, 611,310 acres would be open to cross-country OHV use, and 1,329,430 acres would be limited to designated routes. Approximately 276,430 acres would be designated as closed to OHV use. Managing OHV use under current "open" designations would be beneficial for motorized OHV users because few restrictions on cross-country OHV use would

continue to provide long-term recreational opportunities for this resource user group. However, the resource degradation-related impacts to soils, water quality, scenic quality, cultural resources, wildlife, and vegetation (all of which are components of the recreational experience), and the impacts associated with OHV noise and other resource user groups would continue to impact other resource users within the 611,310 acres designated as open to OHV use because this area would continue to remain open to OHV-caused cross-country surface disturbances. The impacts of designated limited routes would continue to provide beneficial, long-term recreational/travel opportunities for motorized OHV and mountain biking user groups, with negligible impacts on recreational resources, as these routes would not increase surface disturbance impacts to recreational resources. WSAs would be closed to OHV travel except within designated "ways"; thus the impacts to recreation would provide opportunities for backcountry experiences to non-mechanized users, but would have adverse impacts on motorized OHV users from a lack of access to WSAs. However, the long-term impacts of OHV management decisions under this alternative on natural and cultural resources and on other recreational resource users would be substantially adverse because, as discussed in Sections 3.10.3 and 3.10.4, OHV use within the Monticello PA is increasing, with the likelihood that OHV-related resource use conflicts with other resources would continue to intensify in the long-term.

Alternative B

Under Alternative B, no acres would be designated as open to cross-country OHV use, with all OHV routes (1,359,417 acres) designated as limited to designated routes. Approximately 423,698 acres would be designated as closed to OHV use. Management decisions under this alternative would designate OHV travel routes for mountain bikes, single track motorized (motorcycles), or two-track motorized OHV use (four-wheelers, jeeps, ATV). Site-specific route adjustments would be permitted based on recreational opportunities, access needs, and resource constraints. The short-term and long-term impacts on recreational resources would be beneficial because: (1) the adverse impacts to natural and recreation-related (interpretive) cultural resources from cross-country OHV use would be eliminated, and (2) surface disturbance-related impacts from OHV use would be restricted to designated routes (which are, in effect, areas that have already been impacted by surface disturbances).

The impacts on motorized OHV users would be adverse in the long-term because a substantial area would not be managed for cross-country OHV travel, with the elimination of opportunities for this form of recreation. The impacts on mountain biking user groups would be beneficial in the short- and long-term because management decisions would permit the spatial separation of potentially conflicting resource users, which would reduce user conflicts and increase the likelihood of a satisfying recreational experience for all OHV route users. The impacts of this alternative on other resource users would be variable: the impacts on scenic drivers and specialized recreation users would be negligible because these user groups are not likely to have resource use conflicts with OHV users; and the impacts on river floating users would be beneficial in the long-term if non-motorized routes were designated along river corridors, otherwise noise-related impacts from motorized OHV use would have potentially adverse impacts on the recreational expectations of solitude, quiet, and remoteness for this group. Similarly, the potential impacts of this alternative on non-mechanized users (i.e., hikers, equestrians) would be an adverse reduction in recreational opportunities for solitude and a sense of backcountry remoteness from noise-related OHV use if designated OHV routes were to lie near hiking trails. Otherwise, the elimination of cross-country OHV travel within the planning

area would have long-term, beneficial impacts on non-mechanized users because of the reduced likelihood for encountering OHV noise and users, with a loss of a sense of remoteness, quiet, and solitude.

Compared to Alternative A, this alternative would have long-term impacts on those recreational opportunities associated with cross-country OHV use because these opportunities would be eliminated. This alternative would have more long-term beneficial impacts on recreational resources and on recreational user groups than Alternative A because: (1) resource use conflicts would be reduced through adaptive management of OHV route designation and use, and (2) surface disturbance-related impacts to natural and cultural resources from OHV use (which would affect all recreation user groups) would be reduced.

Alternative C

This alternative would designate 2,311 acres as open to cross-country OHV use, with 1,362,142 acres limited to designated routes for OHV use, and 418,667 acres designated as closed to OHV use. The open OHV play areas would lie within (1) the proposed Indian Creek SRMA in contiguous parcels (totaling 2,214 acres) along Indian Creek, and be managed under the SRMA plan prescriptions, and (2) on 97 acres within Butler Wash, managed under the Comb Ridge CSMA. Management decisions would also designate route-limited OHV use to access trailheads within WSAs, and approximately 3.8 miles would be designated as a limited OHV route within Arch Canyon. The impacts on recreation of OHV designations under this alternative would be similar to those discussed under Alternative B because the management decisions would be similar. Long-term surface disturbance-related impacts would occur within the 2,311 acres designated as open to cross-country OHV use, but the impacts would be relatively minor because: (1) the area of potential impacts is less than 1% of the Monticello PA, (2) the open OHV play areas would be managed under the proposed SRMA and CSMA to ensure that open OHV use would be contained, and (3) past recreational OHV use has already caused OHV-related surface disturbances in both areas.

Compared to Alternative A, this alternative would have impacts similar to those discussed under Alternative B because more than 99% of the area designated as open to OHV cross-country use under Alternative A would be limited to designated routes or closed to OHV use under this alternative. The comparative impacts on recreational resource user groups would be similar to those impacts discussed under Alternative B because the adaptive management decisions to respond to recreational user needs, conflicts, and opportunities would be the same as those discussed under Alternative B.

Alternative D

Under this alternative, 2,311 acres would be designated as open to cross-country OHV use, approximately 1,780,807 acres would be available for travel on limited designated routes, and no acreage would be designated as closed to OHV travel. The impacts of this alternative on recreation resources would be similar to those impacts discussed under Alternative C because a relatively small area would be affected by open OHV recreation. The impacts on non-mechanized and mountain biking recreational user groups would be adverse in the long-term, because no areas would be closed to motorized OHV use. This would increase the potential for resource use conflicts because of the increased likelihood for encounters between non-mechanized, mountain biking, and motorized OHV users throughout the planning area. Under

this alternative, the opportunities for unlimited, cross-country OHV recreation would be adversely impacted in the long-term when compared to Alternative A because approximately 609,000 acres (99% of the area designated as open under Alternative A) would have prohibitions on cross-country OHV travel, a substantial reduction in opportunities for this type of motorized OHV recreation. However, when compared to Alternative A, there would be increased opportunities for motorized and specialized (motorized) OHV recreation throughout the planning area for recreation along designated routes, which would have long-term, beneficial impacts to motorized OHV because no area would be closed to this recreational user group.

Alternative E

Under this alternative, management decisions would be the same as Alternative B, except all travel routes (approximately 179 miles of D-Class roads [see Section 4.3.16, Travel Management]) within lands with non-WSA wilderness characteristics would be closed to OHV use. The impacts on recreational use would be to reduce the opportunities for motorized OHV use and experiences on approximately 582,357 acres, which would have a substantially adverse impact to motorized user groups. However, non-mechanized user groups would benefit from the increased opportunities for solitude, a sense of remoteness, and reduced user conflicts with mechanized groups. Compared to Alternative A, this alternative would have more beneficial impacts to non-mechanized users from increased opportunities for satisfying experiences within more areas closed to motorized users. Conversely, this alternative would have greater adverse impacts to motorized OHV and mountain biking user groups from closure of travel routes within the non-WSA wilderness characteristics areas because opportunities for motorized and mountain biking recreational experiences would be reduced.

4.3.10.3.16.2. Special Stipulation Areas

Alternative A

Management decisions for special stipulation areas would include OHV exclusions within the McLoyd Canyon-Moon House cultural site (no public travel allowed along 500 feet of BLM-administered access road) to protect cultural resources, with impacts as discussed under Section 4.3.10.3.2.

Travel and access within Arch Canyon would be limited to designated routes to protect special status species and habitat within the canyon. The impacts on recreational resources within Arch Canyon would be beneficial in the long-term because wildlife habitat would be preserved from potential OHV-caused surface disturbances, and recreational opportunities for wildlife viewing, sight-seeing, and camping would be maintained.

Alternatives B and E

Under these alternatives, the access route to McLoyd Canyon-Moon House would be closed to motorized use (approximately one mile of D-Class road D4798), which would reduce or eliminate the recreational opportunities for some visitors to experience the site because it would be likely that a portion of recreational users now able to visit the site would not be able to walk there. However, reducing the level and intensity of recreational sight-seeing within the site would have long-term, beneficial impacts on the recreational/cultural resource by reducing recreation-caused impacts to the site.

Arch Canyon would be closed to OHV use, access permits for non-mechanized users (i.e., hikers, equestrians) would be required, and group sizes would be limited to two groups per day of 10 individuals per group (or 20 visitors per day). Permitted groups or individuals would be allowed to camp within the canyon. The management decisions that exclude motorized OHV and mountain biking recreation groups from the canyon would have long-term, adverse impacts on these user groups by eliminating the opportunities for these user groups to experience Arch Canyon. The impacts to recreational resources within the canyon would be beneficial in the long-term because potential surface disturbance impacts caused by OHV use would be eliminated.

Compared to Alternative A, this alternative would reduce the recreational opportunities within Arch Canyon and McLoyd Canyon-Moon House. The impacts to recreational resources within McLoyd Canyon-Moon House and Arch Canyon under this alternative would be more beneficial in the long-term when compared to Alternative A because the access exclusions, permit limitations on group size and group number for overnight camping, and limitations on recreational use would have more preservation-related impacts on recreational resources.

Alternative C

Management decisions for the McLoyd Canyon-Moon House site would have similar impacts on recreational use and on the recreation resource as discussed under Alternative B because a portion of the route (approximately 500 feet of D-Class road D4798) would be closed to motorized traffic.

Management decisions for Arch Canyon would have similar impacts on recreational use and on recreational resources as discussed under Alternative A because the management decisions are similar: OHV use would be restricted to designated routes (totaling approximately 3.8 miles) with some portions closed to protect special status species. Under this alternative, an OHV permit system and limits on the size of OHV groups and number of groups allowed to access the canyon would be applied (totaling 24 OHV visitors per day), which would have short-term impacts on those motorized recreation users seeking recreational experiences within the canyon because of limitations on OHV use in the canyon. There would be no limits on the number of non-mechanized recreational users within the canyon and no overnight camping limits for permitted OHV users and non-mechanized users, which would maintain this recreational opportunity for both user groups.

Compared to Alternative A, this alternative would have similar impacts as discussed under Alternative B for the McLoyd Canyon-Moon House cultural/recreational site.

The impacts on Arch Canyon, when compared to Alternative A, would be similar for recreational resources, but this alternative would have greater short-term impacts on motorized recreational users because of limitations caused by the maximum number of users permitted per day (24 visitors per day) under this alternative with no specified limits on access under Alternative A.

Alternative D

Under this alternative, the management decision impacts on the McLoyd Canyon-Moon House site and on recreational users of the site would be similar to those discussed under Alternative A because motorized access to the site along D4798 would be permitted under this alternative.

The management decision impacts on recreational users in Arch Canyon would be similar to those discussed under Alternative C, but to a lesser degree, because only commercial motorized

recreational users would require permits and be subject to access limitations (12 individuals per group with two groups per day). The limitations on motorized and non-mechanized camping would similar to the discussion under Alternative A because only commercial OHV users would be subject to short-term access and camping restrictions. The impacts on recreational resources within the canyon would be similar to Alternative A because motorized users would be allowed year-round, but would be limited to designated routes.

Compared to Alternative A, the impacts of Alternative D decisions for Arch Canyon would be similar because the management decisions affecting recreational resources and recreational users would be similar: few restrictions on motorized, mountain biking, and non-motorized recreational opportunities, and preservation of wildlife habitat by limiting OHV use to designated trails.

4.3.10.3.17. Impacts of Vegetation Decisions on Recreation

4.3.10.3.17.1. Alternative A

The short-term and long-term impacts of management decisions for vegetation on recreation resources and users would be similar to those discussed under the Fire Management Section 4.3.10.3.3 because the vegetation management decisions would be similar. Under this alternative, treatments would be applied to approximately 232,130 acres within vegetation communities to control exotic and invasive species and improve ecosystem health using methods similar to those for fire management, re-seeding, and restoration. Rehabilitation of disturbed areas would use techniques similar to those used for areas affected by prescribed and wildland fire.

4.3.10.3.17.2. Alternatives B and E

Under these alternatives, approximately 7,600 acres per year of a range of vegetation cover types would be treated (or approximately 114,000 acres over the lifetime of the proposed RMP), with impacts similar to those discussed in Section 4.3.10.3.3. Compared to Alternative A, these similar alternatives would treat approximately 49% of the area proposed under Alternative A, with fewer short-term, adverse impacts on recreational opportunities and resources.

4.3.10.3.17.3. Alternative C

Alternative C would treat approximately 9,300 acres per year (or approximately 139,500 acres over the lifetime of the proposed RMP) of various vegetation cover types to improve or restore ecosystem health, with impacts as discussed in Section 4.3.10.3.3. Compared to Alternative A, this alternative would treat approximately 60% of the area proposed under Alternative A, with impacts on recreation as discussed in Alternative B.

4.3.10.3.17.4. Alternative D

This alternative would treat approximately 11,300 acres per year (or approximately 169,500 acres over the lifetime of the proposed RMP) of various vegetation cover types to improve or restore ecosystem health, with impacts as discussed in Section 4.3.10.3.3. This alternative would treat approximately 73% of the area proposed under Alternative A, with impacts as discussed in Alternative B.

4.3.10.3.18. Impacts of Visual Resources Decisions on Recreation

4.3.10.3.18.1. Alternative A

Under Alternative A, approximately 371,575 acres would be managed for higher levels of visual resource protection under VRM Class I objectives, and 355,112 acres would be managed for visual resource protection under VRM Class II objectives, with approximately 41% of the planning area managed for high scenic quality. There would be lower levels of visual resource and scenic quality protection under VRM Class III and Class IV on 1,054,681 acres. The VRM Class I and II resource objectives would have long-term, protection-related, beneficial impacts on recreational resources and all recreational resource users because recreation-related scenic quality would be preserved or impacted to a minor degree. As discussed in Section 4.3.18, Visual Resources, the visual resource inventory conducted for the Monticello FO determined that the visual inventory classes (which are a measure of visual values [scenic quality, public concern for scenic quality]) were the same as the VRM classes assigned under the 1991 RMP.

4.3.10.3.18.2. Alternative B

Under Alternative B, 497,668 acres would be managed under VRM Class I (33% more than Alternative A), with 250,641 acres managed under VRM Class II visual quality objectives (42% of the planning area would be managed for high scenic quality). Approximately 1,034,813 acres would be managed under the visual resource objectives of VRM Class III and Class IV. Compared to the current VRM inventory and Alternative A, this alternative would manage 21,622 more acres under higher levels of VRM Class I and Class II scenic quality protection. This would have long-term, beneficial impacts on recreation resources and users because more acres would be managed to prevent or mitigate surface disturbances to visual and scenic quality under VRM Class I and Class II objectives, with associated long-term, beneficial impacts on recreation-related scenic quality. Compared to Alternative A, this alternative would be more beneficial because more acres would be protected from potential scenic quality degradation.

4.3.10.3.18.3. Alternative C

Under Alternative C, VRM Class I would be designated on 425,179 acres (14% more than Alternative A), and VRM Class II would be designated on 132,001 acres. This alternative would manage 31% of the planning area for high scenic quality. The combined acreage designated as VRM Class III and Class IV would be approximately 1,225,915 acres. Compared to the current VRM inventory/Alternative A, this alternative would reduce the area of higher levels of resource protection under VRM Class I and II by 169,507 acres (a 10% reduction) to 31% of the planning area. This would have long-term, adverse impacts on recreational resources and users because fewer acres would be managed for high-level protection of visual and scenic quality and more area would be managed for potential surface disturbance-related scenic quality degradation.

4.3.10.3.18.4. Alternative D

Under Alternative D, 390,424 acres would be managed as VRM Class I. The VRM Class II-designated area would comprise 8,838 acres, while the combined VRM Class III and Class IV areas would include 1,386,860 acres. Compared to the current VRM inventory and Alternative A, this alternative would reduce the number of acres for higher levels of visual resource protection under VRM Class I and II designation by 327,425 (a reduction of 19%), with

approximately 22% of the planning area managed for high scenic quality. This would have long-term, adverse impacts on recreational resources and users because fewer acres would be managed to prevent or mitigate surface disturbances to visual and scenic quality, and would allow for more scenic quality degradation under VRM Class III and IV.

4.3.10.3.18.5. Alternative E

Alternative E would manage all non-WSA lands with wilderness characteristics under VRM Class I designation, which would result in 998,370 acres within the planning area being designated for management under this VRM class objective (269% more VRM Class I acreage than Alternative A). Approximately 111,478 acres would be managed under VRM Class II objectives, and approximately 433,459 acres would be managed under VRM Class III and IV objectives. Compared to the total VRM Class I and II acreages designated under Alternative A, this alternative would have more long-term, beneficial impacts on recreation-related visual resources because 383,161 more acres would be designated to preserve high quality scenic values under VRM Class I and II objectives (see Section 4.3.18, Visual Resources).

4.3.10.3.19. Impacts of Wildlife Resources Decisions on Recreation

4.3.10.3.19.1. Alternative A

Under Alternative A, current wildlife management decisions in the 1991 RMP would seasonally close crucial bighorn sheep, pronghorn, and deer habitat in the ERMA to OHV use to protect lambing, rutting, and winter habitat. These wildlife habitat closures would have short-term, adverse, seasonal impacts on opportunities for motorized OHV recreational opportunities because open OHV use would be prohibited in these areas.

There are no specified management decisions under any of the SRMAs that would restrict or prohibit motorized OHV use or other recreational activities because of wildlife seasonal habitat closures.

4.3.10.3.19.2. Alternatives B and E

Under these alternatives, commercial-type motorized or mountain biking tours and events would be seasonally prohibited (i.e., special recreation permits [SRPs] would not be issued) for OHV routes within pronghorn, bighorn sheep, deer, and elk crucial habitat and lambing and rutting areas. This would impact commercial-type OHV recreation in the short-term by decreasing the opportunities for motorized recreation along designated routes in crucial habitat areas (see Section 4.3.16, Travel Management). Compared to Alternative A, Alternatives B and E would have more restrictions on permitted and/or commercial OHV recreational opportunities within the ERMA area because 512 miles of travel routes would be seasonally closed to commercial recreational travel, with decreased opportunities for recreational access and movement through the planning area.

4.3.10.3.19.3. Alternative C

The impacts under Alternative C would be similar to those as discussed under Alternative B because the management decisions are similar, except that elk crucial habitat would also be seasonally closed to commercial OHV use and approximately 135 miles of travel routes (26% of the routes closed under Alternative B) would be closed in the short-term to some permitted or

commercial OHV use or mountain biking tours and events. Compared to Alternative A, this alternative would have more restriction-related impacts to commercial-type recreational OHV opportunities because these opportunities would be more limited.

4.3.10.3.19.4. Alternative D

The impacts on OHV recreational user groups from wildlife management decisions under this alternative would be similar to those discussed under Alternative A because the management decisions are similar: commercial and private recreational OHV use would be permitted, though limited to designated routes within the ERMA, during seasonal wildlife restrictions.

4.3.10.4. Summary of Impacts

See Table 2.2 for a full summary of the impacts to recreation. In general, Alternatives B and E would be more beneficial in the long-term to non-mechanized users because under these alternatives mountain biking and motorized OHV user groups would be more restricted (through travel closures, access limitation, and/or travel access prohibitions to protect wilderness values within non-WSA areas with wilderness characteristics) than under the other alternatives. Under these alternatives, more opportunities would be available for non-mechanized users to experience solitude and a sense of remoteness, with reduced user conflicts from mechanized users. Alternative D would have more beneficial impacts on mountain biking and motorized OHV users because this alternative proposes fewer recreation-related travel restrictions for these groups. Alternative C would balance the benefits to non-mechanized and mechanized user groups by managing for mountain biking and motorized OHV use while also providing opportunities for non-mechanized user groups.

4.3.10.5. Mitigation Measures

In addition to the Management Common to All described in Chapter 2, Appendix A, and Appendix I, other measures to reduce or mitigate the impacts to recreational resources and recreational resource users would include:

- Apply fugitive dust control along scenic backways, historic trails, and heavily used travel routes to preserve recreation-related scenic quality;
- During and after prescribed burning, vegetation treatments, and fire suppression when areas are being reclaimed, encourage and educate recreational users to use alternate areas with similar recreational opportunities to permit affected recreational areas to re-vegetate;
- Educate recreational resource users regarding protection of recreation-related cultural and natural resources.

4.3.10.6. Unavoidable Adverse Impacts

Minerals exploration and development (e.g., seismic exploration along existing routes, spur road construction, well pad drilling) and OHV use would likely have short-term and long-term, unavoidable, adverse impacts on recreational user groups whose recreational expectations include solitude, naturalness, and a sense of remoteness (i.e., non-mechanized, river floating, and some specialized recreational user groups).

4.3.10.7. SHORT-TERM USE VS. LONG-TERM PRODUCTIVITY

In general, short-term uses (e.g., prescribed fire treatments, geophysical minerals activities, vegetation treatments) would have long-term impacts on recreational opportunities (productivity) where scenic quality is a component of recreational expectations. While disturbances to vegetation would be in the short-term, vegetation establishment and re-growth is typically long-term in the Monticello PA. Thus, the scenic quality contrasts from surface and vegetation disturbances would have potentially long-term impacts on recreational opportunities and experiences.

4.3.10.8. IRREVERSIBLE AND IRRETRIEVABLE IMPACTS

There are no unavoidable impacts that would cause irreversible, unrestorable losses of recreational resources because vegetation communities can be restored, and recreation-related cultural resources can be protected. Irretrievable impacts to recreational resources would be caused by: (1) the loss or diminishment of recreation-related scenic quality from vegetation treatments, fuel reductions, or invasive weed control until vegetation re-growth; (2) irretrievable loss of OHV and specialized recreational opportunities during seasonal closures of important special status species and wildlife areas, and (3) the irretrievable loss of scenic recreational opportunities due to mineral development until well sites are reclaimed. As discussed above in the Summary, the impacts from vegetation and surface disturbances would have long-term, irretrievable impacts on recreational opportunities to experience scenic quality until vegetation re-growth.

4.3.11. RIPARIAN RESOURCES

Within the Monticello PA, riparian areas are typically associated with perennial, intermittent, and ephemeral streams, as well as isolated springs and other water sources. The area of potential effect for riparian resources would include all riparian areas identified in the preliminary riparian inventory for the Monticello FO. Management decisions with the potential to impact riparian resource health, the proper functioning condition (PFC) of streams, water resources necessary to riparian zone establishment and survival, or the physical environment on which riparian vegetation depends (e.g., stream stability) were evaluated in this analysis.

Analysis of impacts to the riparian resources within the Monticello PA were conducted primarily by overlaying proposed management decisions (e.g., surface disturbances due to grazing, OHV travel, camping and other recreational use, and woodland harvest) on the 28,994 acres of riparian areas in the PA, as identified in the GIS-based Utah GAP database (Lowry et al. 2005) of vegetation types. In assessing the level of surface-disturbing and vegetation-modifying impacts on riparian resources, the total acreage of surface disturbance, visitor and livestock use, and loss or degradation of riparian habitat were considered. All alternatives would include riparian management actions with the potential to affect riparian resources. Where GIS or other quantitative data were unavailable, potential impacts to riparian resources were analyzed qualitatively, based on these same criteria.

Under all alternatives, management decisions for the following resources would result in negligible impacts to riparian resources: air quality, cultural resources, health and safety, and paleontological resources. The impacts would be negligible because protecting air quality, protecting cultural resources under Section 106, maintaining safety around AML sites and

reducing the risks of hazardous materials spills and spill-site cleanup, and protecting known fossil areas for scientific study and recreational collection of fossils would neither degrade nor improve the water, soil, and vegetation components of riparian resources. Accordingly, the impacts of management actions for these resource categories are not analyzed further in this section.

4.3.11.1. Impacts Common to All Alternatives

4.3.11.1.1. Impacts of Riparian Decisions Common to All Alternatives

Impacts to riparian areas in the Monticello PA would be a result of vegetation disturbance and surface-disturbing activities within the riparian zones, and are subject to restrictions to ensure that conditions are improved or at least not degraded. All alternatives must adhere to Standard 2 of the Utah BLM Standards for Rangeland Health, which apply to riparian resources in the Monticello PA. Standard 2 states that "[r]iparian and wetland areas [must be] in properly functioning condition (PFC). Stream channel morphology and functions are appropriate to soil type, climate, and function" (BLM 1997). The BLM would develop monitoring and management strategies and restrictions as necessary to meet or maintain PFC. Meeting or maintaining PFC would improve the physical and biological condition of those riparian zones that do not currently meet PFC standards, and would therefore constitute a beneficial impact to riparian zones in the Monticello PA.

Pipeline crossings of perennial, intermittent, and ephemeral stream channels would be constructed to withstand 100-year floods to prevent breakage and subsequent accidental contamination of runoff during high-flow events. Surface crossings would be constructed high enough to remain above stream flows at each crossing, and subsurface crossings would be buried deep enough to remain undisturbed by scour throughout passage of the peak flow. Hydraulic analysis would be completed in the design phase (by the project proponent) to eliminate potential environmental degradation associated with pipeline breaks at stream crossings to avoid repeated maintenance of such crossings. Specific recommendations regarding surface and subsurface crossings are found in Guidance for Pipeline Crossings (see Appendix F). These stipulations would minimize adverse impacts to riparian resources resulting from release of unrefined petroleum or hazardous substances and/or flood flow obstruction.

Under all alternatives, oil and gas development would be managed with NSO minerals leasing stipulations in riparian areas. No new surface-disturbing activities would be allowed within active floodplains or within 100 meters of riparian areas. The Monticello FO would follow BLM guidelines for managing riparian areas (see Technical Reference 1737-6: Riparian Area Management, as amended). All floodplains and riparian/wetlands would be managed in accordance with Executive Orders 11988 and 11990, Sections 303 and 404 of the Clean Water Act, and the ESA. These orders would protect riparian resources and floodplains from surface disturbance and vegetation removal.

Management of public lands by the Monticello FO would be consistent with the Colorado River Salinity Control Act and comply with Utah's state water-quality standards. Uses would be managed to minimize and mitigate damage to soils and to maintain and/or restore overall watershed health and reduce erosion, stream sedimentation, and salinization of water. These management actions would limit short- and long-term adverse impacts to riparian resources by

reducing water quality degradation, salinization, and sedimentation that would impact the biological and physical structure of riparian areas.

Floodplains and riparian areas would generally be excluded from private commercial use of woodland products (but would be accessible to Native Americans for ceremonial purposes), thus limiting adverse impacts to resources due to vegetation disturbance, streambank trampling, and noxious weed spread. Habitat, range, and watershed improvements would be allowed and have been evaluated in the 1991 Vegetation EIS (BLM 1991b). Riparian areas would be excluded from surface disturbance by mechanized or motorized equipment and from structural development under all alternatives, thereby beneficially protecting riparian resources from disturbance.

All alternatives would close social trails in Road Canyon, Fish Creek, and Mule Canyon and restrict camping within 200 feet of isolated springs and water sources to protect riparian resources by limiting trampling of vegetation, disturbance of streambanks, and noxious weed spread. Implementation of the Southwest Willow Flycatcher Recovery Plan would potentially benefit riparian resources through habitat enhancement and water management.

All alternatives would require the control of invasive and non-native weed species, as identified in Table 3.56, and prevention of the infestation and spread of new invasive species through cooperative agreements and implementation of BLM weed-management policies and action plans. Pack stock and riding stock users on BLM-administered land would be required to use certified weed-free feed. Use of certified weed-free seed mixes, mulch, and fill would be required in restoration/rehabilitation activities. To help control noxious weeds, power washing of equipment may be required for permitted uses. The Monticello FO would reduce tamarisk where appropriate using allowable vegetation treatments (refer to Section 4.3.17, Vegetation Resources, for treatment acreages). These actions would reduce adverse impacts to riparian resources from noxious weeds.

4.3.11.1.2. Impacts of Fire Decisions Common to All Alternatives

Fire management actions under all alternatives would have the same impacts on riparian resources. The impacts would generally be adverse in the short-term due to increased sedimentation and increased runoff from areas where prescribed burns are implemented. Long-term beneficial impacts would occur under all alternatives from reduction of the risk of and severity of wildland fires, and from the establishment of a more natural fire return interval. Estimated fuels reduction treatments of 5,000 to 10,000 acres per year would be designed to limit potential impacts to riparian habitat under all alternatives, which would have long-term, beneficial impacts on riparian resources.

4.3.11.1.3. Impacts of Lands and Realty Decisions Common to All Alternatives

Under all alternatives, land tenure adjustments (LTAs) could acquire riparian areas, and LTA criteria call for the retention of those riparian areas already in public ownership. LTAs would beneficially impact riparian resources under all action alternatives, as the resources would be protected by the stipulations placed on their use.

4.3.11.1.4. Impacts of Soil and Water Resources Decisions Common to All Alternatives

Under all alternatives, management of all floodplains and riparian/wetland areas in accordance with Executive Orders 11988 and 11990, the Clean Water Act, the ESA, and Utah's Rangeland Health Standards would have a beneficial impact on riparian resources in the Monticello PA. Management under the terms of these directives would reduce the disturbance of riparian vegetation and soils and the introduction and establishment of weeds on floodplains. Prohibition of surface disturbances in active floodplains or within 100 meters of riparian areas would also protect riparian systems under all alternatives.

4.3.11.1.5. Impacts of Vegetation Decisions Common to All Alternatives

Under all alternatives, vegetation treatment decisions would reduce the prevalence of invasive Russian olive and tamarisk throughout the Monticello PA and replace them with native willow and cottonwood stands. These actions would have a beneficial impact on riparian areas through the restoration of their native ecosystem characteristics.

4.3.11.1.6. Impacts of Wildlife Decisions Common to All Alternatives

Wildlife management decisions would have the same impacts under all alternatives. The management of wildlife would potentially affect resources in riparian areas where elk are allowed to graze. Some loss of riparian vegetation would occur from browsing.

4.3.11.1.7. Impacts of Woodland Decisions Common to All Alternatives

Woodland management in riparian areas would allow collection of willows and cottonwoods for Native American ceremonial purposes through a permit system. Wood-collection and harvesting practices in riparian areas would be required to maintain PFC in riparian areas, so that, although impacts to riparian productivity and health would be adverse, they would be negligible.

4.3.11.2. Alternatives Impacts

4.3.11.2.1. Impacts of Lands and Realty Decisions on Riparian Resources

4.3.11.2.1.1. Alternative A

Right-of-way (ROW) exclusions on 120,800 acres would benefit riparian areas by limiting the possibility of surface disturbances, vegetation removal, and changes in hydrology and sedimentation that might result from an expanded road network.

4.3.11.2.1.2. Alternative B

Exclusion of ROWs from bird habitat and nesting complexes in riparian habitats, as well as from VRM Class I and Class II designated areas, would beneficially limit both surface disturbance and vegetation removal in riparian zones within the Monticello PA and changes in hydrology and sedimentation that might result from an expanded road network.

4.3.11.2.1.3. Alternative C

Exclusion of ROWs from bird habitat and nesting complexes in riparian habitats, as well as from VRM Class I areas, would beneficially limit both surface disturbance and vegetation removal in riparian zones within the Monticello PA and changes in hydrology and sedimentation that might result from an expanded road network.

4.3.11.2.1.4. Alternative D

Exclusion of ROWs from threatened and endangered species habitats (which may occur in riparian habitats), as well as from VRM Class I designated areas, would beneficially limit both surface disturbance and vegetation removal in riparian zones within the Monticello PA and changes in hydrology and sedimentation that might result from an expanded road network.

4.3.11.2.1.5. Alternative E

Exclusion of ROWs from bird habitat and nesting complexes in riparian habitats, VRM Class I and Class II designated areas, and non-WSA lands with wilderness characteristics would beneficially limit both surface disturbance and vegetation removal in riparian zones within the Monticello PA and changes in hydrology and sedimentation that might result from an expanded road network.

4.3.11.2.2. Impacts of Livestock Grazing Decisions on Riparian Resources

4.3.11.2.2.1. Alternative A

Proper herd management would provide long-term protection and enhancement of riparian areas through stimulation of growth of riparian vegetation. Grazing regulations would ensure proper grazing practices through implementation of seasonal closures or closure of allotments when degradation occurs. Proper grazing practices would ensure protection of riparian areas through maintenance of vegetative cover leading to riparian area health. Drought conditions, however, could worsen adversely impacted riparian plant growth and streambank stability. Proper livestock grazing would benefit riparian systems by ensuring recruitment of riparian plant species.

Impacts on riparian vegetation vary with season of use. For example, grazing riparian areas in late spring allows vegetation to grow through summer and into the fall and protect banks during critical spring runoff and late summer thunderstorms. Changes in season of use or AUMs would ensure compliance with all standards of the Utah BLM Standards for Rangeland Health, particularly Standard 2. Compliance with Standard 2 would minimize adverse impacts to riparian areas by requiring changes in grazing management wherever monitoring shows degradation of riparian areas when PFC is not achieved.

The use of riparian exclosures within grazing allotments would protect and enhance riparian resources within the Monticello PA. The following areas would be unavailable for grazing under Alternative A: Comb Wash side canyons, including Mule Canyon below U-95, and Arch, Fish, Owl, and Road Canyons. The closure of these 2,400 riparian acres to grazing would eliminate adverse impacts to riparian resources on approximately 12% of the available riparian habitat in the planning area. The total riparian area open to grazing under Alternative A would be 17,600

acres. Table 4.86 shows the riparian acreage open to and unavailable for grazing under each alternative.

Table 4.86. Livestock Grazing in Riparian Areas, by Alternative

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Open	17,600	17,200	17,200	18,020	17,200
Unavailable	2,400	2,800	2,800	2,380	2,800

4.3.11.2.2.2. Alternative B

Under Alternative B, grazing would be unavailable in all or portions of Butler Wash, Dodge Canyon, Fish and Owl Canyons, Horsehead Canyon, Road Canyon, Arch Canyon, Dark Canyon, within the Pearson Hiking Trail area, the five mesa tops, Grand Gulch, Lake and Moki Canyons, Slickhorn Canyon, Bridger Jack Mesa and Shay Canyon ACECs, Harts Canyon, and Indian Creek areas for the life of this plan. The closure of riparian areas to grazing would protect riparian vegetation (as described above under Alternative A) on approximately 2,800 acres within the Monticello PA. Grazing would still be allowed on approximately 17,200 acres of riparian area. These management actions would close approximately 14% of the grazed riparian areas within the Monticello PA, compared to closure of approximately 12% of riparian areas under Alternative A (see Table 4.86).

4.3.11.2.2.3. Alternative C

Management of livestock grazing under Alternative C with respect to riparian areas would be the same as under Alternative B, and the impacts would thus be the same as well.

4.3.11.2.2.4. Alternative D

Alternative D would close the same areas to grazing that would be closed under Alternative B, with the exception of Lake Canyon (52 riparian acres), Horsehead Canyon (24 riparian acres), Moki Canyon (100 riparian acres), Harts Canyon (140 riparian acres), Indian Creek/Kelly Ranch (84 riparian acres), and Shay Canyon (20 riparian acres). Thus, the total acreage of riparian area open for livestock grazing under Alternative D would be approximately the same as proposed under Alternative A.

The closure of riparian areas to grazing would protect and enhance riparian vegetation (described above under Alternative A) on approximately 2,380 acres within the Monticello PA. Grazing would still be allowed on approximately 18,000 acres of riparian area. These management actions would close approximately the same amount of riparian area as proposed under Alternative A (see Table 4.86).

4.3.11.2.2.5. Alternative E

The impacts to riparian resources under Alternative E would be the same as those described for Alternative B.

4.3.11.2.3. Impacts of Non-WSA Lands with Wilderness Characteristics on Riparian Resources

4.3.11.2.3.1. Alternatives A–D

Under Alternatives A through D, non-WSA lands with wilderness characteristics would not have any special management prescriptions to protect their wilderness values. Riparian resources within these areas would therefore be unaffected by management to protect the wilderness characteristics of non-WSA lands with wilderness characteristics.

4.3.11.2.3.2. Alternative E

Under Alternative E, riparian areas within 582,360 acres of non-WSA lands with wilderness characteristics would be beneficially protected from surface disturbance, vegetation removal, and other impacts (as described elsewhere in Section 4.3.11) by closure of this acreage to mineral leasing and entry, all OHV use, all ROWs permitting, mineral disposal, and woodland harvesting.

4.3.11.2.4. Impacts of Recreation Decisions on Riparian Resources

All alternatives would require that recreation be managed to meet Utah's Rangeland Health Standards, guided by the Standards for Public Land Health and Guidelines for Recreation Management for BLM Lands in Utah (see Appendix E for Standards and Guides). These guidelines describe the procedures that should be applied to achieve standards for rangeland health within the recreation program. Where long-term damage to riparian resources by recreational uses is observed or anticipated, the Monticello FO would limit or control activities through specialized management tools such as designated campsites, management of human and pet waste, permits, area closures, and limitations on number of users and duration of use. The FO would consider and, where appropriate, implement management methods to protect natural resources. Limitation on visitor numbers would reduce direct adverse impacts to riparian resources by limiting bank trampling and noxious weed spread. Dispersed camping where allowed may be closed seasonally or as impacts or environmental conditions warrant. This action would protect riparian resources in areas where degradation of riparian habitat is occurring.

The designation of SRMAs would have both adverse and beneficial impacts on riparian resources. Allowing visitation to SRMAs would result in impacts to riparian resources, such as trampling of streambank vegetation and the potential spread of exotic, invasive, or noxious weeds. Indirect impacts, including changes in timing and amount of runoff, would occur as a result of vegetation trampling and weed infestation. Limits on visitor use through implementation of a permit system in high-traffic areas would reduce long-term user impacts and related effects.

4.3.11.2.4.1. Alternative A

The San Juan River SRMA would be designated under Alternative A, and river trips on the San Juan would require a special use permit. Alternative A would continue management of the San Juan River SRMA under current launch limits, which allow approximately 40,000 user-days per year, private and commercial trips combined. Trip size would be limited to 25 people on private

trips and 25 passengers plus 8 crewmembers on commercial trips. These levels of visitor activities would directly and indirectly impact riparian resources, as discussed above.

The Grand Gulch Plateau (Cedar Mesa) would have no user allocation limits for day use, would be open to dispersed camping, and would have no limits on in-canyon numbers of parties per day. Group size would be limited to 12 for in-canyon day and overnight use; no limits on commercial use would be instituted. Trailhead allocations would range from 22 to 26 visitors for in-canyon overnight use, except the Government trailhead, which would have a limit of 12 visitors.

There would be no limits on camping and access in the Dark Canyon SRMA, and dispersed camping would be allowed in the Indian Creek Corridor SRMA, which would be designated under Alternative A. These management prescriptions would result in more direct impacts to riparian resources from visitor use under Alternative A than under any other alternative. Backpackers in Slickhorn Canyon and Grand Gulch would not be allowed to camp within 1 mile of the river, protecting riparian resources in these areas from visitor use impacts. The designated campground would be removed from the Newspaper Rock area and rehabilitated. This action would limit direct visitor use impacts to riparian resources adjacent to this campground under all alternatives.

OHV use would potentially impact riparian resources through disturbance of riparian vegetation, streambank destruction, and a subsequent increase in sedimentation. Under Alternative A, OHV use within riparian areas would be open on 10,871 acres, closed on 3,524 acres, and limited to designated routes on 6,302 acres, providing a total of 61 miles of travel routes in the Monticello FO. The percentage of riparian area open, closed, and limited to designated routes under Alternative A would be 53%, 17%, and 30% of total riparian acreage, respectively, the largest amount of riparian area open to cross-country OHV travel or with designated routes for OHV travel under all alternatives (Table 4.87). Thus, under Alternative A there would be the highest risk for potential impacts to riparian resources.

Table 4.87.OHV Use in Riparian Areas by Alternative (Acres)

OHV Category	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Open	10,871 (53%)	0	135 (1%)	135 (1%)	0
Closed	3,524 (17%)	3,977 (19%)	3,676 (18%)	0	8,779 (43%)
Limited to Designated Routes	6,302 (30%)	16,458 (81%)	16,624 (81%)	20,300 (99%)	11,656 (57%)
Travel routes (miles)	61	43	52	56	43

4.3.11.2.4.2. Alternative B

Many of the impacts of recreation management on riparian resources discussed under Alternative A apply to this and other alternatives as well. User numbers under Alternative B (and under Alternative E) would generally be lower than under Alternative A and all other action

alternatives. Restrictions on camping, pets, and user-group sizes under Alternative B (and Alternative E) would also be more stringent than under other alternatives.

Alternative B would designate the San Juan River SRMA, where no motorized boating would be allowed. Launch schedules would allow approximately 30,000 user-days per year, 10,000 fewer user-days than under Alternatives A and C, and 15,000 fewer user-days than under Alternative D. Trip size would be limited to 20 people (including crew) for both private and commercial use, fewer persons than under any other alternative. These restrictions would result in approximately 30% less potential disturbance to riparian habitat than under Alternative A.

Visitor use of the Grand Gulch Plateau (Cedar Mesa) would limit group size to 10 people for day use. Primitive sites would be designated, group sizes would be limited to 12 people, and overnight visitors would be required to remove all human waste. These management actions would reduce impacts to riparian resources, whereas Alternative A would place no such limits on use of the mesa top.

In-canyon riparian resources would be protected from visitor-use impacts where use is restricted. Restrictions on use would include limits on in-canyon visitor numbers. Group size would be 2 people fewer than under Alternative A, and permits would be required for high-season use. Limits of 10 people per trailhead and one commercial trip every other day would provide more protection for riparian resources than under Alternative A, which would not designate daily visitor numbers.

In-canyon overnight use would be the same as under Alternative A, with some exceptions. Some campsites would be designated, and if human waste became a problem, a policy to carry out waste could [or might] be implemented. Private-group size would be limited to 6 people per day per trailhead, 50% less visitation than allowed under Alternative A. Total caps for trailheads would be 16 people per day, 30–40% less visitation than under Alternative A.

Fewer commercial permits would be issued for the Dark Canyon SRMA under Alternative B than under any other alternative. Camping would be allowed only in designated sites, with no dispersed camping. Group size would be limited to 10–12 and the number of private users in the canyon per day to 15, whereas Alternative A would not have any visitor use limits. These restrictions would decrease surface disturbance, the risk of trampling of riparian vegetation, and the potential for loss of shade and increased sedimentation.

Dispersed camping would not be allowed in the Indian Creek Corridor. Camping would be allowed only in designated sites, resulting in fewer adverse impacts to riparian resources than under any other alternative.

Alternative B would designate OHV travel in riparian areas, with 3,977 acres closed, 16,458 acres limited to designated routes, no acres open to cross-country travel, and a total of 43 miles of travel routes available. Closing or limiting travel in riparian areas would protect riparian resources and limit impacts from OHV use, as discussed under Alternative A. Only Alternative E would provide a higher level of protection of riparian resources.han

The percentage of riparian area open, closed, and limited to designated routes under Alternative B would be approximately 0%, 19%, and 81%, respectively. Compared to Alternative A, these limits on OHV use in riparian areas would result in 10,871 fewer acres open to OHVs, 453 more acres closed, 10,156 more acres with OHVs limited to designated routes in riparian areas, and 18

fewer miles of travel routes. Alternative B (along with Alternative E) would thus have the lowest recreation-related riparian use levels and the lowest level of potential impacts of the proposed alternatives.

4.3.11.2.4.3. Alternative C

The discussion of Alternative A provided a general description of the impacts of recreation management on riparian resources. User numbers under Alternative C would be similar to those under Alternative A. However, restrictions on camping, pets, and user-group sizes under Alternative C would be more stringent than those under Alternative A.

The San Juan SRMA would be designated, with management decisions similar to those under Alternative A. Launch limits would allow approximately 40,000 user-days per year, the same as under Alternative A. Trip size would be limited to 25 people, including crew on commercial trips. For commercial trips, the total would be 8 fewer than under Alternative A. These management actions would therefore result in slightly less adverse impact than would occur under Alternative A.

Visitor day use of the Grand Gulch Plateau (Cedar Mesa) would be limited to a group size of 12 people in most areas. Primitive sites would be designated, group size would be limited to 24 people, and overnight visitors would be required to remove human waste. These management actions would substantially reduce impacts to riparian resources on the mesa top over Alternative A, which would have no such limits.

In-canyon riparian resources would be protected from visitor-use impacts where use is restricted. Restrictions on use would include limits on in-canyon visitor numbers. Group size would be limited to 12, the same as under Alternative A, and a limited permit system would be implemented. Limits of 12 people per trailhead and one commercial trip per day per trailhead would provide more protection for riparian resources than under Alternative A, which would not limit commercial use.

In-canyon overnight use would be the same as under Alternative A, with some exceptions. Some campsites would be designated for large groups (8–12 people), and if human waste should become a problem, a requirement to carry out waste might be implemented. Private group size would be limited to 8 people per day per trailhead, 33% less visitation than allowed under Alternative A. Total caps for trailheads would be 20 people per day, resulting in approximately 10% less visitation than under Alternative A.

The Dark Canyon SRMA would be designated with three commercial permits, fewer than under Alternative A. Camping would be allowed in designated sites only, with no dispersed camping. Group size would be limited to 15 people and the number of private users in the canyon to 20 per day, resulting in a reduction of surface and vegetation disturbance in comparison with Alternative A, which would not have any visitor use limits. These restrictions would decrease surface disturbance, the risk of trampling of riparian vegetation, and the potential for loss of shade and increased sedimentation.

Dispersed camping would be allowed in the Indian Creek Corridor except within certain zones where camping is limited to designated sites, resulting in fewer impacts to riparian resources than under Alternative A.

Alternative C would manage OHV travel in riparian areas, with 3,676 acres closed, 16,624 acres limited to designated routes, and 135 acres of designated open areas. Closing or limiting OHV travel in riparian areas would protect riparian resources and limit impacts from OHV use, as discussed under Alternative A. These limits on OHV use would provide a higher level of protection of riparian resources than Alternatives A and D, but less protection than Alternatives B and E.

The percentage of riparian area that would be open, closed, and limited to designated routes for OHV use under Alternative C would be approximately 1%, 18%, and 81%, respectively. These limits on OHV use in riparian areas would result in 10,736 fewer acres open to OHVs, 152 more acres closed to OHVs, and 10,322 more acres with designated route limitations for OHVs in riparian areas than under Alternative A. Designated routes in riparians would total 52 linear miles, 9 fewer miles, or approximately 15% less, than under Alternative A.

Overall, management actions for recreation under Alternative C would provide more protection of riparian resources than would Alternatives A and D, and less protection than management actions under Alternatives B and E.

4.3.11.2.4.4. Alternative D

Impacts of recreation management on riparian resources that apply to all alternativeswere discussed under Alternative A. User numbers under Alternative D would generally be lower than under Alternative A and all other action alternatives.

Alternative D would designate the San Juan River SRMA, where no motorized boating would be allowed. Launch schedules would allow approximately 45,000 user-days per year, 5,000 more user days than under Alternative A. Trip size would be increased to 35 people (including crew) for both private and commercial use, more than under any other alternative, with approximately 5% more potential for disturbance to riparian habitat than under Alternative A.

Visitor use of the Grand Gulch Plateau (Cedar Mesa) would limit group size to 12 people for day use within the WSA and 25 people outside the WSA. There would be no site designation for groups under 24 and no group size limit. These management actions would have the same impacts on riparian resources as those under Alternative A, which would also impose no camping limits on the mesa top.

Grand Gulch in-canyon riparian resources would be protected from visitor-use impacts where use is restricted. Restrictions on use would be the same as under Alternative C, except that two commercial trips per trailhead would be allowed, with a slightly greater risk of adverse visitor impacts.

In-canyon overnight use would generally be the same as under Alternative A, with some exceptions. Some campsites would be designated, and if human waste should become a problem, carrying out waste might be required. Private group size would be limited to 12 people per day per trailhead, the same as under Alternative A. Total caps for trailheads would be 24 people per day, also the same as under Alternative A.

The Dark Canyon SRMA would be designated, with fewer commercial permits than under any other alternative. Dispersed camping would be allowed. Visitation would be limited to 15 users per day in the canyon. Surface and vegetation disturbance would be reduced in comparison with Alternative A, which would not have any visitor use limits. These restrictions would decrease

surface disturbance, the risk of trampling of riparian vegetation, and the potential for loss of shade and increased sedimentation.

Dispersed camping would be allowed in the Indian Creek Corridor, with the same exceptions as under Alternative C. Alternative D would thus result in slightly fewer adverse visitor-related impacts than Alternative A.

Alternative D would designate OHV travel in riparian areas, with no riparian areas closed to OHV use, 20,300 acres in areas limited to designated routes, and 135 acres open to cross-country OHV travel. Closing or limiting OHV travel areas in riparian areas would protect riparian resources and limit impacts from OHV use, as discussed under Alternative A. The limits on OHV use under Alternative D would provide more protection of riparian resources than those under Alternative A, as all of the riparian area within the Monticello FO would be limited to designated routes under this alternative. Under Alternative D, approximately 10,736 fewer riparian acres would be open to OHVs in riparian areas, 3,524 fewer acres would be closed, and 13,998 more acres would be limited to designated routes than under Alternative A. A total of 56 linear miles of travel routes would be designated in riparian areas, 5 fewer miles than under Alternative A.

Alternative D would have similar use levels in designated recreation areas. Impacts to riparian areas would be similar under Alternative D and Alternative A.

4.3.11.2.4.5. Alternative E

Impacts to riparian resources under Alternative E would be the same as under Alternative B, except that restrictions on OHV use would be more stringent and fewer impacts to riparian areas from OHV use would occur. Overall, impacts under Alternative E would be less adverse than under any other alternative. Alternative E would designate OHV travel in riparian areas, with 3,977 acres closed, 16,458 acres limited to designated routes, and no acres open to cross-country OHV travel. These limits on OHV use would provide the highest level of protection of riparian resources of any alternative.

The percentages of riparian areas open, closed, and limited to designated routes under Alternative E would be approximately 0%, 43%, and 57%, respectively. As a result, 10,871 fewer acres would be open to OHVs, 5,255 more acres would be closed, and 5,354 more acres would be limited to designated travel routes in riparian areas than under Alternative A. The total number of linear miles limited to designated routes in riparian areas would be 43, 18 fewer miles than under Alternative A.

4.3.11.2.5. Impacts of Special Designations Decisions on Riparian Resources

4.3.11.2.5.1. Alternative A

Areas designated as WSAs would restrict motorized use to existing routes. This management decision would protect riparian resources from new direct impacts from motorized use, as described under Section 4.3.10, Recreation. Under Alternative A, management of WSAs would continue to retain wilderness values, thus protecting riparian values through limitations on motorized use on a total of 2,400 acres of riparian area within the Monticello PA.

ACECs would have different management prescriptions based on resources of concern. Under Alternative A, a total of 5,700 riparian acres would have limitations on motorized use within ACECs. Motorized use would be limited to existing roads and trails within the Alkali Ridge ACEC and the Scenic Highway Corridor ACEC (900 riparian acres). Motorized use would be limited to designated roads and trails within the Cedar Mesa ACEC (partial), Hovenweep ACEC, and Shay Canyon ACEC (1,300 acres). Areas would be closed to motorized use within the Butler Wash ACEC, Cedar Mesa ACEC (partial), Dark Canyon ACEC, and Indian Creek corridor ACEC (3,600 acres). ACEC designation would not generally limit livestock use. All livestock exclosures were analyzed in Section 4.3.6.1, Impacts Common to All Alternatives, in relation to potential riparian impacts.

Management of ACECs under Alternative A would not limit geophysical work within these areas. Geophysical work would potentially impact riparian resources through vegetation trampling and removal, habitat fragmentation, and possible noxious plant infestation. Any geophysical work within riparian areas would require site-specific NEPA analysis.

Some overlap of ACECs and WSAs would occur under all alternatives. Six ACECs would overlap with WSAs: Bridger Jack Mesa, Butler Wash, Cedar Mesa, Dark Canyon, Indian Creek Corridor, and Lockhart Basin (see Maps 81-83).

4.3.11.2.5.2. Alternative B

The designation of WSAs under Alternative B would be the same as under Alternative A and as discussed above, except that no travel would be allowed within WSAs under Alternative B. The limitation on travel would slightly reduce the risk of impacts to riparian areas from boundary road maintenance, erosion, or changes in hydrology or sediment yield from roads.

Management of ACECs under Alternative B would not preclude OHV limits to designated routes or closure of areas to OHV use. Analysis of impacts of OHV use on riparian resources appears above in Section 4.3.11.2.1.3, Impacts of Recreation Decisions on Riparian Resources. Surface-disturbing vegetation treatments would not be allowed in the Alkali Ridge and Shay Canyon ACECs, protecting approximately 400 more riparian acres than Alternative A, which would allow surface-disturbing vegetation treatments. Indirect impacts of surface disturbance were discussed under Section 4.3.17, Vegetation. In the Shay Canyon ACEC, Alternative B would limit livestock use on 20 more riparian acres than Alternative A. Designation of the Bridger Jack Mesa, Butler Wash, Cedar Mesa, Dark Canyon, Hovenweep, Indian Creek Corridor, Lockhart Basin, Lavender Mesa, San Juan River, and Valley of the Gods ACECs would have the same impacts as under Alternative A.

4.3.11.2.5.3. Alternative C

Under Alternative C, special designation would generally result in very similar impacts to riparian resources as under Alternative B, except that ACECs would generally be managed with slightly less protective prescriptions (such as VRM Class, mineral stipulations, livestock management, camping restrictions, and woodland harvest). Like Alternative B, Alternative C would be more protective of riparian resources than Alternative A.

4.3.11.2.5.4. Alternative D

Alternative D would manage WSAs according to the IMP, resulting in the same impacts to riparian resources as would occur under Alternative A. No ACECs would be designated under Alternative D, thus there would be no impacts to riparian resources, as discussed under Alternative A.

4.3.11.2.5.5. Alternative E

The impacts to riparian resources under Alternative E would be the same as those described under Alternative B, except that riparian areas in 109,206 acres of ACECs in non-WSA lands with wilderness characteristics would be managed with additional limitations on woodland harvest, mineral entry, surface disturbance, and ROWs that would protect riparian areas. Because many of these activities are already prohibited in riparian areas and many ACECs, these further restrictions would have a minor beneficial impact on riparian resources.

4.3.11.2.6. Impacts of Special Status Species Decisions on Riparian Resources

4.3.11.2.6.1. Alternative A

The implementation of management decisions related to special status species would generally protect and/or enhance riparian resources. Recovery plans for the Southwestern willow flycatcher, Colorado River fishes, bald eagle, and yellow-billed cuckoo would benefit riparian resources through habitat enhancement and potential reductions in riparian habitat degradation. Removal of tamarisk for restoration or enhancement of special status species habitat would generally benefit riparian resources.

All alternatives, including Alternative A, would avoid loss of cottonwood gallery riparian habitats and limit surface disturbance in riparian areas to protect bald eagle roosting areas. Any disturbance of riparian vegetation would be replaced with native species or ecological equivalents for all special status species. These actions would help maintain existing riparian resources.

All alternatives, including Alternative A, would also restrict surface-disturbing activities within 300 feet of suitable Southwestern willow flycatcher and yellow-billed cuckoo habitat yearlong and would require 0.25-mile buffers for permanent noise-producing facilities. These obligate riparian species preferentially use riparian areas for all life phases. Restrictions on surface disturbance would reduce potential impacts to riparian resources, as discussed under Impacts Common to All Alternatives. The eradication of tamarisk would cause short-term surface disturbance but would result in long-term enhancement of riparian resources. The BLM would ensure that water extraction or disposal activities do not result in changes to hydrologic regimes that would result in loss or degradation of riparian habitat. Alternative A would avoid loss of riparian habitats in designated critical habitat to protect the endangered Colorado River fishes.

4.3.11.2.6.2. Alternative B

Alternative B would propose the same management decions and result in the same impacts as described under Alternative A. In addition, Alternative B would close Arch Canyon (130 riparian acres) to OHV use to protect habitat for Mexican spotted owl and flannelmouth sucker. Group size for non-motorized recreation uses would be limited to 10 individuals and 2 groups per day in

Arch Canyon, and a permit system would be implemented. These decisons would protect riparian resources and reduce impacts to riparian resources in Arch Canyon more than the actions taken under Alternative A, which would not limit use in Arch Canyon.

4.3.11.2.6.3. Alternative C

Alternative C would propose the same management decisions and result in the same impacts as those described under Alternative A. In addition, Arch Canyon would be managed to protect habitat for Mexican spotted owl and flannelmouth sucker, which would reduce adverse impacts to riparian resources from visitor impacts and OHV use. OHV use would be limited to the designated route to the end of the State Section (T37S, R20E, Section 16) year-round. The canyon would be closed year-round from the west boundary of the State Section to the end of the route at the National Forest boundary. Group size for non-motorized recreation users would be limited to 12 individuals and 2 groups per day, and a permit system would be implemented.

4.3.11.2.6.4. Alternative D

Alternative D would result in the same management and impacts as described under Alternative A. In addition, Alternative D would protect habitat for Mexican spotted owl and flannelmouth sucker in Arch Canyon, where OHV use limited to designated routes would be allowed year-round. The number of commercial motorized uses would be limited to 12 people and 2 trips a day. These management actions to protect special status species would result in fewer adverse impacts to riparian resources than under Alternative A and more adverse impacts than under the other action alternatives.

4.3.11.2.6.5. Alternative E

The impacts to riparian resources under Alternative E would be the same as those described for Alternative B because the proposed management decisions would be the same.

4.3.11.2.7. Impacts of Vegetation Decisions on Riparian Resources

4.3.11.2.7.1. Alternative A

Alternative A would not propose any riparian vegetation treatments and would involve no vegetation management decisions that would affect riparian resources.

4.3.11.2.7.2. Alternative B

The Monticello FO would conduct vegetation treatments in riparian areas under all action alternatives. Potential impacts related to vegetation treatments include increased runoff and sedimentation due to loss of vegetative cover in the short term. Improvement of riparian condition (PFC) would occur over the long term, after treatment areas have recovered.

Under Alternative B, 500 acres of riparian vegetation treatments would be completed each year, resulting in long-term improvement of riparian condition. This would be 500 more acres of riparian treatment than under Alternative A.

4.3.11.2.7.3. Alternative C

Alternative C proposes to implement 100 acres of riparian vegetation treatments each year to restore ecosystem health and PFC of riparian areas. These decisions would result in 400 fewer acres treated in riparian areas than under Alternatives B and E, 100 more acres treated than under Alternative A, and the same acreage treated as under Alternative D. Overall, the management of vegetation resources under Alternative C would result in more beneficial impacts than under Alternative A or Alternative D, and fewer beneficial impacts than under Alternatives B and E.

4.3.11.2.7.4. Alternative D

Under Alternative D, the management of and impacts to riparian resources would be the same as under Alternative C.

4.3.11.2.7.5. Alternative E

The impacts to riparian resources under Alternative E would be the same as those described for Alternative B because the proposed management decisions would be the same.

4.3.11.2.8. Impacts of Visual Resource Decisions on Riparian Resources

In general, VRM designation of Class I and Class II would limit any surface disturbance and corresponding indirect adverse impacts to riparian resources from erosion and sedimentation due to vegetation clearing and/or soil disturbance. Conversely, areas that are designated as VRM Class III and Class IV would allow surface-disturbing actions, with the associated risk of sedimentation impacts to adjacent riparian areas.

4.3.11.2.8.1. Alternative A

Management decisions under Alternative A would designate as VRM Class I and Class II 12,200 acres of riparian habitat, approximately 60% of the total riparian resources within the Monticello PA. Table 4.88 compares the number of acres designated as VRM Class I and Class II for each of the alternatives.

Table 4.88. VRM Class I and Class II Designation in Riparian Areas by Alternative (Acres)

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
VRM I and II	12,200	11,200	8,600	5,300	13,704

4.3.11.2.8.2. Alternative B

Management of visual resources under Alternative B would result in reduction of surface disturbance through requirement of NSO leasing stipulations and limits on construction in areas adjacent to 11,200 acres of riparian areas within the Monticello PA. Indirect impacts to riparian resources would be reduced in these areas. Under Alternative B, 1,000 fewer riparian acres would be protected through visual resource management than under Alternative A, resulting in an increased risk of surface disturbance from human-construction on 56% of riparian areas within the Monticello PA, compared to 60% under Alternative A.

4.3.11.2.8.3. Alternative C

Management of visual resources under Alternative C would result in reduction of surface disturbance through requirement of NSO and limits on construction in areas adjacent to 8,600 acres of riparian areas within the Monticello PA. Under Alternative C, 3,600 fewer riparian acres would be protected through visual resource management than under Alternative A, resulting in an increased risk of surface disturbance from human-construction on 42% of riparian areas within the Monticello FO, compared to 60% under Alternative A.

4.3.11.2.8.4. Alternative D

Management of visual resources under Alternative D would result in reduction of surface disturbance on areas adjacent to 5,300 acres of riparian areas within the Monticello PA. Alternative D would protect 6,900 fewer riparian acres than visual resource management under Alternative A, resulting in an increase of impacts on approximately 25% of riparian areas within the Monticello PA, compared to 60% under Alternative A.

4.3.11.2.8.5. Alternative E

Impacts to riparian resources under Alternative E would be the same as those described under Alternative B, except that more area would be designated as VRM Classes I and II. Under Alternative E, 1,504 more riparian acres would be protected through visual resource management than under Alternative A, resulting in a decreased risk of surface disturbance from human-construction on 67% of riparian areas within the Monticello FO, compared to 60% under Alternative A and 56% under Alternative B.

4.3.11.3. Summary of Impacts

Resource management decisions would generally allow or limit direct and indirect adverse impacts to riparian resources. All alternatives would have similar impacts on riparian resources from fire, soils, and watershed management. The alternatives differ in their impacts in management of livestock grazing, recreation management, special designations, and visual resource management.

Proper levels of livestock grazing would not result in adverse impacts to riparian resources, as discussed above. The highest level of riparian resource protection would occur under Alternatives B and E, under which fewer riparian acres would be grazed by livestock. Alternative C would provide more protection of riparian resources than Alternatives A and D, both of which would impose similar restrictions on livestock grazing in riparian areas.

Recreation decisions would generally impact riparian resources in areas where increased visitor use would result in riparian habitat degradation. Alternatives B and E would have the lowest levels of user numbers of the proposed alternatives. Alternative D would have the highest user numbers; followed by Alternative A. Alternative C would provide a level of use between Alternative B and Alternative A.

Special designations would protect riparian resources in areas where management prescriptions reduce OHV use. These limits on use would result in ranking of impacts between alternatives, as described under Recreation.

Visual resource protection would generally limit surface disturbance, resulting in reduced indirect adverse impacts to riparian resources that could result from changes in watershed hydrology and stream sedimentation. Alternative A would provide the highest level of riparian resource protection from visual resource management, followed by Alternatives B, C, D, and E, in that order.

4.3.11.4. MITIGATION MEASURES

The management decisions common to all proposed alternatives, as described in Chapter 2 and in Appendixes A and I, outline the mitigation measures that would serve to avoid and/or minimize impacts to riparian resources resulting from management actions.

4.3.11.5. UNAVOIDABLE ADVERSE IMPACTS

Any pipeline crossings of stream channels could result in the loss of riparian habitat. OHV use and presence of livestock in riparian areas have the potential for the loss or degradation of riparian habitat, but changes in management based on monitoring would limit these impacts.

4.3.11.6. SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

The short-term use of vegetation treatments in specific riparian resource areas would affect the long-term productivity of the treated areas by increasing the likelihood of achieving riparian PFC in degraded riparian habitat. Long-term productivity would be beneficially impacted, since the goals of the short-term treatments in riparian areas would be to improve ecosystem health, reduce invasive and exotic species, and restore PFC.

4.3.11.7. IRREVERSIBLE AND IRRETRIEVABLE IMPACTS

Irretrievable loss of riparian habitat could occur due to grazing, visitor trampling, and construction-related removal of riparian habitat. However, that habitat could eventually be restored, so those impacts would not be irreversible. However, it is possible that noxious-weed infestation of disturbed riparian areas could become an irreversible impact, given the difficulties observed in the past in controlling invasive species such as tamarisk and Russian olive.

4.3.12. SOCIOECONOMIC RESOURCES

Impacts to social and economic conditions could result from the implementation of any of the alternatives. While the range of socioeconomic impacts may vary depending on the alternative implemented, some management actions would have a measurable impact on socioeconomics and are disclosed in the following analysis.

Potential economic impacts include changes in employment and income, changes in tax revenue for local, state, and federal government entities, and changes in the demand for housing and public service. Where available, quantitative data are used to analyze impacts. Where quantitative data are not available, a qualitative analysis is performed based on best available information.

Social impacts to communities cannot be measured in economic terms. These human impacts include enhancements or detractions from existing lifestyles, sense of place, community values,

and unfair or unjust impacts or burdens on low income or minority populations. Accordingly, these impacts are assessed qualitatively.

Impacts to socioeconomic resources from implementation of alternatives would be considered significant if one or more of the following occurs:

- Substantial gains or losses in population/employment.
- Activities or operations substantially altering the lifestyles or quality of life of individuals utilizing or living near the Monticello FO.
- Disproportionately high and adverse environmental or human health impacts to an identified minority or low income population that appreciably exceed those to the general population around the project area.

4.3.12.1. Impacts Common to All Alternatives

4.3.12.1.1. Impacts to Environmental Justice

Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires identifying and addressing disproportionately high and adverse human health and environmental impacts of federal programs, policies, and activities on minority or low income populations. To evaluate potential environmental justice impacts, the following federal agency guidance documents were reviewed:

- EO 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," February 11, 1994, Federal Register at 7630.
- U.S. Environmental Protection Agency, "Interim Final Guidance for Incorporating Environmental Justice Concerns in EPA's Compliance Analysis, Office of Federal Activities," September 30, 1997.
- Council on Environmental Quality, "Environmental Justice: Guidance Under the National Environmental Policy Act (NEPA)," Executive Office of the President, December 1997.

The following five step method was used to evaluate potential environmental justice impacts associated with land management actions proposed by the BLM:

1. Identify potential minority or low income populations within the study area.
2. Identify a broad range of potential environmental and human health effects that could affect minority or low income populations including safety, traffic, air quality, noise, cultural resources, hazardous waste sites and hazardous materials transport, natural resources, land use, and socioeconomics.
3. Assess whether the potential impacts on minority and low income populations would be high and adverse.
4. Conduct extended outreach to minority and low income populations that would experience potential high and adverse effects.
5. Evaluate mitigation measures that would be used to minimize adverse impacts to minority and low income populations.

Census data for San Juan County, as well as Utah, were used for this analysis. These baseline data are summarized in Section 3.12.4.4. It includes:

- Total population.
- Percent of population of minority status (e.g., Black or African American, Hispanic or Latino, Asian American, American Indian or Alaskan Native, Native Hawaiian and other Pacific Islanders).
- Percent of population of low income status using annual statistical thresholds from the Bureau of Census Current Population Reports.
- Percent of population of minority status for the entire state of Utah.
- Percent of population of low income status in the entire state of Utah using annual statistical thresholds from the Bureau of Census Population Reports.

The data listed above were then used to determine whether the populations residing within the counties in the study area constitute an "environmental justice population" that meets any of the following criteria:

- At least one-half of the population is of minority status.
- At least one-half of the population is of low income status.
- The percentage of population of minority status is a least 10 percentage points higher than for the entire state of Utah.
- The percentage of population of low income status is at least 10 percentage points higher than for the entire state of Utah.

San Juan County is home to 27% of the state's Native American population and 55.7% of the county's total population; therefore Native Americans are not the minority in San Juan County. However, in Utah, 93.8% of the entire population identify themselves as white and 1.3% of the population identify themselves as Native American/Alaskan Native (GOPB 2002). Therefore, when considered state or region-wide, Native Americans are considered a minority. Despite the population data that indicates non-minority status within San Juan County, Native Americans are considered a minority group for the purposes of analyzing and ensuring environmental justice during this RMP process.

In 2003, the number of people in San Juan County living below the poverty line was higher than the state average (22.6% versus. 10%). While San Juan County poverty trends show a decrease over time, they remain higher than the state average. In terms of race, the Native American population has the highest poverty level in the county at 48%, or 3,809 individuals.

Under each alternative, it has been determined that BLM resource management actions would not result in disproportionate effects to "environmental justice populations" defined in Executive Order 12898. Minority and low income populations do exist in the planning area, but no BLM action proposed across all alternatives would cause disproportionate adverse impacts to these populations.

Two issues identified in Section 3.12.4.4.3 related to Native American concerns with BLM management decisions have been addressed to meet the group's needs and would not adversely impact their traditional practices. Under all alternatives, wood gathering in designated areas would be allowed, with the exception of Cedar Mesa (outside of Cedar Mesa WSA) under Alternative B. Also under all alternatives, the collection of cottonwoods and willows along riparian areas for ceremonial purposes would be permitted.

4.3.12.1.2. IMPACTS TO PILT PAYMENTS

None of the alternatives would result in significant changes in federal ownership in the planning area. Any future land exchanges or sales would be assessed to determine specific impacts, but in general, actions proposed with the RMP/EIS would not change payments to San Juan County made under the Payments in Lieu of Taxes (PILT) program according to established formulas.

4.3.12.1.3. IMPACTS TO POPULATION

Population changes in San Juan County that could be associated with the implementation of alternatives under consideration of this EIS would likely be linked to employment changes. Activities such as livestock grazing and mineral development within the Monticello FO that support jobs in the area are not expected in increase or decrease substantially under any of the alternatives (see impacts analysis below for further details). Therefore, it is not likely the BLM-related management decisions would result in significant changes in current population trends (see Section 3.12.4.2.1 for local population data).

4.3.12.2. ALTERNATIVES IMPACTS

The following resource management decisions would have negligible to minor impacts on woodland resources and will not be analyzed further in this section:

Air Quality

None of the decisions concerning air quality are expected to adversely affect the social or economic conditions of San Juan County.

Health and Safety

Health and safety management actions for all of the alternatives that would identify and address abandoned mine lands safety concerns, respond to hazardous waste releases, and protect public health and safety would have negligible adverse impacts to social and economic conditions of San Juan County. The health and safety management restrictions would not interfere or restrict the local economy or government revenue or the local social character of San Juan County.

Paleontology

Management actions for paleontological resources would have negligible impacts on socioeconomic resources because the recreational and scientific collection of fossils, as well as the protection of these resources, would be similar to current conditions and are the same across alternatives. Personal collection of invertebrate and plant fossils would be allowed throughout the Monticello PA. The recreational collection of vertebrate fossils, as well as of noteworthy invertebrate and plant fossils, is already prohibited within the Monticello PA. Therefore, the recreational collection of fossils from BLM-administered lands would have minimal impacts on the local economy. The permit-required scientific gathering of fossils within the planning area occurs rarely; approximately 1–2 permits are issued annually (see Section 3.9.2). The economic contributions, including sales and hotel tax revenue, from scientific collection would also be negligible under all alternatives.

Riparian

Management decisions common to all alternatives for riparian resources would have negligible impacts to the social and economic conditions of communities in San Juan County. The impacts would be negligible because all floodplains and riparian/wetlands would be managed in accordance with Executive Orders, the Clean Water and Endangered Species Acts, and Utah's Standards for Rangeland Health, and because there is opportunity for mineral leasing across all alternatives outside of riparian areas. These mandates and management actions would not allow great variation in the management of the resource that would have a substantial impact on the local economy or social character of communities.

Soils and Watershed

Soils and watershed actions common to all alternatives would have negligible impacts on socioeconomics. Approximately 76% of BLM lands available for surface disturbing activities are overlain with medium-risk and high-risk sensitive soils. Any surface disturbance projects (i.e., minerals development) initiated on these sensitive soils would require the use of Best Management Practices and mitigation measures such as those in Appendix A and Appendix I. The large percentage of lands available for surface disturbance and the relatively small amount of wells anticipated to be developed over the life of the plan (75 wells according to the BLM's RFD) would not result in an adverse impact on potential oil and gas exploration and development locations, so there would be no economic loss to the county. Under all alternatives developers would be able to extract oil and gas from more than three-quarters of medium- and high-risk soils and as a result generate revenues for federal and local governments.

Development on slopes greater than 20% would require a BLM-approved plan by developers and may require additional costs and time to relocate well pads and pipelines. This may result in a decrease in revenue for the developer. However, impacts to local economic conditions would be negligible given that the developers would still be permitted to produce on slopes ranging from 21–40% and generate revenue accordingly.

Special Status Species

The impacts of special status species management actions common to all alternatives on socioeconomics would be minor because temporary seasonal or spatial buffers and restrictions for roosting or nesting birds and habitat enhancement to protect special status species would not specifically restrict economic growth or social well-being. Restriction on mineral development within special status species habitat could adversely impact developers during specific times of year (see Section 4.3.7.4.8, Impacts of Special Status Species Decisions on Minerals). This could slow production due to timing limitations. However, due to the large amount of acres open to oil and gas development across alternatives (more than one million acres) and the small number of wells predicted within the Monticello FO, an adverse economic impact is unlikely because drilling would commence during periods without seasonal restrictions or year-round in areas without restrictions.

Vegetation

Vegetation management actions across all alternatives could have minor beneficial impacts to the local economy if labor, seed, and equipment maintenance come from local communities.

4.3.12.2.1. Impacts of Cultural Resources Decisions on Social and Economic Conditions

Under all alternatives, cultural resource management decisions could have potential impacts to socioeconomics. Given that San Juan County has more than 25,000 cultural sites, 60–65% of which are on BLM lands, the area is well known for its cultural resources and draws many visitors to the area. With approximately 4,000 self-identified registered visitors to cultural resource sites in the early 2000s, public interest in cultural sites appears to be increasing (see AMS Section 4.9.1.2 and 4.9.2.2 for details). Cultural resource management for recreational use draws hikers and OHV users to the area to visit sites. Increases or decreases in access to sites and the quality of the sites have the potential to socially impact the visitor and local communities and economically impact revenues.

Cultural resource management decisions could increase or decrease recreational visits to the sites and influence the overall visitor experience. The level of impacts is related to several factors, including the importance of the sites to the Native American communities in the area (the historic cultural sites in the area serve as a connection between the landscape and the local tribes' heritage), any links between local residents and cultural resources, and the degree to which specific sites draw visitors to the area.

Potential economic impacts resulting from cultural resource management decisions could include an increase or decrease in visitor spending. Increasing access could increase visitor spending in the area in the short-term, but degradation to sites could lead to long-term adverse economic impacts, as visitors may choose not to continue to come to the area.

4.3.12.2.1.1. Alternative A

Under Alternative A, 37,433 acres of land is designated for special management related to cultural resources. All of this land is located in the Grand Gulch Special Emphasis Area/Grand Gulch National Historic District. The restrictions proposed under this alternative (see Section 4.3.2, Cultural Resources, for details) reduce the risk of damage to cultural resources. The preservation of the resources in this area would have long-term beneficial social impacts to visitors and Native American communities. However, under this alternative there are minimal restrictions on other CSMAs, so the potential for loss of cultural integrity would be greater in these areas. Access to the CSMAs is not restricted under this alternative, so there is greater opportunity for access and recreation than if the sites were managed for special protections of cultural resources. Sites could be directly or indirectly impacted by increased visitor traffic (with resulting looting and vandalism). Other activities, such as oil and gas development, livestock grazing, and collection and harvesting of woodland resources would also create opportunities for direct and indirect, adverse impacts to cultural resources. These impacts could potentially degrade the visitor experience and therefore reduce the number of visitors to the area. Although difficult to quantify, a decrease in visitors to cultural sites could adversely impact the local economy through decreased traveler spending.

4.3.12.2.1.2. Alternative B

Under Alternative B, 98,348 acres of land would be subject to special management consideration for the purpose of protecting important cultural resource values. With a 162% increase in the amount of CSMAs and more use restrictions compared to Alternative A, this alternative provides

the second greatest amount of cultural resource protection after Alternative E. Management actions under this alternative would have short- and long-term, direct and indirect, beneficial social impacts. Visitor experience would be positive over the short and long-term because sites would maintain their historic and cultural integrity. Both directly and indirectly, Native American tribes would maintain a connection and the unique sense of place developed around preservation of the cultural sites in the area.

Alternative B would enact private and commercial group size limits and a permitting system in high-density cultural resource site areas. The limitations of group sizes could theoretically reduce visitation to the area. However, long-term visitation to these sites would likely continue to increase because site integrity would be maintained, providing a higher quality experience and thus potentially encouraging more people to visit the area. This in turn, would likely have long-term positive benefits to the local economy.

4.3.12.2.1.3. Alternative C

Under Alternative C, 98,348 acres of land would be subject to special management consideration to protect cultural resource values. The acreage and location would be identical to Alternative B. Restrictions are also similar to Alternative B, with the exception of the Tank Bench CSMA, which would be open to geophysical work, locatable mineral entry, mineral disposal, and oil and gas development under standard lease terms. Minor adverse social and economic impacts could occur as a result of mineral extraction if operations detract from recreational visits to cultural sites. In addition, the potential inadvertent damage to sites as a result of mineral extraction could have an adverse impact on local tribes and their connection to their cultural heritage. However, mineral development at the implementation level would be required to comply with Section 106 of the NHPA, which would require that development avoid, minimize, or mitigate such potential impacts. Other social and economic impacts would be identical to those described for Alternative B.

4.3.12.2.1.4. Alternative D

Under Alternative D, 38,995 acres of land would be subject to special management consideration for the purpose of protecting cultural resource values. This is a 5% increase from Alternative A and a 156% decrease in acres proposed under Alternatives B, C, and E. Impacts to social and economic conditions from cultural resource management decisions under this alternative would be similar to impacts described under Alternative A.

4.3.12.2.1.5. Alternative E

Impacts under Alternative E would be similar to those described in Alternative B, with the exception that lands in the Comb Ridge CSMA that were open to oil and gas leasing subject to NSO stipulations would be closed to oil and gas leasing under Alternative E. This would provide greater restrictions for development than under Alternative B and provide a higher quality experience and encourage more people to visit the area. This in turn, would likely have long-term positive benefits to the local economy.

4.3.12.2.2. IMPACTS OF FIRE MANAGEMENT DECISIONS ON SOCIAL AND ECONOMIC CONDITIONS

During a normal fire year the Moab Fire District averages 100 wildfires, resulting in 10,000 to 16,000 acres each year of disturbed and potentially damaged land. The Moab Fire District encompasses the Monticello, Moab, and Price FOs. Most fire activity occurs in the eastern half of the district, although fires can occur in almost all areas of each FO. In the 25-year period between 1980 and 2005, approximately 74% of wildland fires occurring in the Moab Fire District were caused by lightning. Prior to 1995, an average of 100 fires per year burned an average of 10,000 acres per year. The past decade has shown a trend of increasing wildland fire, with an average of 130 fires each year burning an average of 16,000 acres. With specific regard to the Monticello PA, over a 10-year period an average of 2,000 acres are burned each year (personal communication between Dave Engleman, FMO Moab FO, and Laura Burch, SWCA, September 5, 2006). See Section 3.4 for further fire management details.

In the upper Snake River Plain, which has similar vegetation types as the Moab Fire District, the average cost of wildland fire treatment was estimated to be approximately $105 per acre. The average cost for wildland fire suppression was estimated to be approximately $140 per acre (BLM 2006a). Based on an average of 2,000 acres burned per year in within the Monticello FO, the annual cost to suppress fires would be estimated to be $280,000. The cost of fighting fires, including supplies and labor, has the potential to impact the local economies.

Of the total expenditures for the fire management program, the following are estimates of approximate percentages spent in each category:

- 45% variable costs
- 30% fixed labor costs
- 25% other suppression costs (BLM 2006a)

Increased fire treatment and suppression activity could lead to more seasonal jobs in the region, as more firefighters would be needed during fire season. The fixed labor costs for suppression (see above) would be funneled back into the community since the firefighters are generally employed at a local level and thus contribute to the local economy. Areas of the economy that are boosted by the variable costs (50% of fire management expenditures) for treatment and suppression include fuel, food, lodging, maintenance, vehicles, administration, aviation, warehousing, and seeding. Assuming that 70% of the variable costs are spent in local communities (BLM 2006a), an estimated $98,000 would be funneled into the local economy annually. These contributions to the local economies would be distributed throughout the four counties comprising the Moab Fire District, including San Juan, Grand, Carbon, and Emery.

Full suppression of increasingly larger fires could potentially result in adverse fiscal impacts to affected agencies and local volunteer fire departments. If future demands for firefighting services cannot be met by current staffing levels and budgets, the Monticello FO and other agencies that help fight fires on BLM lands would be adversely impacted.

It should be noted that wildfire treatment, such as actively managing lands to reduce fuel loads, is less costly to agencies than fire suppression ($105 per acre versus $140 per acre). Expenditures for fuels treatments in the Moab Fire District (MFD), however, are currently paid almost exclusively to out-of-area contractors, providing only marginal direct economic benefits to the

local economy (personal communication between Bill Stevens, MFO, and Brain Keating, MFD fuels specialist, June 27, 2007). Actively managing BLM lands to reduce fuel loads would potentially provide economic benefits associated with the reduced risk of large-scale fires that could damage personal property (e.g., homes) and would result in lower expenditures for fire suppression treatments.

Homes and structures that are located within areas faced with wildfire threats are becoming increasingly susceptible to wildland fire, with an accompanying risk to lives and property. Communities in need of management action to reduce the threat from wildland fire on adjacent public lands are identified as WUIs. WUIs presently recognized within the Monticello PA include the communities of Blue Mountain Ranch, Natural Bridges, Bug Point, Cedar Point, Canyon Terrace, Boulder Point, Eastland, Ucolo, Summit Point, Montezuma Canyon, Bluff, Peter's Canyon, Blanding, and Monticello. Fuels treatments to reduce fuel loads in these areas would potentially have long-term beneficial impacts on these communities because of the decrease in the risk of damage to property. If there is a reduced risk of large-scale fires in WUI areas, people may be more likely to remain in these areas and individuals interested in remote locations for primary or secondary homes could be more likely to build in these areas, thus maintaining or increasing the populations of local communities.

4.3.12.2.3. Impacts of Lands and Realty Decisions on Social and Economic Conditions

Management decisions common to Alternatives A–D for lands and realty for access, permits, transfer, acquisition, or exchanges of lands within the PA would have negligible impacts on socioeconomics in the county. The impacts would be negligible because specific lands and realty management actions would be determined to be in the interest of the public and would accommodate the needs of local and state governments, including the needs for the economy, public purposes, and community growth.

Alternative E would prohibit land disposals and new ROWs on non-WSA lands with wilderness characteristics. The prohibition of land transfers, exchanges, or ROW authorizations on the proposed 582,357 acres could potentially have a minor adverse impact on socioeconomics because infrastructure development for revenue-generating activities such as mineral development, recreation, and timber harvesting would not be permitted.

Applications for filming permits limited to existing highways, roads, and pullouts throughout the Monticello FO would be granted under all alternatives provided they meet the criteria outlined in Table 2.1, Lands and Realty–Actions Common to All. Film permits have contributed minimally to the Monticello FO in recent years. In 2005, six permits were issued out of the Monticello FO totaling approximately $1,050. The costs of the film permits were $250 per day for moving shots and $100 per day for still shots. In addition to the fees collected from the BLM, filming crews contribute to the local economies via sales and hotel taxes. Under all alternatives contributions from film permits and expenditures by film crews while in the community would likely be similar to those currently experienced.

4.3.12.2.4. Impacts of Livestock Grazing Decisions on Social and Economic Conditions

A decrease in the number of acres open to grazing has the potential to negatively impact the lifestyle of ranchers in the community. Losses in grazing opportunities could result in lost income and consequently a decline in social well-being for affected ranchers and their families. The inability of ranchers to continue with traditional practices could potentially impact overall character and the way of life for residents of San Juan County. The preservation of the agricultural way of life is very important to members of the rural communities according to comments made by San Juan County residents at a workshop held by the Sonoran Institute prior to the development of the San Juan County Social and Economic Baseline Study in 2004.

Reductions in ranching-based income would make it difficult for families to earn a living on ranching alone. Family members may have to get second jobs or work off the farm to bring in additional income. If ranchers are unable to continue operations, impacts to local communities could include loss of business activity and/or the businesses themselves and a decline in population if individuals have to relocate to earn a living.

For the purposes of this analysis, the term "AUM" is used to indicate a change in available forage, not a change in the legally allotted grazing. Under Alternatives B, C, and D, portions of allotments would be unavailable for grazing. To get a sense of impacts to the permittees, the percentage of allotments closed was applied to the total number of AUMs under Alternative A (78,459 AUMs).

4.3.12.2.4.1. Alternative A

Under Alternative A, all livestock grazing actions would be the same as those laid out in the 1991 RMP, with the exceptions of new laws and regulatory policies that affect management of the resources under all alternatives. The forage availability and number of AUMs would likely continue at current levels and the economic contributions to the local communities would also continue at current levels. The total area open to livestock forage would continue to be 1,740,223 acres and the number of AUMs under Alternative A would be 78,459 (see Table 4.89).

Table 4.89. Grazing Impacts by Alternative

	Acres Available for Livestock Grazing	% Difference from Alternative A	AUMs Available for Livestock Grazing	% Difference from Alternative A
Alternative A	1,744,752		78,459	
Alternative B	1,735,265	-0.50	77,856	-0.08
Alternative C	1,736,589	-0.50	77,898	-0.07
Alternative D	1,738,758	-0.30	78,046	-0.05
Alternative E	1,735,265	-0.50	77,856	-0.08

This alternative would most closely maintain current livestock grazing conditions for permittees. Best professional judgment of the Monticello FO indicates that the acres open to grazing meet the demand of permittees. Income, jobs, sales, and tax revenue related to grazing within the Monticello PA would remain similar to current levels. Expenditures from ranchers contributing

to the local economy (e.g., feed, grazing fees, veterinary costs, fuel, repairs, and labor) would be similar to current conditions.

4.3.12.2.4.2. Alternative B

Under Alternative B, there would be a 9,487-acre reduction (0.5% decrease) in the amount of acreage open to livestock foraging. There would be a 0.08% decrease or 603 less AUMs than Alternative A (see Table 4.89). See Section 4.3.6, Livestock Grazing, for details on closures to livestock.

It is not likely that 0.5% decrease in available forage would have an adverse, substantial, long- or short-term impact on the ranching community. Overall, the 1,735,265 acres of total forage open under this alternative would meet the needs of grazing permittees, similar to Alternative A. It is possible that a slight decrease in forage acreage may require the supplementation of feed, which would come at a cost to the rancher. However, the slight decrease in acres open to forage is not likely to impact the social conditions related to agriculture. A 0.5% decrease in the amount of acres open to forage would not likely result in a loss of agricultural related jobs and income; therefore the quality of ranching life in and around the Monticello FO would likely be unaffected by this resource decision under this alternative.

4.3.12.2.4.3. Alternative C

Impacts to the social and economic conditions from grazing would be the same under Alternative C as Alternative D because the acres of forage available for livestock grazing would be the same between the two alternatives.

4.3.12.2.4.4. Alternative D

With a 0.30% decrease in the number of acres open to forage and a 0.05% decrease (or 20 AUMs) in the number of AUMs under Alternative D, impacts to the social and economic conditions in San Juan County resulting from grazing would be similar to Alternative A.

4.3.12.2.4.5. Alternative E

Impacts to the social and economic conditions from grazing would be the same under Alternative E and Alternative B because the acres of forage available for livestock grazing would be the same.

4.3.12.2.5. Impacts of Minerals Decisions on Social and Economic Conditions

4.3.12.2.5.1. Locatable Minerals

<u>Uranium-Vanadium</u>

The number of acres open to uranium and vanadium extraction is similar under all alternatives (varying less than 8%) with more than 1,520,000 acres available to exploration and development. Therefore, potential adverse impacts (i.e., restricting the number of acres open to extraction) would be negligible under Alternatives A–E.

Recent increases in the price of uranium have led to a substantial increase in the filing of uranium claims within the Monticello FO. Between FY 2004 and FY 2006, 1,972 mining claims

were filed on BLM lands. While the exact percentage of uranium claims versus other locatable mineral claims is not known, it is likely that the majority of the claims filed were for uranium. In addition, the Mineral Potential Report indicates a high potential for the occurrence of uranium and vanadium in historic mining areas. While the increase in the filing of mining claims does not necessarily predict future development, any extraction activities would have beneficial impacts on local economic conditions because developers would require goods and services in nearby towns.

Potential adverse effects from a dramatic increase in uranium exploration and extraction could include increased amount of stress on the local communities that have primarily identified themselves through the ranching and agriculture industries. Increases in health risks to the local communities could also have adverse impacts. Past uranium mining activities are currently suspected of increased health problems in the Monticello community. While this claim is currently under investigation by the Utah Department of Health, a resurgence of uranium mining activities could have similar adverse health impacts on the miners and members of the community. However, since BLM has no discretion regarding locatable mineral exploration and development, short of recommending areas for withdrawals, impacts resulting from this RMP would have negligible impacts on the resource.

Other Locatables

As in the case of uranium, the extraction of other locatables such as copper, placer gold, and limestone would not be adversely impacted regardless of the alternative selected. This is due to the large number of acres open to extraction and the small amount of mining that is likely to take place. Under all alternatives, the number of acres open to extraction exceeds 1,520,000 and varies less than 8% between alternatives (see Section 4.3.7.3, Summary of Locatable RFD and Saleable RFD, for exact acreages).

The newly opened Lisbon Valley Copper Mine, located within the Monticello FO, would continue operations under all alternatives. Contributions to the social and economic conditions in San Juan County from employment, property taxes (the mine is located partially on private land as well as BLM land), and indirect retail goods and services would continue regardless of the RMP alternative selected.

4.3.12.2.5.2. Saleable Minerals

Sand, gravel, building stone, and clay have a high potential for occurrence, and extraction of these minerals would likely occur throughout the life of the RMP regardless of the alternative selected. Minor—or even negligible—impacts to socioeconomics would be likely because the operations are typically small, and the number of acres open to extraction would likely be adequate to accommodate demand. Alternative E has 1,167,224 acres open to development of saleable minerals, while the other four alternatives have more than 1.2 million acres available. Under all alternatives, these acreages should be sufficient to meet demand for saleable minerals (see Section 4.3.7.3, Summary of Locatable RFD and Saleable RFD, for exact acreages).

4.3.12.2.5.3. Leasable Minerals

Potash and Salt

Under all alternatives, the same minimum amount of potash and salt development would be expected. Given the large amount of acreage open for leasable mineral development (Table 4.90) it is anticipated that the number of acres open would accommodate the demand for potash and salt extraction. The expected level of development would not appreciably contribute to the economy of San Juan County.

Table 4.90. Summary of Well Potential and Acres Open to Leasing on BLM Land Per Alternative

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	Predicted Wells				
Acreage Open	1,238,230	1,241,910	1,348,973	1,383,283	758,930
% Of Total Acreage Open Compared to Alternative A	--	0.30	8.20	10.50	-38.70
Total Number of Wells/LOP	73	66	74	75	54
Total Annual Well Potential	4.86	4.4	4.93	5	3.6

Oil and Gas Development

The greatest socioeconomic impacts from minerals decisions would result from changes to the oil and gas leasing program that currently exists in the planning area. Because of undefined market and non-market factors, the following analysis is based on simplified assumptions used to quantify general estimates of development costs, employment, production, and production revenue. This analysis is based on the assumptions included in Table 4.90 pertaining to the number of wells drilled per year, employment, production, and fiscal impacts.

Wells Drilled per Year

This analysis is based on an estimate of potential wells drilled annually over the life of the plan. Given the limited range in the number of wells drilled per alternative, under Alternatives A–D, on BLM land (66–75 wells over the next 15 years), a maximum of 5 wells annually (75 wells divided by 15 [life of the RMP] = 5) was assumed. The range between alternatives is 9 total wells, which would produce little overall variation between alternative impacts in terms of socioeconomic impacts. Alternative E proposes substantially fewer wells over the life of the plan (54 wells or 3.6 wells drilled annually), in comparison to Alternatives A–D. Given the reduced number of wells under Alternative E, the following analysis also considers the impacts of 3 wells per year in addition to the 5 wells per year under Alternatives A - D. See Table 4.90 for average number of wells predicted per alternative.

Although there are more acres open for development under Alternative B, compared to Alternative A the well potential is slightly lower. This is because the percentage of acres open to development within specific RFD areas is greater under Alternative A than Alternative B. For example, 98% of the Paradox Sub-basin is open to development under Alternative A and 81% is open to development under Alternative B. The percentage open to development impacts the total

number of wells predicted for each RFD area throughout the life of the plan. Within the Paradox Sub-basin the total number of wells predicted is 25 and, because of the reduction in percentage open to development under Alternative B, 20 wells are predicted.

Under Alternative E there would be a 38% reduction in acres open for oil and gas leasing and a 26% percent decrease in the predicted oil and gas wells compared to the No Action Alternative. This disproportionate decline can be explained by the substantial decrease in acres open for development in the Monument Upwarp RFD area, which has a large portion of lands with wilderness characteristics and a lower overall development potential when compared to the other alternatives. In contrast to the decline in acres open for leasing, the number of wells drilled per year varies slightly between Alternative E (3.6 wells) and the No Action Alternative (4.8 wells).

Employment

The drilling and completion of an oil well requires a crew of approximately seven full-time employees (FTE). In addition to the crew members, there are several service and supply companies that contribute to well development. One oil well could involve the services of up to 25 employees from drilling to completion. Of the total number of persons involved in the well production, approximately four to five live on site. The other service employees are in the area only temporarily and typically stay in nearby hotels on a short-term basis. It is not likely that the employees related to the oil and gas exploration and completion of wells within the Monticello FO are residents of San Juan County (personal communication between Jeff Brown, Monticello FO, and Laura Burch, SWCA, on August 11, 2006).

Given the small number of wells predicted annually per alternative (five wells in Alternatives A–D and three in Alternative E) it is reasonable to assume that the same crew and service professionals (or equivalent in the amount of employees) would be responsible for all three to five wells throughout production. This suggests that the overall contribution to San Juan County employment from oil well development is minimal, regardless of alternative. It is not likely that the employment derived from the drilling and completion of wells in the area would positively impact poverty or unemployment rates in San Juan County.

The production of a single well can last up to 20 years and it is during this time that local citizens are employed by oil and gas companies. These oil and gas production jobs pay well (relative to other jobs within the county) and could employ up to 20–30 people throughout the life of the well. However, employment related to mining activities, including oil and gas development, only contributed 5.6% to the total employment in San Juan County in 2000 (see Section 3.12.4.2.6).

Production

While the majority of mineral development activity currently occurring within the Monticello FO is oil production (493 producing oil wells versus 15 producing gas wells, per Section 3.8.2.1.1, Table 3.16), there is a potential for the number of gas wells to increase in demand for domestic production of non-renewable resources. Therefore, this analysis will look at the production of both oil and natural gas wells. It assumes that five wells would be drilled annually under Alternatives A–D and three wells under Alternative E; these wells may be any combination of oil or gas.

According to the Energy Information Administration (EIA), in January 2007 current-day oil price was $56.29 per 42-gallon barrel (EIA 2007). In 2004, the average yearly production per oil

well in Utah was 7,141 barrels of oil. Potential annual revenue per oil well is $401,967, assuming that 7,141 barrels are recovered (7,141 × 56.29). The life of each well is estimated to be 15–20 years. The rate of production per oil well declines approximately 10% per year after the initial year. Therefore, annual revenue per well would begin at $401,967 and decrease 10% per year throughout the life of the well.

As of December 2006, the current natural gas price according to the EIA was $6.65 per thousand cubic feet (MCF) for natural gas (EIA 2007). In 2004, the average yearly production per gas well in the state of Utah was 75,153 MCF (EIA 2007). For analysis purposes, potential annual revenue per natural gas well is assumed to be at the state-wide average of $499,767 (75,153 × $6.65). The life of each well is estimated to be 20 years. The rate of production declines approximately 10% per year after the initial year, according to the Utah Department of Natural Resources (UDNR 2004). Therefore, the recovery value would begin at $499,767 and decline 10% per year throughout the life of the well.

Fiscal Impacts

The drilling and completion of wells in the Monticello FO would have an impact on local and state governments resulting from services provided, tax, and other revenue received. Tax and royalty revenue would be realized for the life of the well, with diminishing returns after maximum production is reached. The severance tax and royalty revenue generated from natural resource development depends on the amount of the commodity produced. Given the uncertainty of the geology and the market, the quantification of revenue is somewhat speculative.

The severance taxes collected on mineral production are distributed within the state according to a formula published in state statutes. Severance tax revenues are distributed to a variety of state and local entities, including the state's general fund, the state highway fund, counties, cities, and towns. Local government entities within the Monticello FO will only benefit from a percentage of severance taxes collected on production within the study area. However, these entities will also benefit from severance taxes collected on mineral production occurring in other parts of the state (BLM 2003g).

In 2002 the severance tax rate for oil and gas development on Utah lands was 3% of the value up to and including the first $13 per barrel for oil and $1.50 per MCF of natural gas; and 5% of the value above these prices. The estimated ad valorem taxes for each mineral type are based on production and assessed values and current tax rates. Ad valorem taxes assessed on property associated with oil and gas operations generate tax revenue for the counties and with respect to this RMP, the greater the number of producing wells in the Monticello FO, the greater the generation of property taxes associated with oil and gas extraction assets.

Royalty revenue to the federal, state, and county governments equals approximately 12.5% of production revenue. The federal government returns 50% of the total royalties to the state where the mineral production occurs. The royalties are then distributed between the state and counties where the production takes place. Assuming the recovery value for one oil well is $401,967 per year, royalty revenues would be $50,246 per well at maximum production (401,967 × 0.125). If the recovery value for one natural gas well were $499,767 per year, royalty revenues would be $62,471 per well at maximum production (499,767 × 0.125).

San Juan County receives a portion of federal mineral lease monies returned to the State of Utah by the federal government through the Permanent Community Impact Fund Board (CIB). The

funds received by the county for infrastructure projects would likely continue in amounts similar to recent contributions regardless of the BLM alternative selected because CIB funding is not directly correlated with production by county but rather by applicant eligibility.

4.3.12.2.5.4. Alternatives A–E

Under Alternatives A–D impacts from oil and gas development would be virtually the same regardless of alternative selected because the acreage open for development varies by less than 11% and the estimated total wells drilled over the life of the plan varies by nine (see Table 4.90). Alternative E allows for less development, with 19 fewer wells than Alternative A and a 38.7% reduction in acres open for development.

4.3.12.2.5.5. Alternative A

Trends related to employment would remain unchanged as long as the wells continued to be drilled and produced. Throughout the life of the plan, it is assumed the FTE required to drill and complete the well would remain at seven, and that the approximately 25 well service employees would remain unchanged. Under all alternatives, the employees responsible for long-term production of the oil and gas wells (approximately 30–40 employees) would remain the same as current conditions. Because there are so few wells anticipated per year, hiring additional employees to drill and produce wells would not be because as the current number of employees is sufficient to meet the demand. Poverty and unemployment rates would not be positively or adversely impacted. Under all alternatives, local employment resulting from oil and gas activities would continue to have a negligible impact on the job base in San Juan County.

The annual estimated royalty revenue from five oil wells would be $251,225. The annual estimated royalty revenue from five natural gas wells would be $312,350 (Table 4.91). The range of economic contributions would vary depending on the combination of oil and gas wells that are producing annually.

Table 4.91. Annual Estimated Royalty Revenue from Oil and Gas Development Per Alternative

	Royalty Revenue–Oil *	Royalty Revenue–Natural Gas*
Alternatives A–D: 5 wells	$251,225	$312,350
Alternative E: 3 wells	$150,735	$187,410

*Revenue at maximum production, decreasing 10% annually.

Assuming that producing wells occur on public lands, 50% of the royalties revenues listed in Table 4.91 would go to the state, 10% of the royalties would go to the General Fund of the US Treasury, and 40% of the of royalties would go to the special purpose accounts of the reclamation fund (BLM 2005n).

Production taxes, such as severance taxes and ad valorem taxes resulting from oil and gas development would increase or decrease in proportion to the amount of production occurring within San Juan County. Overall, the contributions to the local economy from production taxes would be similar to current contributions. Annual oil and gas lease rental would also continue to contribute to the economy in a similar fashion under all alternatives.

4.3.12.2.5.6. Alternative B

Government revenues in the form of royalties from oil and gas production under Alternative B would be similar to those under Alternative A, given that the total well potential between the alternatives is similar (73 under Alternative A and 66 under Alternative B). Although the number of wells under Alternative B is slightly lower, the number of acres open for oil and gas development is slightly greater under Alternative B by 0.3% (see Table 4.90). Employment levels would remain similar to Alternative A.

4.3.12.2.5.7. Alternative C

Government revenues in the form of royalties from oil and gas production under Alternative C would be similar to those under Alternative A, given that the total well potential between the alternatives is similar (73 under Alternative A and 74 under Alternative C). The number of acres open for oil and gas development is slightly greater under Alternative C by 8.2% (see Table 4.90). Employment levels would remain similar to Alternative A.

4.3.12.2.5.8. Alternative D

Government revenues in the form of royalties from oil and gas production under Alternative D would be similar to those under Alternative A, given that the total well potential between the alternatives is similar (73 under Alternative A and 75 under Alternative D). The number of acres open for oil and gas development is greater under Alternative D by 10.5% (see Table 4.90). Employment levels would remain similar to Alternative A.

4.3.12.2.5.9. Alternative E

Alternative E would have the greatest potential for adverse economic impacts when compared to the other alternatives. Government revenues in the form of royalties from oil and gas production under Alternative E would be less than those under Alternative A, given that the total well potential between the alternatives varies by 19 wells (73 under Alternative A and 54 under Alternative E). Compared to Alternative A, the number of acres open for oil and gas development is 38.7% less under Alternative E (see Table 4.90). Annual estimated royalty revenue generated under Alternative E would be $100,490 less for oil and $124,940 less for gas than Alternative A (see Table 4.91). Employment levels are unlikely to be adversely impacted by Alternative E because it is probable that the same number of employees would be required to service three wells under Alternative E as would be required to service the five wells under Alternatives A–D. Further, given that oil and gas development is not a major contributor to the local workforce and the annual reduction under Alternative E is 1.4 wells annually, it is not likely that local employment levels will be adversely impacted by Alternative E in comparison to Alternatives A–D.

4.3.12.2.6. Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Social and Economic Conditions

4.3.12.2.6.1. Alternatives A–D

No actions to maintain wilderness characteristics on lands outside of WSAs are proposed under Alternatives A–D, resulting in no additional impacts on socioeconomics.

4.3.12.2.6.2. Alternative E

Alternative E manages 582,357 acres of non-WSA lands with wilderness characteristics to provide maximum protection for the qualities of naturalness, outstanding opportunities for primitive and unconfined recreation or solitude, and supplemental values where present. As with VRM, this resource itself is not a management tool, but relies on restrictions on other resources to achieve its management goals. The tools used include restrictions on vegetative and fuels treatments, travel management, minerals and energy, lands and realty, and recreation. These restrictions are identical to the restrictions discussed in Chapter 4 for each of these resources under Alternative D, and the socioeconomic impacts are similar for each of these resources so restricted.

As with VRM management, the restrictions on development under this alternative have the greatest potential to restrict economic opportunities for those whose livelihood depends all or in part on the restricted activities. This would be particularly true in the case of minerals development and motorized recreation. Conversely, those whose livelihood or even sense of well-being depends on values associated with wilderness characteristics and primitive recreation would receive the greatest benefit under Alternative E. As with VRM, this alternative could benefit those businesses that rely on those recreational visitors who value wilderness qualities.

It is difficult to predict whether the potential socioeconomic gains described above will outweigh the socioeconomic losses which could result from this alternative. Managing lands for wilderness characteristics may have some positive benefits to the local economy, above and beyond benefits to individual users of these areas. There is extensive literature that argues that protecting lands as wilderness provides local, regional, and even national economic benefits. An example is a recent study published by the USFS that summarizes much of the relevant research on this topic, with a special emphasis on recreation. While most published research emphasizes designated wilderness, some of these arguments may be applicable to non-WSA lands with wilderness characteristics (Bowker et al. 2005).

4.3.12.2.7. Impacts of Recreation Decisions on Social and Economic Conditions

Proposed recreation management decisions for the Monticello FO have the potential to impact local and regional socioeconomic conditions. The socioeconomic impacts would primarily be in the form of income and employment effects in the economies that serve the recreational user. Future recreational uses could also affect the fiscal resources and services by the BLM and other government agencies.

However, the relationship between changes in land use decisions pertaining to recreational use and the associated social and economic impacts are difficult to quantify. Therefore, some assumptions have been made:

- Increasing recreational opportunities could positively affect visitation, which could also benefit local businesses and overall traveler spending in the region.
- Improving the recreational experience would have a positive effect on the social component of recreation, potentially increasing visitation.
- With increased recreational use, local businesses would benefit economically. According to a state-commissioned study by D.K. Shifflet & Associates, non-resident travel within Utah has consistently been about double that of resident tourism, measured in terms of visitor-days

(D.F.Shifflet & Associates 2006). For 2005, for example, the study found that non-resident visitor days accounted for 66.2% of state-wide visitor days. Not all visitors, of course, are recreational visitors (e.g., business, visiting family), nor are all recreational visitors using BLM lands. Given the lack of other data sources, this figure seems reasonable for purpose of estimating visitor spending, in that non-resident visitors typically spend more per day than resident visitors. It is likely that this figure (66.2%) is too high for some activities and too low for others.

Data on expenditures per local (defined as Utah resident) and non-local visitor day were obtained from the above source. That study estimated non-resident visitor spending state-wide at $103 per day, with resident spending state-wide averaging $61 per day. A large part of the difference was due to spending on lodging, implying that many resident visitors are not on overnight trips, which may be representative of the planning area.

With the trend toward increased recreation within the Monticello FO, user conflicts are likely to remain an issue regardless of the alternative selected. User groups, as defined in Section 4.3.8, Non-WSA Lands with Wilderness Characteristics, include motorized (on-road), motorized (off-road), non-motorized, non-mechanized, river floating, and specialized recreation. Increases in conflicts between user groups have the potential to adversely impact visitor experience in the area. The adverse impact to the visitor regarding their recreation experience would likely be short-term. However, long-term adverse impacts to the county's economy could be possible because users would choose to recreate in other areas where they feel they are more likely to have a positive recreational experience. This would contribute to a loss in traveler spending in the area.

4.3.12.2.7.1. Alternative A

As stated in Section 3.12.4.2.7, tourist spending has grown slowly and consistently since the 1990s. Under current management actions recreational use is projected to continue to follow existing trends. Local and regional social and economic impacts from recreation and tourism would be similar to those experienced currently. Visitation to local attractions would be anticipated to follow the existing continual growth trend.

Employment in the travel and tourism-related industries would remain around 1,083, the number of tourism-related jobs reported by the Utah Division of Travel Development in 2003. Tourism-related spending in San Juan County would total approximately $35.5 million dollars (adjusted for inflation), as it did in 2003. Travel and tourism-related employment would continue to account for approximately 15% of San Juan County's total job base. Expenditures for leisure and hospitality services are taxed at the local and state level and are a benefit to counties. Under Alternative A, tax revenue from visitor spending (i.e. hotel, restaurant, and sales tax) would similarly contribute to the local government's fiscal resource base.

The number of activities impacted by launch limits and trip sizes within SRMAs would be least restrictive and most similar to current conditions under Alternative A. Economic contributions from these groups would also be similar since reductions in permits would not change under Alternative A.

Under the No Action Alternative, 611,310 acres would be open to OHV use and 1,329,430 acres would be designated as limited. As evidenced in the Monticello FO AMS, OHV ownership has increased substantially throughout the last five years within San Juan County and throughout the

state. OHV use has increased from 1,833 riders reported in 2002 to 12,060 riders in 2005, as discussed in Section 3.10.4.1. Despite the increase in OHV uses within the Monticello FO, the majority of riders stay on existing roads. The best professional judgment from BLM Monticello FO indicates that acres currently designated as limited, and acres designated as limited across all alternatives, are sufficient in meeting the current demand and foreseeable future demand (personal communication between Gary Torres, Monticello FO, and Laura Burch, SWCA, on Sept. 7, 2006).

This alternative would allow for OHV users to access the largest number of areas open to OHV compared to other alternatives and more than 1.3 million acres of routes designated as limited. This alternative most closely represents the current conditions for OHV access and as such it is likely that the economic contributions from the user group would be similar to current contributions. Because this alternative has the lowest number of acres designated as limited, it is possible that densities in OHV users on existing roads could increase, but an adverse impact to users and indirectly the local economies is not anticipated. Socioeconomic contributions from OHV use would remain similar to current conditions because the number of riders using the area would be similar to 2005 visitation numbers (12,060 OHV users). Contributions to the local economy from hotel taxes, retail, maintenance, and restaurant sales would continue along the current path.

Recreational users who require or prefer motorized access would enjoy the most short-term benefits under Alternative A. Individuals or groups who value solitude would have fewer places to enjoy that did not allow motorized access, potentially decreasing their recreational experience and/or social well-being. Resource degradation-related impacts to soil, water quality, cultural resources, wildlife and scenic quality and other impacts associated with OHV use and cross-country travel would adversely impact recreational opportunities and visitation in the long-term.

4.3.12.2.7.2. Alternative B

Decreases in group and trip sizes and boat launches per day or visit within SRMAs could decrease the number of visitors to the planning area and patrons to San Juan County communities. However, decreases in visitors to the area would only occur if use within the SRMA is at capacity. For example, during the high-water season a reduction in launch limits for the San Juan River may limit the number of visitors likely to run the river and patronize local businesses. Limits to group numbers and trip sizes in SRMAs such as Grand Gulch, where permit use is not currently at capacity, would not adversely impact the local economy because visitors would not be turned away.

In recreation areas where use is at capacity, the decreases in group and trip sizes could result in lower recreation-based income and jobs and thus, adversely affect the local economy. The fiscal resources of the local county government would also be indirectly impacted by a decrease in recreational visits to the county. Expenditures for leisure and hospitability services are taxed at the local and state level and are a benefit to counties. It is possible that local government revenue from hotel, restaurant, and sales tax on goods purchased would be reduced under Alternatives B and E. However, because the proportion of total recreation expenditures versus expenditures from local residents and/or non-recreational visitors is not possible to quantify, it is generally concluded that a decrease in recreational use in the area would lead to a decrease in tax revenues for the local government.

The 25% reduction in launch limits per year on the San Juan River would equate to a 25% reduction in revenues for the BLM's fee demonstration program (if the program is operating at capacity), thus adversely impacting services to the public. It is likely that the reduction in launch limits would only prohibit river users during peak season, thus limiting the amount of revenue generated for the fee demonstration program and local retailers. The temporary reduction in launch limits could have a long-term, indirect, adverse impact on local businesses because 25% fewer people would contribute to the local economies prior to or after river trips. However, these impacts would be short-term as peak flows would likely last less than one month's time. During low-water years and non-peak seasons when river use is not at capacity, the reduction in launch limits would have a negligible impact on the local economy.

Under Alternative B, zero acres would be designated as open to OHV use, with all OHV routes (1,397,417) designated as limited. The number of acres designated as limited under Alternatives B and E are not anticipated to reduce the level of OHV travel in the planning area because the number of acres designated as limited would be greater than the No Action Alternative, which appears to meet the demand of OHV users.

Groups or individuals who value solitude and non-motorized activities would have the most places to enjoy under Alternatives B and E, perhaps enhancing the visitor experience. This alternative is least responsive to the desires of individuals and groups who feel public lands should remain open to motorized vehicle access, potentially detracting from their social well-being. The potential for adverse impacts as a result of resource degradation-related OHV use would be smallest under this alternative, thus having a long-term beneficial impact on visitation to the area.

4.3.12.2.7.3. Alternative C

Under Alternative C impacts to socioeconomics from recreation would be similar to Alternative A given similar group and trip sizes and launch limits. Alternative C would provide more potential for increased visitation and economic contribution to regional economies than Alternative B.

This alternative would designate 2,311 acres as open to OHV use, with 1,362,142 acres designated as limited for OHV use. Economic contributions to the local economy as a result of Alternative C would be similar to Alternative A.

4.3.12.2.7.4. Alternative D

Impacts to socioeconomics from recreation would greatest under Alternative D. Recreational opportunities would be greatest under this alternative, with a 29% increase in trip size and 11% increase in launch limits on the San Juan River, increased group and trip sizes throughout the planning area, and unlimited OHV group sizes on designated routes. Increasing access to recreational opportunities may increase visitation to the area and potentially increase overall tourist spending. The greater the number of visitors to the area, the greater the demand for goods and services; thus an increase in employment and spending in the tourism-based industry is likely. Under Alternative D, impacts to the local and regional economy would have long-term beneficial impacts.

Under Alternative D, 2,311 acres would be designated as open to OHV use, with 1,780,807 acres limited to designated routes. Economic contributions to the local economy as a result of Alternative D would be similar to Alternative A.

From a social perspective, impacts from recreation could have positive short-term effects because various user groups have the greatest amount of access under Alternative D. However, the long-term impacts of increased recreation use could be adverse, as crowding, user conflicts, and the degradation of the environment could detract from the visitor experience.

4.3.12.2.7.5. Alternative E

Alternative E includes management prescriptions to protect wilderness characteristics on 582,360 acres of non-WSA lands with wilderness characteristics. The overall management prescriptions associated with this alternative would have a stronger emphasis on primitive, semi-primitive, and non-motorized uses than any of the other alternatives. Fewer recreational facilities would be developed. Expenditures by individuals who either desire increased OHV access or developed recreational facilities might decline relative to the other alternatives. These expenditure reductions could cause a loss of income and jobs in the socioeconomic study area. For individuals seeking more primitive and non-motorized recreational experiences, visitation and resulting expenditures and related economic activity, as well as satisfaction, would likely be greatest under this alternative.

As discussed earlier under non-WSA lands with wilderness characteristics, some have argued that the very existence of wilderness characteristics within an area can provide economic benefits to the local economy. To the extent that managing additional lands to preserve wilderness characteristics attracts clients and employees to the planning area, there could be corresponding positive economic benefits to local communities. Local businesses that benefit from the preservation of non-WSA lands, such as Wilderness Quest, would benefit the most from Alternative E.

In a recent comprehensive study completed by the USFS National Use Visitor Monitoring Program for the Moab FO (USFS 2007), the top four activities on BLM lands in Moab mentioned by respondents were (1) hiking/walking/trail running, (2) bicycling/mountain biking, (3) driving a passenger vehicle for pleasure, and (4) viewing natural features. Taken together, this accounted for more than half the responses. Given that the driving answer was in reference to paved roads, these results strongly suggest that OHV use is not necessarily what pushes the recreation economy. The described activities all could benefit from Alternative E and all these groups could be spending in the local economies. Although this study was done for the Moab FO, it does border Monticello and arguably Moab is a better known destination for OHV enthusiasts. The study included both resident and non-resident recreationists.

Under Alternative E, impacts to socioeconomics from recreation would be similar to Alternative B, given similar group and trip sizes and launch limits. Identical to Alternative B, this alternative would result in the closure of 423,698 acres to cross-country OHV use and 1,359,417 would be designated as limited for OHV use. Whether potential economic losses resulting from restrictions on some recreationists would be offset or surpassed by economic gains from other types of recreationists cannot be predicted in this document.

4.3.12.2.8. Impacts of Special Designations Decisions on Social and Economic Conditions

4.3.12.2.8.1. ACECs

Protecting the specific, identified relevance and importance values of ACECs limits activities that are considered incompatible with specific values and resources of concern. Specifically, mineral development and extraction would be limited as a result of ACEC designations. It is important to note the ACEC designation does not completely restrict development. Standard stipulations and controlled surface use are permitted in areas that do not compromise the values or resources of concern. Mineral development with NSO (i.e., directional drilling) is also permitted within ACECs. See Table 4.92 for ACECs by mineral leasing stipulations.

Table 4.92. ACECs by Mineral Leasing Stipulation

Leasing Stipulation	Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
Closed	292,289*	57%**	310,651	60%	291,605	56%	287,492	55%	399,345	77%
No Surface Occupancy	95,246	19%	62,698	12%	35,822	7%	9,736	2%	32,802	6%
Special Stipulations	122,335	24%	102,825	20%	101,572	19%	71,093	14%	65,028	12%
Standard Stipulations	3,577	1%	44,884	9%	92,115	18%	152,809	29%	23,940	5%

*Acres proposed within Monticello FO

**% of total ACECs

The designations of ACECs would have minor to substantial, negative impacts on minerals resource extraction and development because they would exclude lands from minerals development and lower the number of locations where potential wells could be drilled. The lower number of locations could indirectly lead to a lower yield and commercial supply of oil and natural gas and fewer royalties paid to the federal government and/or the State of Utah. An approximate monetary impact would be difficult to estimate because desired future locations of development in proposed ACEC sites are unknown. However, the development area with the greatest number of wells projected to be drilled annually is the Blanding Sub-basin, with 3–13 wells drilled per year, according to the Monticello FO RFD. Therefore, if a proposed ACEC was within the Blanding Sub-basin there would be greater potential for adverse economic impacts to potential oil and gas developers and subsequently local and federal governments in comparison to the other development areas. The Paradox Fold is the development area with the second highest projected number of wells per year, with 1–6 wells. The Monument Upwarp is predicted to have 1–2 wells drilled per year, and consequently the smallest chance to be adversely impacted by the ACEC designation with respect to oil and gas development.

Under all alternatives OHV use would be allowed in ACECs on designated routes, although the miles of Class D roads would vary slightly between alternatives (see Table 4.144). Allowing OHV access within ACEC designations may be beneficial in the long-term for socioeconomics

because opportunities would remain available for recreational access. Revenue generated in local communities by OHV users would be similar to current conditions.

Commercial-type travel (including motorized/mechanized recreational vehicle use) within the planning area would be allowed under Alternatives A, B, and E, but the impacts on travel would be negligible because no restrictions or prohibitions are specified under these alternatives.

Under Alternatives B, C and E commercial-type motorized or mechanized tours and events would be seasonally prohibited (i.e., SRPs would not be issued) for routes within pronghorn, bighorn sheep, and elk crucial habitat and lambing and rutting areas; thus having minor short-term adverse impacts on travel. However, private motorized or mechanized use within ACECs would be allowed throughout the year and not subject to the seasonal commercial restrictions (see Section 4.3.16, Travel Management, for the proposed times when travel routes would be closed or limited to designated routes in order to protect these wildlife species). Under Alternative D there would be no private or commercial recreational travel restrictions through crucial wildlife habitat.

4.3.12.2.8.2. WSAs

The Monticello FO contains 13 WSAs totaling 386,027 acres (or approximately 21% of BLM lands). WSA designations would continue to apply across all alternatives, including the No Action Alternative (Alternative A), and would be managed in a manner that does not impair their suitability for congressional designation (BLM 1991c). These designations are non-discretionary and, thus, are beyond the scope of this EIS's analysis.

4.3.12.2.8.3. WSR Designations

Alternatives A and D do not recommend WSR designations. Alternative B recommends 92.4 river miles be designated as WSRs including Segments #1–3 of the Colorado River, Indian Creek, Fable Valley, Dark Canyon, San Juan River Segments #1–5, and Arch Canyon. Alternative C recommends that 18.4 river miles be designated as WSRs including Segments #2–3 of the Colorado River and Dark Canyon (see Section 4.3.14.4.3, WSRs – Alternative C).

Management prescriptions for mineral activities in riparian and floodplains within WSR designations do not allow surface occupancy. Therefore, Alternatives B and E would adversely impact mineral resource extraction and development because they propose the greatest amount of river miles as WSR and lower number of locations where wells could be drilled. This lower number of locations could potentially lead to a lower yield of oil and natural gas and fewer royalties paid to the federal government and/or the State of Utah.

The designation of WSRs under Alternatives B, C, and E could potentially lead to an increase in tourism revenue to the BLM and local communities, thus having a long-term, beneficial impact on the local economies. The designation of rivers and/or river segments could attract more people to the area who enjoy the type of recreation that often accompanies these designations (including high scenic qualities and opportunities for solitude). The increase in tourism based on river recreation could lead to increased revenue to local river running companies, increased permit revenue, and increase in tourist dollars spent within nearby communities.

Within the proposed WSRs, under Alternatives B, C, and E, OHV use would be limited to designated routes.

4.3.12.2.9. EFFECTS OF TRAVEL DECISIONS ON SOCIAL AND ECONOMIC CONDITIONS

Socioeconomic impacts from travel-related decisions would likely result from the recreational use of OHVs. Impacts resulting from the closure and designation of OHV routes are discussed in Section 4.3.12.2.7, Effects of Recreation Decisions on Social and Economic Conditions.

4.3.12.2.10. IMPACTS OF VISUAL RESOURCE DECISIONS ON SOCIAL AND ECONOMIC CONDITIONS

4.3.12.2.10.1. Alternatives A–E

The demand for a range of recreation opportunities would not be limited as a result of VRM classifications, so impacts to socioeconomics from recreational visitation would be minor under all alternatives. Opportunities for recreation with high levels of scenic quality (in VRM Class I and II designated areas) will remain throughout WSAs, ACECs, SRMAs, and along WSRs. See Section 4.3.12.2.9 for more details on recreation impacts to socioeconomics.

Under all alternatives areas available for oil and gas leasing subject to standard or special stipulations would be managed under VRM Class III or IV objectives (depending on inventory), and areas that inventory as VRM Class II but are in areas open to leasing subject to standard or special stipulations would be managed under VRM Class III objectives, unless otherwise specified in the management prescriptions. Mineral activities in designated VRM Class I and II areas, if allowed, would be subject to at least NSO stipulations. It is difficult to accomplish oil and gas activities of any kind (directional or otherwise) under VRM Class I and II objectives. Table 4.93 illustrates the percentage and acres of land open to mineral development based on VRM classification.

Alternative D would have the least amount of lands under VRM Class I and II objectives, and thus the most acres open for oil and gas exploration and development. Beneficial impacts to socioeconomics would be greatest under this alternative because developers would have the greatest number of acres open to standard and special stipulation leasing and the greatest amount of revenue potential. Impacts to socioeconomics would be slightly less under Alternative C with 7.8% less land under VRM Class III and IV. This decrease could result in a decrease in potential revenue.

Table 4.93. VRM Class Acreages by Alternative

Class	Alternative A/ VRM Inventory	Alternative B	Alternative C	Alternative D	Alternative E
VRM I	371,575	497,668	425,179	390,424	998,370
VRM II	355,112	250,641	132,001	8,838	111,478
VRM III	416,806	426,350	531,920	692,741	264,369
VRM IV	637,875	608,463	693,995	691,119	407,459
Subtotal III and IV	1,054,681	1,034,813	1,225,915	1,383,860	671,828
Total*	**1,781,368**	**1,783,122**	**1,783,095**	**1,783,122**	**1,781,676**

Source: BLM 2007d.

*Acreage figures may vary by alternative due to the changes in GIS technology and variances in shapefiles.

Compared to Alternative D, revenues from oil and gas development could be adversely impacted, as 17.4% fewer lands would be open to leasing in designated VRM Class III and IV areas. Economic impacts from Alternatives B would be similar to Alternative A because there is only a 1.2% decrease in VRM Class III and IV areas under Alternative B.

When compared to Alternative A, Alternative E places the greatest restrictions on development to protect VRM with a 21% decrease in VRM Class III and IV lands. As discussed earlier, the restrictions to protect visual resources are decisions within other resources that can impact visual quality. Restrictions under this alternative to protect scenic qualities include restrictions on vegetative treatments and fuels management, travel management, minerals and energy, lands and realty, and recreation. The restrictions on development under VRM classes I and II under this alternative have the greatest potential to restrict economic opportunities for those whose livelihood depends all or in part on the restricted activities. This would be particularly true in the case of minerals development and motorized recreation. Conversely, the scenic qualities of the planning area that attract visitation would receive the greatest degree of protection under Alternative E. This could positively impact those businesses that rely on that type of recreation visitation, including lodging, restaurants, and outfitting.

The exact number of oil and gas activities that would be restricted as a result of VRM Class I and II designation is difficult to speculate given that future proposed well locations are unknown at this time. Impacts to oil and gas development would occur in locations where drilling would have occurred absent the VRM restrictions. To the extent that VRM precludes development, there would be an adverse economic impact. Because such a large number of acres are open to development (over one million under Alternatives A–D and 671,828 under Alternative E) and the relatively small number of wells proposed over the life of the RMP (75 wells maximum), restrictions on economic opportunities would be minor to moderate depending on desired well locations.

4.3.12.2.11. Impacts of Woodlands Decisions on Social and Economic Conditions

4.3.12.2.11.1. Alternative A

In 2006 the Monticello FO issued 556 wood gathering permits. Approximately 80–90% of the permits issued in a given year are to Navajos who live on the Navajo Reservation. The high percentage of Native American permittees is due to the fact that many use the wood for subsistence living. The wood is used for heating their homes and other domestic needs. The Navajos harvest wood on BLM lands because wood gathering is not permitted on the reservation.

Management decisions under Alternative A would allow commercial and private woodland products harvesting within the entire planning area, except for 386,027 acres within WSAs, developed recreation areas, and other areas designated as excluded from harvesting. Accordingly, approximately 1,309,894 acres (73% of the PA) would be open to woodland harvest and the remaining 27% would be closed because of WSA-protection constraints under the IMP. There would be few restrictions on harvesting woodland resources under this alternative.

Wood gathering on Cedar Mesa would continue under the No Action Alternative. Current conditions on Cedar Mesa illustrate the damage that unpermitted wood gathering has caused in

the area. Cross-travel has caused damage to cultural sites and impaired the WSA. Under this alternative damage to the area would likely continue.

Identified as a tribal trust issue in the RMP scoping process, cottonwood and willow harvesting in riparian areas for ceremonial purposes would be allowed under all alternatives.

4.3.12.2.11.2. Alternative B

Alternative B would allow commercial and private woodland products harvesting (with permitted off-road travel to collect wood) on a total of 730,074 acres within designated woodlands harvesting zones. This would permit woodland harvesting on approximately 41% of the planning area, with 59% of the planning area (1,055,053 acres) closed to woodland harvesting for products use. The closure of 38% more of the PA, compared to Alternative A, could have moderate social and economic impacts on the groups that depend on wood gathering in area for subsistence.

Under this alternative permitted harvesting of woodlands on a substantial portion of the planning area would be required. Restrictions on cross-country OHV use to gather wood could potential minor adverse impacts on the groups who use the vehicles gather wood in the planning area.

Cedar Mesa would be closed to wood gathering under this alternative. Impacts to individuals who gather wood in this area would be adverse because current harvesting practices in the area would cease. Private and commercial harvesting would be accessible on Montezuma Ridge, approximately 40 miles away from Cedar Mesa. This would likely result in an economic hardship for individuals who gather wood in this area because traveling to an area 40 miles away would be costly (in terms of gas for vehicle and vehicle maintenance) for a population that is highly impoverished.

4.3.12.2.11.3. Alternatives C and D

Under Alternatives C and D there would be fewer number of acres (841,938) potentially available for woodland harvesting compared to Alternative A (47% of the planning area compared to 73% under Alternative A).

Restrictions on cross-country OHV use to gather wood could have potential minor, adverse impacts on the groups who use the vehicles to gather wood in the planning area. Under Alternatives C and D 2,311 acres would be designated as open to cross-country travel (0.1% of the planning area). The remaining acres open to OHV use would be designated as limited to existing roads.

Cedar Mesa would remain open to woodland harvesting under these alternatives. Thus, groups who use this area to gather wood for subsistence living would be able to continue to do so with restrictions on cross-country travel.

4.3.12.2.11.4. Alternative E

Under Alternative E, the impacts to socioeconomics from woodland resources would be similar to the impacts discussed under Alternative B because the management actions would be similar. However, under Alternative E 31% (548,477 acres) of the Monticello PA would be open for woodland harvesting versus 41% (730,074 acres) under Alternative B. Under Alternative E, approximately 582,357 acres of non-WSA lands with wilderness characteristics within the

planning area would be protected from surface disturbances, including disturbances caused by woodland harvesting.

Because Alternative E closes the greatest amount of acreage to woodland harvest, long-term, adverse impacts to private and commercial woodland harvesting individuals and groups would be greatest. Cross-country OHV restrictions would be greatest under Alternative E, with 580,772 acres closed. Current harvesting practices would no longer be permitted on Cedar Mesa. While the resource would still be available under Alternative E, permittees would have to modify collection practices and travel longer distances to obtain wood.

4.3.12.3. Summary of Impacts

Overall, the local socioeconomic conditions would not experience substantial adverse impacts from BLM resource management decisions under Alternatives A–D. With significantly more acres closed to surface disturbing activities under Alternative E, the potential for revenue generating activities, such as mineral development or OHV use, would likely result in decreases in contributions to the local economy. However, tourism-based revenue from individuals who prefer hiking, backpacking, and sight-seeing in a wilderness-like setting would potentially be greater under Alternative E. Many management decisions for resources such as air quality, fire management, health and safety, lands and realty, paleontology, soils and watersheds, special status species, and woodlands would have minor impacts on social and economic conditions. Resource management decisions for cultural resources, livestock grazing, minerals, non-WSA land with wilderness characteristics, recreation, special designations, travel, and visual resource management would have greater impact than those listed above. Population, employment, and local revenue would remain relatively unchanged with the implementation of Alternatives A–D and may decrease slightly under Alternative E. The influence of proposed resource management decisions would not contribute to a substantial change in the economic diversity of San Juan County. See Table 2.2 for a full summary of the impacts to socioeconomic conditions.

4.3.12.4. Mitigation Measures

No mitigation measures have been identified for impacts to social, economic, and environmental justice conditions.

4.3.12.5. Unavoidable Adverse Impacts

No unavoidable adverse impacts to social, economic, and environmental justice conditions resulting from resource management decisions were identified.

4.3.12.6. Short-term Use versus Long-term Productivity

Short-term use of resources in the planning area would have negligible impacts on the long-term social and economic health and stability in San Juan County.

4.3.12.7. Irreversible and Irretrievable Impacts

There are no irreversible and irretrievable impacts to social, economic, and environmental justice conditions.

4.3.13. SOILS AND WATER RESOURCES

This section discusses impacts to soils and water resources from management actions and resource uses discussed in Chapter 2. The existing conditions of soils and water resources are described in Chapter 3.

All of the alternatives would impact soil and water resources within the Monticello PA, because all include actions that would result in surface disturbance of some kind. Surface disturbance would impact soils and water resources to varying degrees, depending on the amount, location, and type of surface disturbance; the soil type; the time of year; and the surface hydrology. Surface-disturbing activities that currently occur and that are expected to continue include grazing, oil and gas and mineral exploration and development and associated access routes, recreation and off-highway vehicle (OHV) use, and woodland harvest and other forms of vegetation removal and treatments.

For the purposes of this broad scale analysis, the primary indicator of impacts to soils and water resources is the amount of surface disturbance caused by management decisions made for other resources, particularly surface disturbance that occurs in highly erodible, reclamation-limited, or other sensitive soils. Another important indicator of impacts to water resources is a decrease in water quality conditions in perennial streams, including levels of suspended sediments, sediment bedload, dissolved solids, nutrient loads, bacteria counts, and water temperatures. Once these parameters exceed the State water quality standards at a site, the perennial stream is listed on the 303d list, which is the final indicator of poor water quality conditions. The soil limitations with the highest potential to impact soils and water resources are wind erodibility, water erodibility, and shallow root depth. All factors were analyzed and varying degrees of risk were evaluated with regards to these limitations.

All soils in the Monticello PA are susceptible to accelerated erosion, but sensitive soils are more susceptible to impacts. Surface-disturbing activities could result in any of the following impacts under any alternative: increased soil erosion and sedimentation, decreased soil productivity, changes to quantity and quality (e.g., salinity) of surface water and groundwater, loss of vegetation or prevention of revegetation, or introduction of noxious weeds and the attendant increases in water use (e.g., tamarisk uses large quantities of groundwater), and/or changes in soil chemistry and productivity. Analyses of impacts to soil and water resources in this section are based upon the factors contributing to site degradation and their inherent risks (Table 4.94), according to SSURGO soils mapping for the Monticello PA.

Some sites are at risk of degradation because surface layer wind and/or water erodibility factors are high. Kw refers to the relative ease of water erosion. The slope factor accounts for the tendency of steeper slopes to erode more easily. The wind erodibility group refers to the relative ease of wind transport of surface materials.

Other sites are at risk of degradation due to reclamation-limiting factors (i.e., factors that prevent soils from being fully reclaimed following surface disturbance). See Table 4.79 for a list of these factors. In reclamation-limited soils, one or more factors make site reclamation difficult in semi-arid environments, including alkalinity, droughty soils, soil rooting depth, salinity, available water capacity, and sodium adsorption. Available water capacity refers to the amount of water available for plant uptake. Salinity refers to the amount of salt within soils that can be dissolved in surface waters. The sodium adsorption ratio refers to the amount of sodium that can be held by

the soils and influence nutrient uptake. Rooting depth refers to the depth of soil, which influences how far plant roots can grow. Finally, alkalinity refers to soil pH, which generally limits plants' ability to establish when it is higher (i.e., more basic).

An important soil component often affected by surface disturbance is the biological soil crust, comprised of cyanobacteria, lichens and mosses. These crusts help to stabilize soils, reducing erosion and increasing soil productivity. Biological soil crusts have not been mapped and could occur in most of the soils within the Monticello PA.

Table 4.94. Factors Contributing to Site Degradation and Their Inherent Risks*

Factors	High Risk	Moderate Risk	Low Risk	Restrictive Feature
Erodibility				
Kw Factor (surface layer) and Slope (sl)[1]	K ≥ .37, sl ≥ 10%; or K = .20-.36, sl > 30%	K = .20-.36, sl 10-30%; or K < .20, sl > 30%	K < .20, sl 10-30%; or sl < 10%	Water erosion hazard
Wind Erodibility Group (surface layer)	1, 2	3, 4, 4L	5–8	Wind erosion hazard
Limits on Reclamation				
Available Water Capacity (average to 40 inches; in/in)[2]	< 0.05	0.05–0.10	0.10 <	Droughty soils
Salinity3 (mmhos/cm; surface layer)	16 <	8–16	< 8	Excess salt
Sodium Adsorption Ratio4 (surface layer)	13 <	4–13	< 4	Excess sodium
Depth to Bedrock or Hardpan (inches)	< 10	10–20	20 <	Rooting depth
Alkalinity (pH of surface layer)	9.0 ≤	7.8–8.9	< 7.8	Excess alkalinity

* Draft parameters developed by the BLM's National Science and Technology Center, SSURGO soils mapping.

[1] K Factor of surface layer adjusted for the effect of rock fragments. Slope is the maximum value for the range of slope of a soil component within a map unit.

[2] Maximum value for the range of available water capacity for the soil layer; inches of water per inches of soil.

[3] Maximum value for the range in soil salinity.

[4] Maximum value for the range in sodium adsorption ratio.

Throughout this analysis, highly erodible soils, reclamation-limited soils, and biological soil crusts are collectively referred to as sensitive soils. Biological soil crusts are discussed only qualitatively and are not included in the tables. However, any of the other soil parameters may overlap in any area, and so acreages presented in this analysis are not additive. For example, a particular acreage may have soils with shallow rooting depth as well as high wind erodibility. Acreages are also only approximate, due to limitations in soil mapping techniques and the planning area-wide scale of analysis.

Decisions regarding the management of resources other than soil and water in the Monticello PA may affect soil and water resources either directly or indirectly. Those impacts may be beneficial or adverse, and are described below. Management decisions regarding air quality, lands and

realty, paleontology, socioeconomics, or wildlife resources would result in negligible impacts to soils and water resources. The impacts would be negligible because protecting air quality, making lands and realty decisions, allowing recreational fossil collection and scientific study of fossils, improving the local and regional economy, and maintaining habitat for non-listed wildlife species would not have surface-disturbance impacts on sensitive soils and soil crusts. Therefore, impacts from these management decisions were not analyzed.

4.3.13.1. ASSUMPTIONS

For the purposes of this programmatic-level analysis, the acreages disclosed in Table 4.95 to 4.100 are assumed to be evenly distributed across the smallest nominal geographic area represented in each table. The limitations of this type of broad-scale analysis are best seen in cases when surface disturbance is concentrated in areas that are highly sensitive. Site-specific National Environmental Policy Act (NEPA) analysis of impacts to soils and water resources would be required before individual project implementation for projects proposed in sensitive soils. Refer to Table 4.94 for factors that determine inherent risk of site degradation. Areas where surface disturbance would occur in critical watersheds, priority sub-basins, 100-year floodplains, within 100 meters (m) of a natural spring, and public water reserves would need to be analyzed on a site-specific basis.

The analysis of cultural resource decisions on soils and water resources was based upon acreage of watershed treatment allowed or not allowed due to the presence or absence of cultural resources. Watershed treatments would generally provide long-term beneficial impacts to soils and water resources. Restrictions on dogs and human waste disposal associated with cultural resource decisions were also considered, where dogs and human waste would adversely impact soils and water resources. The designation of Cultural Special Management Areas (CSMAs) would generally limit watershed treatments and provide restrictions on human waste disposal and pets.

The analysis of the impacts of fire management decisions on soils and water resources was based upon the acres of treatment by soil type. Due to the lack of specific areas designated for treatment each year under the proposed Draft Resource Management Plan (DRMP), the actual acreage of treatment in areas with soil limitations is difficult to quantify; therefore, a qualitative assessment of long-term impacts was made. Individual fire management projects will be analyzed at the implementation level with site-specific NEPA.

Under all alternatives, all BLM-administered lands in the Monticello PA would be placed in one of the following oil and gas leasing stipulations developed in the RMP: standard lease terms (SLT), timing limitations (TL), controlled surface use (CSU), no surface occupancy (NSO), and closed to oil and gas leasing. Impacts related to these categories and conditions would depend upon surface disturbance in areas with soil limitations. Generally, where areas are closed to disposal of mineral materials or NSO, there would be no surface disturbance and thus negligible or no adverse impacts to soils and water resources. Areas open to mineral use under standard lease terms or timing limitations would potentially have short-term adverse impacts to soils and water resources where surface disturbance would occur in limited soils. However, under all alternatives, the relative amount of potential mineral-related soil disturbance and groundwater withdrawal in the planning area is minimal and, consequently, would likely have negligible impacts to soils and water resources. Refer to Tables 4.1 – 4.3 for the estimated acreages of surface disturbance related to mineral development.

All alternatives would be subject to limits on surface disturbance related to paleontological resources. Recreational collectors may collect and retain reasonable amounts of common invertebrate and plant fossils for personal, non-commercial use. Surface disturbance must be negligible, and mechanized tools may not be used; therefore, the adverse impacts to soils and water resources from paleontological management decisions would be negligible.

Analysis of impacts of vegetation treatments was based upon total acres of treatment and a qualitative assessment of how that treatment would impact watershed condition. Total acres of treatment by water and/or wind erodibility risk and reclamation potential are included. Direct impacts to soils and water resources in critical watersheds, priority sub-basins, 100-year floodplains, or within 100 meters of a spring would require finer scale watershed hydrology data. Qualitative analysis of soils and watershed resource impacts was completed where these resources would be impacted.

4.3.13.2. Impacts Common to All Alternatives

4.3.13.2.1. Impacts from Soils and Water Decisions Common to All Alternatives

The BLM would manage soils and water resources to maintain watershed health and provide favorable conditions for water flow and maintain stable and efficient stream channels as required to provide for fish and wildlife habitat, recreation, and livestock use. All floodplains and riparian/wetlands would be managed in accordance with Executive Orders 11988 and 11990, sections 303 and 404 of the Clean Water Act, and the Endangered Species Act. Maintenance of satisfactory watershed conditions would be required as indicated by maintenance of riparian proper functioning condition (PFC) and Utah's Rangeland Health Standards and Guidelines for Grazing and Recreation. Impacts Common to All Alternatives for riparian PFC were analyzed in Section 4.3.11.1, Riparian Resources. These management decisions would result in beneficial impacts to soils and water resources by protecting and restoring watershed health, healthy soils and good water quality conditions.

Surface-disturbing activities that are currently occurring and are expected to continue include grazing, access to and maintenance of existing oil and gas wells and access roads, recreation and OHV use, and woodland harvest/vegetation removal. As a result of surface-disturbing activities in areas having soils prone to wind erosion, water erosion, or with limitations on reclamation, impacts common to all alternatives include soil erosion, sedimentation, and impacts to surface and ground water quantity and quality. Surface disturbance can result in loss of vegetation or prevention of revegetation, increased soil erosion and sedimentation, and increased salinity in surface waters. Erosion control practices for slopes greater than 20% would be the same for all alternatives, as per Utah's Non-Point Source Management Plan (UDEQ 2000b). Careful planning of development to minimize impacts to soil and water is important in protecting water quality and soil productivity. Part of this planning includes compliance with the Utah BLM Standards for Rangeland Health (Appendix D). All alternatives must adhere to Rangeland Health Standards 1 and 4:

- Upland soils [must] exhibit permeability and infiltration rates that sustain or improve site productivity, considering the soil type, climate, and landform.
- BLM will apply and comply with water quality standards established by the State of Utah (R317.2) and the federal clean water and safe drinking water acts. Activities on BLM lands

will fully support the designated beneficial uses described in the Utah Water Quality Standards (R317.2) for surface and groundwater.

In addition, site-specific conditions would need to be documented before modifying any management actions. Activities that would not comply with Standards 1 and 4 in the short-term would require reclamation and rehabilitation to ensure water quality, soil productivity and sustainability. These management decisions would reduce the accelerated erosion and other impacts associated with surface disturbing activities, which can be considered a relative beneficial impact to soil and water resources.

The BLM would manage public lands consistent with the Colorado River Salinity Control Act, comply with Utah's State water quality standards, and collaborate with San Juan County and local municipalities on management of municipal watersheds to meet local needs. Maintenance or improvement of soil quality and long-term soil productivity would be achieved through the implementation of Standards for Rangeland Health and other soil protection measures. Uses would be managed to minimize and mitigate damage to soils. The BLM would prioritize the watersheds identified on the 303d impaired lists. Modification of BMPs and vegetation would be managed to meet water quality standards and maintain watershed function in Montezuma Creek, Indian Creek (Forest Service boundary to Newspaper Rock), Johnson Creek (and tributaries from confluence with Recapture Creek to headwaters), and Recapture Reservoir to achieve water quality standards and watershed function. Watershed function would be assessed using Utah's Rangeland Health Standards, riparian PFC, and state water quality standards. These actions would result in the maintenance and restoration of overall watershed health, including reduction of erosion, stream sedimentation, and salinization of water.

Any proposed activities that would be located in reclamation-limited soils (shown as high-risk in Table 4.94) would incorporate BMPs and other mitigation measures to minimize soil erosion and maintain soil stability in site specific planning and associated NEPA. This would beneficially reduce the accelerated erosion and other impacts associated with surface disturbing activities.

4.3.13.2.2. Impacts of Fire Management Decisions Common to All Alternatives

Fire management under all alternatives would follow the guidelines in Utah Land Use Plan Amendment for Fire and Fuels Management (LUP Amendment), and is incorporated by reference into the DRMP (BLM 2005g). The document can be found at www.ut.blm.gov/fireplanning/index.htm. The impacts of fire management on soil and water resources would be adverse in the short-term due to increased sedimentation and increased runoff from areas where vegetation is removed from prescribed burns or other fuel reduction treatments. Long-term beneficial impacts would occur under all alternatives due to the potential reduction of fire severity and impacts, as well as improving the ability to control fire in and around treated areas. Please refer to the environmental assessment of the LUP Amendment (BLM 2005g) for analysis of impacts to soils and water resources related to plan implementation.

Under all alternatives, estimated fuels reduction treatments of 5,000 to 10,000 acres per year would be targeted subject to budgetary constraints. Fuels reduction treatments would be designed to limit potential short-term adverse impacts to areas with soil limitations and limit changes in surface hydrology under all alternatives. The return of a more natural fire return interval would result in long-term beneficial impacts to soils and water resources through reduced fire severity, which would lower the potential for long-term loss of vegetative cover and resulting stream

sedimentation and changes in surface hydrology due to increased runoff. The actual location of treatment areas will be determined based on need and individual treatments will be analyzed with site-specific NEPA.

4.3.13.2.3. Impacts of Health and Safety Decisions Common to All Alternatives

The management of hazardous materials under all alternatives would affect soils and water resources in the short-term, where Abandoned Mine Lands (AMLs) are rehabilitated. Water-quality-based AML program priority watersheds have been identified by the state based on (a) one or more water laws or regulations; (b) threat to public health or safety; and (c) threat to the environment. The rehabilitation of watersheds impacted by AMLs would result in long-term beneficial impacts on soils and water resources by reducing the detrimental impacts of AML water drainage. The impacts of these decisions would be the same under all alternatives; therefore, no impacts analysis was completed by alternative.

4.3.13.2.4. Impacts of Recreation Decisions Common To All Alternatives

Managing recreation to meet Utah's Rangeland Health Standards would ensure that standards for rangeland health are met within the recreation program, thereby beneficially impacting soil productivity. Limiting or controlling activities through specialized management tools, where long-term damage to soils or water resources by recreational uses is observed or anticipated, would reduce the area of existing long-term impacts to soils and water resources in the Monticello PA. Long-term impacts would also be reduced through revisions to recreation management plans and management framework plans when they prove to be inadequate to maintain public land health.

OHV access for game retrieval would follow all area and route designations. (There would be no off-road retrieval). The public would be notified of these restrictions in the Federal Register. These limits on OHVs would reduce long-term adverse impacts that would otherwise result from motorized recreation.

Under all alternatives, dispersed camping, while allowed where not specifically restricted, may be closed seasonally or as impacts or environmental conditions warrant. The BLM would emphasize "Leave No Trace" camping and travel techniques throughout the Monticello PA. BLM would consider and, where appropriate, implement management methods to protect soils and water resources.

4.3.13.2.5. Impacts of Wildlife and Fisheries Decisions Common to All Alternatives

Wildlife and fisheries decisions under all of the alternatives would prioritize the maintenance and/or improvement of lowland riparian, wetlands, and low and high desert scrub communities, which are the four most important and used habitat types by migratory birds in the Monticello PA. It is likely that the maintenance and/or improvement of these habitats would have indirect benefits to soils and water resources by ensuring the ecological functions of these systems. Beneficial impacts to soils and water resources due to wildlife and fisheries management would correspond to improvement of vegetative conditions and was evaluated in Sections 4.3.17, Vegetation Resources, and 4.3.11, Riparian Resources.

4.3.13.2.6. Impacts of Woodlands Decisions Common To All Alternatives

Floodplains and riparian/aquatic areas would be excluded from woodland product use except for limited on-site collection of driftwood for campfires, and uses for Native American ceremonial purposes as determined on site-specific basis. Cottonwood and willow harvest would be allowed in areas with proper functioning condition for Native American ceremonial uses only, which would minimize potential adverse increases in surface water temperature due to loss of vegetation cover immediately adjacent to streams. Harvest would be administered under a permit system, where restrictions on harvest would be implemented as necessary to achieve or maintain PFC, and maintain or improve Threatened or Endangered Species/Special Status Species (TES/SSS) habitat. These actions would limit adverse impacts to soils and water resources resulting from vegetation disturbance in riparian areas.

4.3.13.3. Alternatives Impacts

4.3.13.3.1. Impacts of Cultural Resource Decisions on Soils and Water

4.3.13.3.1.1. Alternative A

Management actions under Alternative A would not designate any CSMAs. This alternative would not place limitations on watershed treatments, so soils may be subject to surface disturbing treatments but would not experience the potential long-term beneficial impacts of those treatments. The disposal of human and pet waste would not be controlled within any CSMAs under Alternative A. Potential impacts including e-coli contamination of water and small amounts of soil disturbance with subsequent sedimentation would continue to occur. Cultural resource management under Alternative A would not limit vegetative treatments, so some soils would be subject to surface disturbing treatments. Long-term adverse impacts from cultural resource decisions would be partially mitigated by the closure of the Grand Gulch Special Emphasis Area to surface disturbing activities.

4.3.13.3.1.2. Alternative B

Cultural Resource decision impacts on soil and water resources would be identical to those under Alternative A with the following exceptions:

1) Alternative B would designate Comb Ridge (38,012 acres), Tank Bench (2,600 acres), and Grand Gulch National Historic District (37,400 acres) as CSMAs. These designations would prohibit surface disturbing vegetation treatments in these areas. This would prevent potential short-term increases in erosion and subsequent potential for sedimentation in perennial watercourses. However, these limitations would also result in some potential long-term increases in erosion and/or sedimentation in areas where the restrictions prevent effective fuels management or post-fire rehabilitation. Limits on vegetative treatment would also reduce long-term improvement of soil productivity and stability that can result from vegetation management.
2) In the Comb Ridge, Tank Bench, Beef Basin (20,300 acres), McLoyd Canyon-Moon House (1,600 acres), and Grand Gulch CSMAs, human waste would be packed out, thus reducing the potential adverse impacts to soils and water resources from e-coli contamination. McLoyd Canyon-Moon House and Grand Gulch CSMAs would not allow pack animals or

pets, further limiting adverse impacts to soils and water resources from streambank trampling and animal waste.

In summary, Alternative B would place limits on watershed treatments within 40,700 acres. These limits on watershed treatments would reduce the potential for increased erosion and sedimentation in the short-term, but would also prevent potential long-term benefits to watershed health in comparison with Alternative A. However, human waste, pets, and livestock would be managed with greater restrictions in CSMAs under Alternative B than under any other alternative, resulting in the lowest level of adverse impacts to soils and water resources from these sources.

4.3.13.3.1.3. Alternative C

Alternative C would allow surface disturbing land treatments in Comb Ridge, Tank Bench, and Grand Gulch (non-motorized only) (refer to Section 4.3.17, Vegetation Resources). This would have short- and long-term impacts identical to those described under Alternative A. Additionally, under Alternative C, groups larger than 20 would be required to pack out human waste in the Beef Basin CSMA. All human waste would be required to be packed out of the McLoyd Canyon-Moon House CSMA. Qualitative analysis of impacts related to these limits was discussed under Alternative A. These limits would generally reduce adverse impacts to soils and water resources, as compared to Alternative A.

Overall, Alternative C would limit the beneficial impacts of watershed treatments less than Alternative A. Human waste disposal and group size would be controlled more than under Alternative A, with corresponding benefits to soils and water resources.

4.3.13.3.1.4. Alternative D

Alternative D proposes to manage McLoyd Canyon-Moon House (1,607 acres) as a CSMA, where visitors would be required to pack out human waste resulting in lower adverse impacts to water resources in this area than under Alternative A. Grand Gulch National Historic District (37,388 acres) would be managed with the same prescriptions as under Alternative C. Comb Ridge, Tank Bench, and Beef Basin would not be managed as CSMAs, and would therefore be at greater risk of adverse impacts to soil and water resources due to improper human waste disposal.

Overall, Alternative D would provide the fewest beneficial impacts to soils and water resources due to cultural resources decisions, as compared to the other action alternatives. Alternative D would provide more protection of soils and water resources than Alternative A, which would not designate any CSMAs.

4.3.13.3.1.5. Alternative E

Cultural resource decision impacts on soil and water resources would be identical to Alternative B, except that Alternative E would close the Comb Ridge CSMA (38,012 acres) and Beef Basin CSMA (20,300 acres) to oil and gas leasing, surface disturbing vegetation treatments, and cross-country OHV use. These prescriptions would provide greater protection for soils and water resources than any other alternative.

4.3.13.3.2. Impacts of Livestock Grazing Decisions on Soils and Water

Livestock grazing management decisions would affect soils and water resources when AUMs for livestock and/or wildlife are adjusted in response to evidence from monitoring that water quality or soil degradation is imminent or occurring. Depending on season of use and duration, reducing AUMs could have a short-term, direct, and potentially beneficial impact, as it could increase the area of ground cover left after the grazing season. Changes in ground cover, including biological soil crusts, would have direct, long-term impacts to water quality and soil productivity.

With respect to livestock grazing, the alternatives vary between areas proposed as unavailable for livestock grazing. Impacts on vegetation (and subsequently, on water and soils) vary depending on the season of use in relation to vegetation growing seasons. For example, proper grazing in areas with the potential for periods of high runoff (generally due to spring runoff and late summer thunderstorms) would reduce or minimize the adverse impacts of these events: banks that retain their vegetation (due to properly managed livestock grazing) would likely be protected from erosion caused by high flows.

4.3.13.3.2.1. Alternative A

Livestock grazing would be monitored for compliance with all rangeland standards (Appendix D). Where monitoring shows site degradation, adaptive management of livestock use through changes in seasons of use and closure of areas not meeting rangeland standards would reduce adverse impacts to soils and water resources.

Alternative A would have long-term indirect beneficial impacts to soil and water resources in the Comb Wash side canyons (Mule Canyon below U-95, Arch, Fish, Owl, and Road). These areas would be continue to be unavailable for livestock grazing and lack of improper or heavy grazing pressure would allow vegetation to recover, subsequently restoring soil productivity. The impacts of livestock grazing on soil and water resources on other allotments within the Monticello PA would continue to be managed in accordance with Utah Rangeland Health Standards. The areas unavailable for livestock grazing under Alternative A would protect approximately 3,000 acres of wind erodible soil, 5,600 acres of water erodible soils, and 14,600 acres of soil with poor reclamation potential from adverse impacts due to grazing. Livestock grazing would continue to occur on approximately 94,500 acres of wind erodible soils, 16,300 acres of water erodible soils, and 328,700 acres of soil with poor reclamation potential. Refer to Table 4.95 for comparison with other alternatives.

Table 4.95. Livestock Grazing in Soils with Limitations

Alternative(s)	Limitation	Open	Unavailable
Alternative A	Wind	94,500	3,000
	Water	16,300	5,600
	Reclamation Limited	328,700	14,600
Alternatives B and E	Wind	94,200	3,300
	Water	16,300	5,600
	Reclamation Limited	326,000	17,300

Table 4.95. Livestock Grazing in Soils with Limitations

Alternative(s)	Limitation	Open	Unavailable
Alternative C	Wind	94,200	3,300
	Water	16,300	5,600
	Reclamation Limited	326,000	17,300
Alternative D	Wind	94,500	3,000
	Water	16,300	5,600
	Reclamation Limited	328,500	14,800

4.3.13.3.2.2. Alternative B

Under Alternative B, the BLM would develop seasonal restrictions, closures, and/or forage utilization limits on grazing in all riparian areas and especially those Functioning At Risk. These actions and closures of areas to grazing would reduce adverse impacts to soils and water resources similarly to Alternative A. The total area with limited soils open to livestock grazing under Alternative B would be very slightly less than under Alternative A. Refer to Table 4.95 for comparison of alternative impacts. For a qualitative description of the impacts of removal of grazing from riparian areas, see Section 4.3.11.2.2, Impacts of Livestock Grazing Decisions on Riparian Resources, for Alternative A.

4.3.13.3.2.3. Alternative C

Alternative C would have the same closure areas and management of livestock grazing, and therefore the same impacts, as Alternative B. The one exception would be Mule Canyon, only part of which would be made unavailable for grazing under Alternative C. Therefore, Alternative C would have very slightly more adverse impacts on soils and watersheds than Alternatives B and A. However, the acreage of limited soils open to livestock grazing is nearly identical under all alternatives.

4.3.13.3.2.4. Alternative D

Alternative D would make the same areas unavailable to grazing as Alternative B, with the exception of the Horsehead Canyon within the Montezuma Canyon allotment, Dodge Canyon allotment, and Mule Canyon allotment north of U-95, all of which would be open to livestock grazing under Alternative D. There would be no seasonal restrictions, closures, and/or forage utilization limits on grazing in riparian areas classified as Functioning at Risk, so fewer reductions in adverse impacts would occur as compared to Alternative B. This alternative would have very similar impacts to sensitive soils as would occur under Alternative A (see Table 4.95).

4.3.13.3.2.5. Alternative E

Under Alternative E, the total area with limited soils open and unavailable for livestock grazing would be the same as under Alternative B, with the same impacts to soils and water resources.

4.3.13.3.3. IMPACTS OF MINERAL DECISIONS ON SOILS AND WATER

Impacts related to mineral development would occur where sensitive soils were impacted through surface disturbance. Disturbance of sensitive soils would contribute to short-term adverse impacts to soils and water resources as a result of loss of vegetative cover, and would contribute to sedimentation of surface waters and loss of soil productivity. Proposed oil and gas facilities and infrastructure development would cause a loss of soil productivity and water quality degradation due to construction-related surface disturbances.

4.3.13.3.3.1. Alternative A

Refer to Table 4.96 below for a comparison of limited soil acreage open and closed under Alternative A and the action alternatives. Alternative A would result in more adverse impacts to soils and water resources as compared to the action alternatives, which have fewer acres of limited soils open to mineral development. A total of 77,600 acres of wind erodible; 15,000 acres of water erodible; and 217,300 acres of reclamation-limited soils would be open to surface-disturbing mineral leasing under Alternative A. A total of 23,500 acres of wind erodible; 12,800 acres of water erodible; and 85,000 acres of reclamation limited soils would be closed to surface-disturbing mineral leasing. It should be noted that Table 4.96 indicates areas open for surface-disturbing leasing; it does describe the actual predicted disturbance from mineral development.

Geophysical exploration would also be allowed under Alternative A, and would potentially adversely impact soils and water resources in areas with limited soils for up to 10 years. Table 4.97 outlines estimated potential surface disturbance due to oil and gas leasing and geophysical exploration over the life of the plan (15 years). This surface disturbance would have potential long-term adverse impacts on soils and water resources where disturbance occurs in sensitive soils. Under Alternative A, the total potential surface disturbance due to oil and gas leasing and geophysical exploration would be 665, 189, and 731 acres in the Blanding Sub-basin, Monument Upwarp, and Paradox Fold and Fault Belt respectively. These acreages would represent less than 1% of the total Monticello PA and disturbance would impact a very small percentage of the limited soils open to surface disturbance (see Table 4.96).

4.3.13.3.3.2. Alternative B

Under Alternative B, the following acreages of sensitive soils would be open for mineral leasing: 74,000 acres of highly wind erodible soils; 15,100 acres of highly water erodible soils; 276,930 acres of reclamation sensitive soils. This would be approximately 3,600 less wind erodible; 100 more water erodible; and 59,630 less reclamation sensitive acres open to mineral leasing than under Alternative A. A total of 3,300 more wind erodible; 200 less water erodible; and 37,500 less reclamation sensitive soils would be closed, as compared to Alternative A (see Table 4.96). The total estimated surface disturbance from mineral development and exploration would be lower under Alternative B (1,430 acres) than under Alternative A (1,585 acres), as shown in Table 4.97.

Table 4.96. Acreage of Limited Soils Open and Closed to Surface-Disturbing Mineral Leasing by Alternative

		Alternative A			Alternative B			Alternative C			Alternative D			Alternative E		
		Wind	Water	Reclamation Limited	Wind	Water	Reclamation Limited	Wind	Water	Reclamation Limited	Wind	Water	Reclamation Limited	Wind	Water	Reclamation Limited
Blanding Sub-basin	**open**	14,000	3,800	102,900	9,600	3,300	82,230	14,300	3,800	99,100	14,400	3,800	99,000	9,642	3,219	78,555
	closed	700	400	8,200	5,000	800	27,300	300	300	10,400	300	300	10,500	5,057	900	30,975
Monument Upwarp	**open**	43,600	10,200	8,500	49,000	11,000	101,600	49,900	11,700	108,300	50,100	12,100	108,800	8,926	4,301	41,000
	closed	22,500	12,000	75,200	17,000	11,300	5,900	16,400	16,900	52,300	1,600	10,200	51,700	57,136	17,975	119,574
Paradox Fold and Fault Belt	**open**	20,000	1000	105,900	15,400	800	93,100	1000	19,300	104,300	20,200	1,100	107,000	11,164	358	76,476
	closed	300	400	1,600	4,800	500	14,300	1000	400	3,200	<100	200	500	9,076	953	30,942
Total in Monticello PA	**open**	**77,600**	**15,000**	**217,300**	**74,000**	**15,100**	**276,930**	**65,200**	**34,800**	**311,700**	**84,700**	**17,000**	**314,800**	**29,732**	**7,878**	**196,031**
	closed	**23,500**	**12,800**	**85,000**	**26,800**	**12,600**	**47,500**	**17,700**	**17,600**	**65,900**	**1,900**	**10,700**	**62,700**	**71,269**	**19,828**	**181,491**

Table 4.97. Predicted Surface Disturbance over Life of Plan From Oil and Gas Leasing and Geophysical Exploration

	Alternative A				Alternative B				Alternative C				Alternative D				Alternative E			
	Blanding Sub basin	Monument Upwarp	Paradox Fold and Fault Belt	Total	Blanding Sub basin	Monument Upwarp	Paradox Fold and Fault Belt	Total	Blanding Sub basin	Monument Upwarp	Paradox Fold and Fault Belt	Total	Blanding Sub basin	Monument Upwarp	Paradox Fold and Fault Belt	Total	Blanding Sub basin	Monument Upwarp	Paradox Fold and Fault Belt	Total
Oil and gas average disturbance LOP	394	69	236	699	363	79	194	636	395	82	233	710	395	86	240	721	345	30	143	518
Geophysical surface disturbance LOP	271	120	495	886	249	137	408	794	271	143	489	903	271	149	504	924	237	53	301	591
Total predicted surface disturbance	665	189	731	1,585	612	216	602	1,430	666	225	722	1,613	666	235	744	1,645	582	83	444	1,109

4.3.13.3.3.3. Alternative C

Under Alternative C, the following approximate acreages of sensitive soils would be open to surface disturbing activities related to mineral leasing: 65,200 acres of highly wind erodible soils; 34,800 acres of highly water erodible soils; and 311,700 acres of reclamation sensitive soils. This would result in potential for surface disturbance on approximately 12,400 less wind erodible acres; 19,800 more water erodible acres; and 94,400 more reclamation limited soils than under Alternative A. Approximately 17,700 wind erodible acres; 17,600 water erodible acres; and 65,900 reclamation-limited acres would be closed to mineral leasing. The 1,613 acres of total estimated surface disturbance would be greater than the 1,585 acres estimated under Alternative A (see Table 4.97).

4.3.13.3.3.4. Alternative D

Under Alternative D, the following acreages of sensitive soils would be open to potential surface disturbing activities related to mineral leasing: 84,700 acres of highly wind erodible soils; 17,000 acres of highly water erodible soils; and 314,800 acres of reclamation sensitive soils. This would result in potential adverse impacts on 7,100 more wind erodible acres; 2,000 more water erodible acres; and 97,500 more reclamation-limited soils than under Alternative A. A total of 1,900 wind erodible acres; 10,700 water erodible acres; and 62,700 reclamation-limited acres would be closed to mineral leasing. An estimated total of 1,645 acres of soil disturbance due to minerals development and exploration would be greater than under Alternative A (1,585 acres) and the other action alternatives (see Table 4.97).

4.3.13.3.3.5. Alternative E

Under Alternative E, the following acreages of sensitive soils would be open for mineral leasing: 29,732 acres of highly wind erodible soils; 7,878 acres of highly water erodible soils; and 196,031 acres of reclamation sensitive soils. This would be approximately 47,868 less wind erodible; 7,122 less water erodible; and 21,269 less reclamation sensitive acres open to mineral leasing than under Alternative A. A total of 47,769 more wind erodible; 7,028 more water erodible; and 96,491 more reclamation sensitive soils would be closed, as compared to Alternative A. The 1,109 acres of estimated surface disturbance due to mineral development and exploration would be lower than under any alternative, including the 1,585 acres expected under Alternative A (see Table 4.97).

4.3.13.3.4. Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Soils and Water

4.3.13.3.4.1. Alternatives A–D

There would be no direct impacts from non-WSA lands with wilderness characteristics decisions on soils and water under these alternatives, since no lands would be managed to preserve wilderness characteristics. Because these areas would not receive protective management, they may be open to adverse impacts to soils and water resources, such as additional development, ROWs, and surface disturbing activities.

4.3.13.3.4.2. Alternative E

Under Alternative E, a total of 582,360 acres of non-WSA lands with wilderness characteristics would be managed to maintain their wilderness characteristics. These areas would be closed to OHV use, which would reduce soil disturbance, erosion, and associated impacts to water quality. Lands with wilderness characteristics would also be closed to mineral leasing and disposals and would prohibit new road construction or ROWs, which would also reduce impacts to soils and water resources. Finally, lands with wilderness characteristics would be closed to woodland harvest, thereby eliminating associated surface disturbance and associated impacts to soils and water resources. Therefore, Alternative E would have beneficial impacts to soils and water resources over approximately 582,360 more acres than any other alternative, including Alternative A.

4.3.13.3.5. Impacts of Recreation Decisions on Soils and Water

Recreation management decisions would potentially affect sensitive soils and water quality in critical watersheds and priority sub-basins under all alternatives. The disturbance of sensitive soils (reclamation limited, highly erodible, or biological crusts) through surface disturbance and loss of vegetative cover in areas open to OHV use would increase the risk of stream sedimentation and resultant decreases in water quality. Disturbance levels would be relative to amount of surface disturbance and proximity to water resources. Limiting OHV use to designated routes would minimize adverse impacts to soils and water. Vegetation disturbance in riparian areas and highly-erodible areas from OHV use or visitor use would increase the risk of water quality degradation and loss of soil productivity due to accelerated wind and water erosion and vegetation removal.

Vegetation disturbance leading to increased surface runoff and alteration of erosional and depositional processes would occur in areas with high visitor use. Recreation permit systems would continue to manage visitor use in areas with sensitive soils or in riparian areas. Analysis of visitor use was completed under Section 4.3.11.2.4, Impacts of Recreation Decisions on Riparian Resources. Impacts to soils and water resources from visitor use would be at the same relative levels as riparian impacts.

4.3.13.3.5.1. Alternative A

Recreation management decisions under Alternative A would allow OHV use in sensitive soils with potential to disturb 36,400 acres of wind erodible, 5,700 acres of water erodible, and 179,700 acres of reclamation-limited soils. OHV use could potentially result in short-term surface disturbance resulting in streambank destruction, vegetation damage, and sedimentation of surface waters. OHV trails could also lead to increased incidence of water erosion due to gullying resulting in sedimentation of streams. A total of 64,600 acres of wind erodible, 22,000 acres of water erodible, and 199,100 acres of reclamation limited soils would be limited to designated routes or closed to OHV use, thus reducing adverse impacts on soils and water resources in closed or travel limited areas. Refer to Table 4.98 for comparison between alternatives.

Table 4.98. OHV Use in Reclamation-Limited Soils by Alternative

		Alternative A			Alternative B			Alternative C			Alternative D			Alternative E		
		wind	water	reclamation limited	wind	water	reclamation limited	wind	water	reclamation limited	wind	water	reclamation limited	wind	water	reclamation limited
All RFD areas	open	36,400	5,700	179,700	0	0	0	200	0	300	300	0	300	0	0	0
	closed or limited	64,600	22,000	199,100	101,000	27,700	376,100	100,800	27,700	375,800	100,700	27,700	375,800	101,000	27,700	376,100

4.3.13.3.5.2. Alternative B

OHV use under Alternative B would be the lowest of any alternative, along with Alternative E (see Table 4.98). No areas would be open to cross-country OHV use within the Monticello PA. This would result in 36,400 less wind erodible acres; 5,700 less water erodible; and 179,700 less reclamation sensitive acres where OHV use would occur on designated routes than under Alternative A.

Several SRMAs would be designated under Alternative B, which would result in management restrictions that would impacts soils and water resources. Within the San Juan River SRMA, launch schedules would allow approximately 30,000 user/days per year, which is 10,000 fewer user days than Alternative A and Alternative C, and 15,000 fewer user days than Alternative D. Trip size would be limited to 20 people (including crew) for both private and commercial use, which is fewer than any other alternative. These management actions would reduce adverse impacts due to visitor use more than any other alternative (except Alternative E, which would have the same management). Camping permits would be less than any other alternative in the Grand Gulch Plateau (Cedar Mesa) In-Canyon Camping Area, resulting in the greatest amount of soil and water resources protection of any alternative. Levels of camping are shown in the Alternatives Matrix. The Dark Canyon SRMA would allow fewer commercial permits than under any alternative. Camping in designated sites would be allowed and dispersed camping would not be allowed. Group size would be limited to 10–12 with 15 private users per day in the canyon. Alternative A would not have any user limits within the Dark Canyon SRMA. Limits on group size and number of commercial permits would reduce bank trampling, human waste (e-coli), and noxious weed spread in regulated areas. These actions would result in a reduction of surface and vegetation disturbance due to human use, thus having the highest level of protection for soils and water resources of any alternative. Dispersed camping would not be allowed in the Indian Creek Corridor. Camping would only be allowed in designated sites resulting in fewer impacts to riparian resources than any alternative.

4.3.13.3.5.3. Alternative C

Under Alternative C very few areas would be open to OHV use within the Monticello PA. This would result in 36,200 less wind erodible acres; 5,700 less water erodible acres; and 179,400 less reclamation sensitive acres subject to impacts from OHV use than under Alternative A. Areas closed to OHV use and limited to designated routes would be nearly the same as under Alternative B (see Section 4.3.13.2.4). By reducing OHV use to designated trails and closing some areas to OHV use, Alternative C would have the similar levels of impact to sensitive soils as Alternative B, and far fewer than Alternative A (see Table 4.98).

The San Juan SRMA would be designated with similar management as under Alternative A. Launch limits would allow approximately 40,000 user/days per year, which is the same as under Alternative A. Alternative C would allow fewer user days than Alternative D and more user days than Alternatives B and E. Trip size would be limited to 25 people (including crew) total for both private and commercial trips, which is fewer than Alternative A and Alternative D, and more than Alternatives B and E. Refer to discussion in Alternative A for impacts related to soil and vegetation disturbance from visitor use.

The camping numbers in Grand Gulch Plateau (Cedar Mesa) In-Canyon Camping Area would be more than Alternatives B and E and less than Alternative A and Alternative D, as reflected in the Alternatives Matrix. Camping in designated sites would be allowed in the Dark Canyon SRMA. Group size would be limited to 15 with up to 20 private users per day. These limits would protect soils and water resources from adverse impacts due to visitor use more than Alternative A and Alternative D (which would not designate camping limits) and less than Alternatives B and E. Dispersed camping would be allowed in the Indian Creek Corridor except for within the following designated dispersed camping zones that have been established: Bridger Jack Mesa, Indian Creek Falls, and Creek Pasture. Camping within these zones would be limited to designated sites. These limits on camping would protect soils and water resources more than Alternative A and Alternative D and less than Alternative B.

Overall, Alternative C would provide more protection of soils and water resources due to management actions for recreation than Alternative A and Alternative D and less protection than under Alternatives B and E.

4.3.13.3.5.4. Alternative D

Under Alternative D, 300 acres of wind erodible and 300 acres of reclamation limited soils would be open to OHV use within the Monticello PA. This would be 36,100 less wind erodible acres; 5,700 less water erodible; and 179,400 less reclamation-limited acres open to OHV use than under Alternative A. There would be no areas closed to OHV use under Alternative D, but nearly all OHV use would be limited to designated routes (see Section 4.3.13.2.4). By reducing OHV use to designated trails, Alternative D would have the similar levels of use within sensitive soils as Alternative B, and far fewer than Alternative A (see Table 4.98).

Alternative D would allow approximately 45,000 user/days per year, private and commercial trips combined within the San Juan SRMA, which would result in a higher level of use than under any other alternative. Trip size would be increased to a maximum of 35 people per trip for both private and commercial use, which would be more people per trip than any other alternative. Camping permit numbers in the Grand Gulch Plateau (Cedar Mesa) In-Canyon Camping Area would be greater than Alternatives B, C, and E and fewer than under Alternative A, as reflected in the Alternatives Matrix. Dispersed camping would be allowed in the Dark Canyon SRMA, resulting in the same impacts as under Alternative A. The group size would be the same as Alternative C, with no limits on private user numbers. Dispersed camping would be allowed throughout the Indian Creek corridor, which would provide the lowest amount of protection of soils and water resources of any alternative.

Overall, Alternative D would provide the lowest level of protection for soils and water resources due to recreation decisions than any action alternative but a higher level of protection than under Alternative A.

4.3.13.3.5.5. Alternative E

Under Alternative E, the impacts of recreation decisions on soils and water resources would be the same as under Alternative B, except that no OHV travel would be allowed within non-WSA lands with wilderness characteristics (582,360 acres). By reducing OHV use to designated routes and closing the highest overall acreage to OHV use of any alternative (958,410 acres),

Alternative E would have the lowest use levels, and consequently, the lowest OHV-related soils impacts within designated recreation areas, of any alternative.

4.3.13.3.6. Impacts of Riparian Decisions on Soils and Water

4.3.13.3.6.1. Alternative A

Alternative A would limit surface disturbance in riparian areas, and would thereby limit adverse impacts to soils and water resources, since riparian areas naturally filter surface runoff and attenuate floods. Reduction of floods would limit the amount of erosion and sedimentation of water bodies.

All floodplains and riparian/wetlands are managed in accordance with Executive Orders 11988 and 11990, sections 303 and 404 of the Clean Water Act, and the Endangered Species Act, thus protecting riparian areas from impacts related to surface disturbance. These protections would indirectly reduce adverse impacts to soils and water resources by reducing sedimentation and salinization of water.

Under Alternative A, oil and gas development would be No Surface Occupancy (NSO) in riparian areas. The Monticello PA would follow Utah's Standards for Rangeland Health and Guidelines for Grazing and Recreation Management to achieve riparian PFC. No new surface disturbing activities would be allowed within active floodplains or within 100 meters of riparian areas. These actions would protect soils and water resources from adverse impacts due to surface disturbance.

4.3.13.3.6.2. Alternative B

Impacts under Alternative B would be the same as under Alternative A except that selected areas would be closed to motorized use and livestock trailing, which would result in minor beneficial reductions in impacts to soils and water resources.

4.3.13.3.6.3. Alternative C

Under Alternative C, the impacts of riparian decisions would be the same as under Alternative B.

4.3.13.3.6.4. Alternative D

Under Alternative D, the impacts of riparian decisions would be the same as under Alternative A.

4.3.13.3.6.5. Alternative E

Under Alternative E, the impacts of riparian decisions would be the same as under Alternative B.

4.3.13.3.7. Impacts of Soils and Water Decisions on Soils and Water

In addition to those impacts common to all alternatives described in Section 4.3.13.2, soils and water decisions specific to each alternative would also affect soils and water resources.

4.3.13.3.7.1. Alternative A

There would be no additional impacts under Alternative A.

4.3.13.3.7.2. Alternative B

Under Alternative B, soil erosion and subsequent stream sedimentation would be beneficially reduced by stipulations requiring that erosion control plans be developed for surface disturbing activities on slopes greater than 20%. These measures would reduce erosion and sedimentation relative to Alternative A.

4.3.13.3.7.3. Alternative C

Under Alternative C, soil erosion and subsequent stream sedimentation would be beneficially reduced by stipulations requiring that erosion control plans be developed for surface disturbing activities on slopes greater than 20%, and that surface disturbance be limited on slopes greater than 40%. These measures would reduce erosion and sedimentation relative to Alternatives A and B.

4.3.13.3.7.4. Alternative D

Under Alternative D, soil erosion and subsequent stream sedimentation would be beneficially reduced by stipulations requiring that erosion control plans be developed for surface disturbing activities on slopes greater than 40%. These measures would reduce erosion and sedimentation relative to Alternatives A.

4.3.13.3.7.5. Alternative E

Impacts under Alternative E would be the same as under Alternative B, except that additional restrictions on surface disturbing activities would apply within non-WSA lands with wilderness characteristics. Therefore, impacts to soils and water resources would be less adverse under Alternative E than under any other alternative.

4.3.13.3.8. Impacts of Special Designations Decisions on Soils and Water

Special Designations would generally reduce adverse impacts to floodplains, soils, and water resources through limits on surface disturbance within Areas of Critical Environmental Concern (ACECs) and river segments designated as Wild and Scenic under the National Wild and Scenic River System (NWSRS). Short-term adverse impacts to soils and water resources would occur in areas where vegetation treatments are allowed within special designations. Allowing vegetation treatments would result in increased sedimentation in the short-term, but would provide long-term beneficial impacts on soils and water resources by improving vegetation cover and health.

Under all alternatives, ACEC designation would generally require areas with surface disturbance to be reclaimed within five years after project completion. This would reduce any long-term adverse impacts to soils and water resources. The total acreage of limited soils in ACECs by alternative is shown in Table 4.99 below. Short-term adverse impacts would still occur due to any surface-disturbing activities in these areas, but effective reclamation would prevent these impacts from being long-term. Additionally, OHV use would generally be limited to designated trails or prohibited, thus reducing adverse impacts as discussed under Section 4.3.13.2.4, Impacts of Recreation Decisions Common to All Alternatives.

Table 4.99. ACEC Special Designations in Limited Soils, by Alternative

	Alternative A			Alternatives B and E			Alternative C			Alternative D		
	wind	water	reclamation limited	wind	water	reclamation limited	wind	water	reclamation limited	wind	water	reclamation limited
ACECs	9,400	12,200	91,400	9,200	11,200	100,000	300	600	14,100	0	0	0

4.3.13.3.8.1. Alternative A

A total of 9,400 acres of wind erodible soils; 12,200 acres of water erodible soils; and 91,400 acres of reclamation-limited soils would be within designated ACECs under Alternative A (see Table 4.99). These designations would generally reduce impacts to soils and water resources due to surface disturbance, as described above.

The designation of river segments as Wild and Scenic would not be evaluated under Alternative A. River segments determined eligible for designation in the 1991 RMP would retain protections from surface disturbance, thus limiting adverse impacts. River segments not evaluated in the 1991 RMP would not be protected from surface disturbance and its impacts.

4.3.13.3.8.2. Alternative B

Designation of ACECs and Wild and Scenic river segments proposed under Alternative B would limit surface disturbance on 9,200 acres of wind erodible; 11,185 acres of water erodible; and 100,000 acres of reclamation limited soils. This would result in protection of 200 fewer acres of wind erodible; 1,000 fewer acres of water erodible; and 8,600 more acres of reclamation limited soils, as compared to the Alternative A. However, the management prescriptions of special designations under Alternative B are generally slightly more protective than under Alternative A.

Management of Wild and Scenic Rivers under Alternative B would recommend Dark Canyon (2,048 acres) and San Juan River Wild Segments #3 and #5 (4,896 acres) as Wild under the WSR system. These designations would limit surface disturbance within the river corridors at these locations. These actions would provide more long-term protection of soils and water resources than Alternative A, which would not designate any Wild river segments.

The designations proposed under Alternative B would result in the protection of more acres of reclamation limited soils and biological soil crusts than Alternative A.

4.3.13.3.8.3. Alternative C

Designation of ACECs and Wild and Scenic river segments proposed under Alternative C would limit surface disturbance on 300 acres of wind erodible; 600 acres of water erodible; and 14,100 acres of reclamation limited soils. These designations would result in less protection for soils and water resources than under Alternative A (see Table 4.99).

Management of Wild and Scenic Rivers under Alternative C would recommend Dark Canyon (2,048 acres) as Wild under the WSR system. This designation would limit surface disturbance within the river corridor. These limits on surface disturbance would provide more long-term protection of soils and water resources than Alternative A, which would not designate any Wild river segments.

The designations proposed under Alternative C would result in the protection of fewer acres of reclamation limited soils and biological soil crusts than Alternative A.

4.3.13.3.8.4. Alternative D

There would be no special designations under Alternative D. No reduction in adverse impacts would occur under this alternative, resulting in the lowest level of protection from adverse impacts.

4.3.13.3.8.5. Alternative E

Under Alternative E, the impacts of special designations decisions on soils and water resources would be the same as under Alternative B.

4.3.13.3.9. Impacts of Special Status Species Decisions on Soils and Water

The management of special status species under all alternatives would generally be positive where soils are indirectly protected from disturbance due to protections for TES. Where treatments are limited due to the presence of TES, impacts could be beneficial or adverse.

4.3.13.3.9.1. Alternative A

Under Alternative A, the BLM would conduct inventories and monitoring studies in order to determine special status plant and animal species locations, potential habitat, population dynamics, and existing and potential threats. Beneficial impacts would occur where riparian areas and waterways would be protected through implementation of current and future sensitive species Conservation Agreements. These agreements include the Colorado River cutthroat trout Conservation Agreement and Strategy and Conservation Agreement for the roundtail chub, bluehead sucker, and flannelmouth sucker.

Specific actions to improve habitat for some TES would likely result in beneficial impacts on soils and water resources due to improvement of natural water filtration and increased water holding capacity of natural vegetation. Limits on surface disturbance would reduce adverse impacts due to loss of vegetation and its natural water filtration and flood attenuation properties. The protections of Bald eagle winter roosting sites, including avoidance of disturbance to or loss of large cottonwood gallery riparian habitats, would reduce adverse impacts to soils and water resources by maintaining the natural filtration of these areas. Where riparian gallery habitats are lost, adverse impacts to soils and water resources would be due to increased runoff and lack of filtration of surface waters. Bald eagle protection would also require avoidance of surface disturbance in riparian areas, with the same impacts as discussed above. The protections for Mexican spotted owls (MSO) would require any activity that includes water production would be managed to ensure maintenance or enhancement of riparian habitat, thus reducing adverse impacts to soils and water resources.

Any BLM lands that contains riparian habitat within the range of Southwestern willow flycatcher or yellow-billed cuckoos would be managed to avoid development and/or implement use restrictions. The BLM would ensure that water extraction or disposal practices do not result in change of hydrologic regime that would result in loss or degradation of riparian habitat. Revegetation of temporarily disturbed areas within riparian areas and adjacent uplands would be done with native species or ecological equivalents. These actions or limits on disturbance would reduce the adverse impacts of disturbance to soils and water resources as discussed above. Avoidance of development and/or use restrictions within BLM areas, watersheds, or tributaries to Designated Critical Habitat for the Colorado River fish (bonytail, humpback chub, Colorado pikeminnow, and razorback sucker) would also result in reduction of adverse impacts to soils and water resources. Finally, limits on water depletions to protect special status fish would also result in reduction of adverse impacts such as reduced spring flood magnitudes or less frequent floodplain inundation.

4.3.13.3.9.2. Alternative B

Under Alternative B, the impacts of special status species decisions would be the same as under Alternative A, except that there would be minor additional protective measures within Gunnison sage-grouse and Mexican spotted owl habitat that would also benefit soils and watersheds, such as prohibitions on road construction within 2 miles of active strutting grounds. These additional measures would have a minor impact on soils, but would have a greater benefit than under Alternative A.

4.3.13.3.9.3. Alternative C

Under Alternative C, the impacts of special status species decisions would be the same as under Alternative A, except that there would be minor additional protective measures within Gunnison sage-grouse and Mexican spotted owl habitat that would also benefit soils and watersheds, such as prohibitions on road construction within 0.6 miles of active strutting grounds. These additional measures would have a minor impact on soils, but would have a greater benefit than under Alternatives A and D. They would have a less beneficial impact than Alternatives B and E.

4.3.13.3.9.4. Alternative D

Under Alternative D, the impacts of special status species decisions would be the same as under Alternative A, except that there would be negligible, additional protective measures within Gunnison sage-grouse and Mexican spotted owl habitat that would also benefit soils and watershed, such as prohibitions on road construction within 0.25 miles of active strutting grounds. These additional measures would have a negligible beneficial impact on soils.

4.3.13.3.9.5. Alternative E

Under Alternative E, the impacts of special status species decisions would be the same as under Alternative B.

4.3.13.3.10. Impacts of Vegetation Decisions on Soils and Water

Vegetation treatments would potentially impact soils and water resources through changes in vegetation type and canopy cover, and the resulting shifts in water runoff and erosion. Vegetation treatments would potentially increase surface water temperature due to lost

vegetation cover adjacent to streams, which would be an adverse impact on water resources. Surface disturbing vegetation treatments could also result in increased erosion and stream sedimentation. Analysis of beneficial impacts of vegetation treatments was based upon total acres of treatment that improves watershed condition.

4.3.13.3.10.1. Alternative A

Under Alternative A, existing vegetation treatment would continue on 232,100 acres.

4.3.13.3.10.2. Alternative B

Under Alternative B, the impacts from vegetation management decisions would be similar to those described under Alternative A. Alternative B would result in approximately 6,600 acres of vegetation treatments per year, or a total of 99,000 acres over 15 years. This is approximately 133,100 fewer acres of vegetation treatments than Alternative A, and would therefore result in fewer short-term adverse impacts and fewer long-term beneficial impacts to soils and water resources.

4.3.13.3.10.3. Alternative C

Under Alternative C, the impacts from vegetation management decisions would be similar to those described under Alternative B. Alternative C would result in approximately 7,800 acres of vegetation treatments per year, or a total of 117,000 acres over 15 years. This is approximately 115,100 fewer acres of vegetation treatments than Alternative A, and would therefore result in fewer short-term adverse impacts and fewer long-term beneficial impacts to soils and water resources.

4.3.13.3.10.4. Alternative D

The impacts from vegetation management decisions under Alternative D would be similar to those described under Alternative B. Alternative D would result in approximately 9,300 acres of vegetation treatments per year, or a total of 139,500 acres over 15 years. This is approximately 92,600 fewer acres of vegetation treatments than Alternative A, and would therefore result in fewer short-term adverse impacts and fewer long-term beneficial impacts to soils and water resources.

4.3.13.3.10.5. Alternative E

Under Alternative E, the impacts of vegetation management decisions on soils and water resources would be the same as under Alternative B.

4.3.13.3.11. Impacts of Visual Resource Decisions on Soils and Water

The designation of VRM classes would result in indirect impacts to soil and water resources depending on the type of surface disturbing activity that these classes would allow. For example, VRM Class I would stipulate NSO and would limit potentially adverse surface-disturbing activities in order to protect scenic quality, whereas VRM Class II would stipulate that management activities not alter landforms, but would not necessarily limit surface disturbing activities. For the purpose of this analysis, the potential impacts of VRM designation are

evaluated based on the acreage of each limited soil type that would be protected by being within areas designated as VRM Class I and II. These acreages, by alternative, are listed in Table 4.100.

4.3.13.3.11.1. Alternative A

Under Alternative A, approximately 35,800 acres of wind erodible, 15,800 acres of water erodible, and 135,800 acres of reclamation limited soils would be designated as VRM Class I and II. Approximately 12,500 acres wind erodible, 17,200 water erodible, and 78,100 acres reclamation limited soils would be designated as VRM Class III and IV, and therefore would be at greater risk of adverse impacts due to surface disturbances.

4.3.13.3.11.2. Alternative B

Visual resource management under Alternative B would designate 34,500 acres of wind erodible; 16,300 acres of water erodible; and 135,200 acres of reclamation limited soils as VRM Class I and II. This would result in the protection of 1,300 fewer wind erodible acres; 500 more water erodible acres; and 600 fewer reclamation-limited acres than under Alternative A.

4.3.13.3.11.3. Alternative C

Visual resource management under Alternative C would designate 28,600 acres of wind erodible; 12,900 acres of water erodible; and 105,100 acres of reclamation limited soils as VRM Class I and II. This would be 7,200 fewer wind erodible acres; 2,900 fewer water erodible acres; and 30,700 fewer reclamation-limited acres designated as VRM Class I and II than under Alternative A.

4.3.13.3.11.4. Alternative D

Visual resource management under Alternative D would designate approximately 16,300 acres of wind erodible; 10,700 acres of water erodible; and 60,500 acres of reclamation limited soils as VRM Class I and II. This would be 19,500 fewer wind erodible acres; 5,100 fewer water erodible acres; and 75,300 fewer reclamation-limited acres designated as VRM Class I and II than under Alternative A (see Section 4.3.18, Visual Resources, for a qualitative description of the impacts of VRM).

4.3.13.3.11.5. Alternative E

Visual resource management under Alternative E would designate 72,796 acres of wind erodible; 21,164 acres of water erodible; and 199,099 acres of reclamation limited soils as VRM Class I and II. This would result in the protection of 36,996 more wind erodible acres; 5,364 more water erodible acres; and 63,299 more reclamation-limited acres than under Alternative A.

Table 4.100. VRM Designation - Limited Soils by Alternative

	Alternative A			Alternative B			Alternative C			Alternative D			Alternative E		
	wind	water	reclamation	wind	water	reclamation	wind	water	reclamation	wind	water	reclamation	wind	water	reclamation
VRM I and II (acres)	35,800	15,800	135,800	34,500	16,300	135,200	28,600	12,900	105,100	16,300	10,700	60,500	72,796	21,164	199,099
VRM III and IV (acres)	12,500	17,200	78,100	13,000	3,200	77,300	13,000	3,500	86,600	14,400	3,800	99,600	28,118	6,529	176,631

4.3.13.3.12. Impacts of Woodlands Decisions on Soils and Water

Impacts to soils and water resources from woodlands decisions would result from an increased risk of vegetation removal, surface disturbance, soil compaction, and hydrological changes in areas open to woodland harvest. This risk would be due to the potential for surface disturbance from motorized vehicles and foot traffic during wood gatherings, as well as the loss of woody shrub and forest vegetation from areas, particularly those areas with sensitive and/or highly erodible soils.

4.3.13.3.12.1. Alternative A

Under Alternative A, a total of 1,309,894 acres of the Monticello PA would be open to woodland harvest. Therefore, Alternative A would result in the highest risk of impacts to soils and water resources (Table 4.101), as described above.

Table 4.101. Acres of Soils Available for Woodland Harvesting, By Alternative

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Available for Woodland Harvesting (Acres)	1,309,894	730,074	841,938	841,938	548,477

4.3.13.3.12.2. Alternative B

Under Alternative B, a total of 730,074 acres would be open to woodland harvest, or 579,820 fewer acres than under Alternative A. Therefore, Alternative B would result in a lower risk of adverse impacts to soils and water resources, as described above.

4.3.13.3.12.3. Alternatives C and D

Under Alternatives C and D, a total of 841,938 acres would be open to woodland harvest, or 467,956 fewer acres than under Alternative A. Therefore, Alternatives C and D would result in a lower risk of adverse impacts to soils and water resources, as described above.

4.3.13.3.12.4. Alternative E

Under Alternative E, a total of 548,477 acres would be open to woodland harvest, or 761,417 fewer acres than under Alternative A. Therefore, Alternative E would result in a lower risk of adverse impacts to soils and water resources, as described above.

4.3.13.4. Mitigation Measures

Any activity with potential for surface disturbance would be required to follow stipulations as outlined in Appendix A and Appendix I. These surface stipulations would protect soils and water resources by requiring Best Management Practices (BMPs) for all activities in limited soils or on slopes greater than 20%. The use of BMPs would limit adverse impacts to soils and water resources.

4.3.13.5. UNAVOIDABLE ADVERSE IMPACTS

Unavoidable adverse impacts would include short-term, increased erosion and sedimentation and short-term nutrient release to surface waters due to prescribed burning and vegetation treatments; increases in surface water temperature due to vegetation cover lost because of vegetation treatment and woodland harvesting immediately adjacent to streams; and loss of soils productivity and water quality degradation due to surface disturbances caused by proposed oil and gas facilities and infrastructure.

4.3.13.6. SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

Livestock grazing would provide a short-term economic benefit for the livestock industry that would not affect the long-term soil productivity of soils and water if Rangeland Standards and Guides are met as detailed in Chapter 2 Management Common to All. Similarly, minerals development, recreation, and OHV use would provide a short-term economic benefit to the tourism industry and would not affect long-term soil productivity and water quality if appropriate applicant committed measures and Chapter 2`Management Common to All is effectively implemented. However, where surface disturbing activities in reclamation-limited soils cannot be mitigated successfully or reclaimed, some long-term loss of soil productivity could result.

4.3.13.7. IRREVERSIBLE AND IRRETRIEVABLE IMPACTS

Drilling of oil and gas wells would result in an irretrievable loss of that soil productivity within wellpad, wellpad infrastructure, and access roads during the productive life of the well. Areas dedicated to cross country or concentrated OHV use may not be able to be completely restored due to erosion, and some small irretrievable losses of soil may occur. None of the adverse impacts would be irreversible because soils and water productivity could be restored in the long-term.

4.3.14. SPECIAL DESIGNATIONS

Impacts from the various alternatives related to values associated with Areas of Critical Environmental Concern (ACECs), Wild and Scenic Rivers (WSRs), and Wilderness Study Areas (WSAs) are described in this section.

In general, management of specially designated areas is focused on allowing those uses and activities that are considered compatible with the specific, special resources of concern, while restricting those uses and activities that would impact those identified value(s). In the case of ACECs, the management focuses on protecting specific, identified relevant and important values, resources, natural systems, or managing natural hazards.

For river segments that are eligible/suitable for congressional designation into the national system, the management focuses on protecting the specific, identified, outstandingly remarkable values, free-flowing nature, and tentative classifications for eligible river segments.

For WSAs, the management focuses on maintaining the wilderness setting, characteristics and experience, and meeting the non-impairment standard of the IMP. Accordingly, this impact analysis will determine how each alternative impacts the relevant and important values for ACECs, the outstandingly remarkable values and tentative classifications for eligible Wild and Scenic Rivers, and the wilderness setting, characteristics and experience and the non-impairment

standard in WSAs. WSAs will be managed under the IMP in all alternatives. The only decisions being considered for WSAs are OHV, travel routes, and VRM designations.

4.3.14.1. ACECs – Impacts Common to All

Impacts common to all would be caused by adherence to resource program policies such as best management practices, cultural mandates, appropriate fire management response, etc. It will be assumed that all of these would have beneficial effects to the relevant and important values and will not be discussed further. In addition, except for Alternative A, No Action, OHV use would be limited to designated routes unless otherwise specified. This would have beneficial impacts to the relevant and important values of the ACECs by eliminating surface disturbance from cross-country OHV travel. Limiting OHV use to designated routes throughout the planning area would also likely result in a large scale shift in riding in motorized recreation as OHV riders throughout the field office adjust their riding habits to comply with the new restrictions. This shift would likely result in fewer instances of inadvertent, casual, or deliberate illegal riding off designated routes, and would consequently also decrease the risk of impacts to resources within the ACEC.

Any section(s) of a proposed or existing ACEC that falls within a WSA would be managed under the IMP, which strictly regulates surface disturbance and impacts that would alter the naturalness, opportunities for primitive recreation and solitude of the area. One of the practical effects of interim management is permitted activities in WSAs (except grandfathered and valid existing rights) are limited to temporary uses that create no new surface disturbance, nor involve permanent placement of structures (H-8550-1 Interim Management Policy for Lands Under Wilderness Review-BLM 1995). Prescriptions for lands that lie in both (overlap) ACECs and WSAs must comply with the prescription (IMP or ACEC) that is most restrictive. Since the IMP imposes special management conditions to protect wilderness characteristics, it is assumed that there would be no impacts to the relevant and important values in the overlap areas and that ACEC management would be duplicative in most instances. Table 4.102 lists the ACECs with the percent of WSA overlap. Maps 81, 82, and 83 show the areas where ACECs would overlap with WSAs under each alternative.

4.3.14.2. ACECs – Alternatives Impacts

In order for an area to be designated as an ACEC, it must meet the criteria of "relevance" and "importance" and require special management to protect the relevant and important values, resources, natural systems, or hazards (generally referred to as values) as described in 43 CFR 1610.7-2 and BLM Manual Section 1613.11-.12. This analysis focuses on impacts to these values. These impacts are described in detail under Alternative A (No Action). The subsequent impacts analysis for the action alternatives (B, C, D, and E) discloses their level of impact in comparison to Alternative A.

ACECs are areas that are subject to special management to protect relevant and important values. While standard management includes compliance with policy, laws, and mandates, special management typically includes restrictive prescriptions such as closures to mineral development, limits on livestock grazing or restrictions on woodland product harvest, VRM I management, and packing out human waste. Some of the decisions to be made in this plan would have no adverse impacts on existing or potential ACECs, eligible river segments, or WSAs regardless of the alternative chosen. Only decisions that may affect the values of these areas are analyzed further.

Table 4.102. ACECs by Alternative, with Percent of Each that is WSA

ACECs	Alternative A		Alternatives B and E		Alternative C		Alternative D	
	Acres[a]	% WSA	Acres	% WSA	Acres	% WSA	Acres	% WSA
Alkali Ridge	39,202	0	39,196	0	39,196	0	0	N/A
Bridger Jack Mesa	6,260	100	6,225	100	0	N/A	0	N/A
Butler Wash North	17,464	100	17,365	100	0	N/A	0	N/A
Cedar Mesa	295,336[b]	64.0	306,743	68.3	0	N/A	0	N/A
Dark Canyon	61,660	100	61,660	100	0	N/A	0	N/A
Hovenweep	1,798	0	2,439	0	2,439	0	0	N/A
Indian Creek	8,510	13.4	8,510	80.4	3,905	0	0	N/A
Lockhart Basin	N/A	N/A	47,783	0	0	N/A	0	N/A
Lavender Mesa	649	0	649	0	649	0	0	N/A
Shay Canyon	3,561	0	119	0	119	0	0	N/A
San Juan River	0	0	7,590	0	7,590	0	0	N/A
Scenic Highway	57,737 [c]	9,930	0	N/A	0	N/A	0	
Valley of the Gods	0[d]	0	22,863	0	22,863	0	0	N/A
Total	**488,616**		**521,141**		**76,764**		**0**	

[a] GIS technology has changed since the last RMP. Acres listed under this alternative may be slightly different even though the polygon is the same size under other alternatives.

[b] Includes Pine and Step Canyons 21,280 acres of the Scenic Highway Corridor ACEC

[c] Does not include 21,280 acres that overlaps with the Cedar Mesa ACEC.

[d] Acreage included in Cedar Mesa ACEC (31,387 acres).

4.3.14.2.1. ALKALI RIDGE ACEC[3]

Alkali Ridge is proposed as an ACEC (39,202 acres) under Alternatives A, B, C, and E to provide special management attention to protect the area's relevant and important cultural values. The area would not be designated as an ACEC under Alternative D.

4.3.14.2.1.1. Alternative A

Under Alternative A, Alkali Ridge ACEC would be managed as open to most resource uses including mineral development, woodland harvest, livestock and OHV use, and land treatments. Cultural resources would be avoided by a sufficient margin as to allow permanent protection. This ACEC would also encompass the Alkali Ridge National Historic Landmark, which would have identical management prescriptions under this alternative, including the requirement that cultural resources be avoided by 100 feet. It should be noted that agency responsibilities to a National Historic landmark are higher than to National Register listed or eligible properties (see 36CFR65.2(c)(2): Federal agencies must take actions to minimize impacts to such a resource, in consultation with the Advisory Council). Active leasing within a landmark where data recovery

[3] In order to reduce redundancy, when similar impacts occur in different ACECs, a detailed explanation of impacts will be given in the first ACEC presented. Subsequent analysis will summarize the impacts and the reader can assume that the detailed information of impacts from the previous ACEC also applies.

might be required would likely be construed as an increased threat. In the remainder of the ACEC, all cultural properties eligible for the National Register of Historic Places would be surrounded by an avoidance area sufficient enough to allow permanent protection.

In general, direct impacts to cultural resources under this alternative would be avoided through adherence to the Section 106 process and avoidance of sites through relocation of surface disturbing activities. However, cultural resource districts, landscapes, and some traditional cultural properties (TCPs) would not be afforded the same beneficial protection due to the fact that these types of resources often cover vast geographic areas and have multiple individual sites which may be affected by the physical and auditory disturbances created by construction and operation of mineral development infrastructure and other surface disturbing activities. Physical and auditory disturbances are especially critical to TCPs where view shed and soundscapes are the primary components. These impacts can render the TCP non-functional for the related Native American tribe or other cultural group (BLM 2004).

Although livestock grazing would be managed under the Standards for Rangeland Health there is potential for direct impacts to cultural resources from trampling and loss of vegetation in areas with livestock grazing, especially in riparian areas or other areas where cattle tend to congregate. Trampling can dislodge and fracture cultural artifacts and destroy site integrity. Loss of vegetation exposes cultural resources making them more susceptible to looting and degradation from exposure (Roney 1977). Most of the adverse effects to the sites in the Monticello FO have occurred from past livestock grazing and trailing activities (personal communication between Nancy Shearin, Monticello FO and Deb Reber, SWCA, 2006). Future disturbance will only add to the site degradation.

Indirect negative impacts to cultural resources may also occur from recreational activities that are not targeted under Section 106. Increasing visitation from hikers, cyclists, and OHV users to more remote areas would increase the risk of intentional and inadvertent damage to cultural resources. Loss of ground cover may churn up archaeological deposits and destroy historical context. Archaeological materials exposed by natural or human-induced erosion would then become vulnerable to unauthorized collection (VanderHoek 2005). The risk would be greater from OHV use due to their ability to travel over greater distances and access more remote locations. Under Alternative A OHV use is limited to existing trails in 90% of the proposed ACEC with the other 10% open to OHV use. In the area that is open to OHV use there would be potential for direct negative impacts from inadvertent damage to sites from cross-country OHV travel.

Alternative A allows for private and commercial use of woodland products. There is potential for negative indirect impacts to cultural resources from this activity. Impacts consist primarily of unintended damage to cultural sites by driving vehicles off designated roads for the cutting and loading of wood and the subsequent use of the resultant "trail" (tire tracks) by OHV riders (BLM 2004).

Allowing surface disturbing vegetation treatments would have adverse and/or beneficial long-term effects. Adverse effects would be possible if cultural surveys (especially in areas of dense vegetation cover) do not reveal cultural resources and treatments inadvertently destroy them. Vegetation treatment projects also could impacts sites where Native Americans collect plants that are culturally significant. (CA. State Board of Forestry and Fire Protection 2006) In addition, if locations of cultural resources are known and surrounding areas are treated, the demarcation

between the treatment and non-treatment areas makes cultural resources more visible and therefore more subject to damage and looting. Conversely, beneficial impacts to cultural resources would occur from the reduction in fuels loading and may protect sites from wildfire in addition to offering positive benefits to other resource programs.

Under Alternative A the area would be open for mineral leasing with 473 acres (< 1.0%) managed under Standard Stipulations and 38,729 acres (99.0%) under timing and controlled surface use. The entire ACEC falls within the Blanding Sub-Basin RFD area that has a high potential for mineral development. Approximately 41 wells are predicted to be developed in the area totaling 394 acres of surface disturbance. (See minerals discussion for specifics). Although surveys would have to be conducted prior to development, identified sites would have to be avoided, and mitigation measures employed there is a risk of impacts to the integrity of the landscape as discussed in the second paragraph of Alternative A.

4.3.14.2.1.2. Alternative B

Alternative B management prescriptions differ from Alternative A by proposing to close the area to woodland product use and surface disturbing vegetation treatments, restricting livestock use if cultural resources are being impacted and managing the area as VRM IV rather than VRM III.

There would be a beneficial long-term effect from closing the area to woodland product use because it would eliminate any chances of secondary impacts from cross-country travel to collect wood. (See discussion of impacts from OHV use under Alternative A) This proactive decision would offer a greater degree of protection to cultural resources than Alternative A.

Unlike the other alternatives, Alternatives B specifically states that livestock use would be restricted if cultural resources are being damaged. There is no difference between this alternative and Alternatives A, C, and D from a management perspective as this restriction could be implemented regardless of whether or not it is stated in the RMP. However it does forewarn the permittee and may give the resource specialist more leverage to implement the restriction for site-specific proposals because it would be based on recent analysis and decisions.

Alternative B would limit OHV use to designated trails in the entire ACEC rather than the 90% under Alternative A. This would offer a slightly greater margin of protection for cultural resources over Alternative A by eliminating cross- country travel in an additional 10% of the area.

Alternative B does not allow for surface disturbing vegetation treatments and treatment must avoid cultural sites by a sufficient margin as to have no impact. This decision provides the highest degree of beneficial protection to cultural resources because is does not allow for surface disturbance thereby eliminating any possibility of damage from surface disturbing activities.

The final difference between Alternative A and Alternative B is the change from VRM management class III to VRM IV. VRM IV would allow for major modifications to the landscape in comparison to VRM III that would allow moderate changes. However, this shift of VRM management class is unlikely to have a substantial effect on cultural resources and associated values as both classes allow for development and associated surface disturbance.

Under this alternative, the ACEC would also include Alkali Ridge National Historic Landmark which would be managed with the same prescriptions as the ACEC with the following exceptions: 1) it would be managed as NSO for oil and gas leasing rather than timing and

controlled surface use; 2) campfires would not be allowed; 3) it would be closed to geophysical work and the disposal of mineral materials; and 4) it would be recommended for withdrawal from locatable mineral entry. These actions would have direct beneficial long-term effects to cultural resources because they would eliminate any chance of inadvertent disturbance to cultural sites from mineral development and recreational use, thereby reducing potential risk to the integrity of the sites on a landscape level.

4.3.14.2.1.3. Alternative C

Alternative C proposes the same management prescriptions as Alternative A except for prescriptions involving woodland harvest and vegetation treatments. Woodland harvest would be allowed but off-road travel to conduct that harvest would be allowed in chained areas only. Since surveys are required prior to chaining activities cultural resources would typically have been identified and avoided before subsequent woodland harvest occurs. However, indirect OHV impacts could result as described in Alternative A.

Alternative C also differs from Alternative A in that it allows for woodland product use, however that use would be confined to specific areas within Alkali Ridge if cultural resources are being damaged. This adaptive management strategy offers beneficial protection, including the closure of areas if there is evidence of damage. This is more restrictive than Alternative A and less restrictive than Alternative B.

Alternative C allows for vegetation treatments with non-surface disturbing methods being preferred. If surface disturbing treatments were approved access routes would have to be reclaimed to prevent future use. This decision would prevent adverse impacts from OHV use as routes would be reclaimed thereby eliminating access. It also allows for noxious weed treatments that use the minimum amount of surface disturbance necessary.

Alkali Ridge National Historic Landmark would be managed the same as it is under Alternative B except the area would be open to geophysical exploration that meets the definition of "casual use". Impacts would be similar to Alternative B with a slightly greater risk of minor surface disturbance from geophysical exploration.

4.3.14.2.1.4. Alternative D

Under Alternative D the area would not be designated as an ACEC and would be managed as open to all uses. The area would be available for woodland harvest, watershed improvements, and livestock use. It would be managed as available for mineral development and as VRM Class IV.

The impacts for this alternative would be similar to Alternative A.

4.3.14.2.1.5. Alternative E

The impacts under Alternative E would be the same as those under Alternative B because the management decisions would be the same.

4.3.14.2.2. Bridger Jack Mesa ACEC

Bridger Jack Mesa is proposed as an ACEC (6,260 acres-Mesa top only) under Alternatives A, B, and E to protect the relevant and important relict vegetation values. It would not be designated

as an ACEC under Alternatives C and D. The entire proposed ACEC falls within the Bridger Jack Mesa WSA.

4.3.14.2.2.1. Alternative A

Under Alternative A the area would be designated as an ACEC and managed to exclude almost all surface disturbing activities including mineral development which would only be allowed with No Surface Occupancy stipulations. By curtailing virtually all surface disturbing activities this alternative would offer direct long-term beneficial impacts to the relevant and important values. It should be noted that since the area is overlapped by Bridger Jack WSA and managed under the IMP it would be managed so as to prevent impairment to the wilderness values (Map 81). This serves the same purpose as the proposed management prescriptions and is therefore duplicative management.

Recreational use would be allowed but would be limited if vegetative resources are being damaged. Due to the inaccessibility of the area recreation use is anticipated to be low. OHV and mountain bike use would not be allowed. Therefore, recreational activities would consist mainly of light foot traffic and would have minor to negligible negative effects on the vegetation.

4.3.14.2.2.2. Alternative B

Alternative B would also designate the area as an ACEC and proposes the same management prescriptions as Alternative A except there would be an allowance for non-motorized/non-mechanized commercial recreation if the vegetation communities would not be adversely impacted. In addition, there would be a slight modification of the ACEC boundary to exclude the non-vegetated spires. Impacts would be similar to Alternative A.

4.3.14.2.2.3. Alternative C

Alternative C proposes to drop the current ACEC designation and manage the area with prescriptions of the surrounding area with the only special management being exclusion from livestock and saddle stock grazing and woodland product use. As with Alternatives A and B it would be managed under the IMP so vegetation values would be protected regardless of whether or not it is an ACEC. As mentioned under Alternative A the area is mostly inaccessible unless you are a climber, so the exclusions of livestock grazing and woodland product use don't appear to be necessary to protect the resource.

4.3.14.2.2.4. Alternative D

Alternative D is the same as Alternative C.

4.3.14.2.2.5. Alternative E

The impacts under Alternative E would be the same as those under Alternative B. Under this alternative, approximately 8 acres of land with non-WSA wilderness characteristics would be managed to protect the wilderness values within this area; however, this relatively small area and the remainder of the proposed ACEC would receive similar protection under WSA IMP stipulations, as discussed under Alternative A, so the impacts to wilderness values would be the same as Alternative B.

4.3.14.2.3. BUTLER WASH NORTH ACEC

Butler Wash North is proposed as an ACEC (17,464 acres) to protect the areas scenic values under Alternatives A, B, and E. The area would not be designated as an ACEC under Alternatives C and D. The entire proposed ACEC would lie within the Butler Wash WSA.

4.3.14.2.3.1. Alternative A

Under Alternative A the area would be managed as NSO for minerals leasing with exceptions allowed if a project proposal meets the visual quality standards for the area. Since the area would be managed as VRM I the visual standards to retain a natural landscape are high. As per BLM Manual 8410 the objectives would be to preserve the existing character of the landscape and the level of change should be very low and should not attract attention. Consequently, any development must adhere to these standards and the visual quality would be preserved. Geophysical work would be allowed but these types of operations are intermittently spaced and their effects are localized, resulting in minimal surface disturbance. Thus, direct negative impacts from geophysical work on the scenic quality would be low.

As a result of the decision to close the area to use of woodlands products there would be no harvest of pinyon juniper thereby providing beneficial impacts to visual resources by retaining the natural character of the landscape.

Livestock grazing would be allowed and would be managed under the Standards and Guidelines for grazing management. One of the guidelines states that when establishing grazing practices and rangeland improvements, the quality of the outdoor recreation experience would be considered. Aesthetic and scenic values, water, campsites and opportunities for solitude are among those considerations. For that reason there would be negligible effects from this activity on the scenic quality.

Note: Since the entire area falls within a WSA, management prescriptions between the alternatives would have to conform to the IMP. Designating the area as an ACEC would provide little if any additional protection to the area.

4.3.14.2.3.2. Alternative B

Alternative B proposes an almost identical management prescription as Alternative A except the BLM would seek to acquire State inholdings and would impose limitations on livestock grazing if scenic resources are being impacted. Seeking state inholdings would have a major beneficial impact to the ACEC values because the State is not obligated to follow the IMP on their inholdings within WSAs so development is possible within those areas. Any development involving surface disturbance would have a negative impact on the scenic values. If the BLM acquires those inholdings they would be managed in accordance with the IMP thereby protecting the scenic values of the ACEC.

4.3.14.2.3.3. Alternative C

Alternative C would not designate Butler Wash ACEC and management would default to the IMP. This alternative would not pursue State inholdings that would allow for development on State sections and could impact the scenic values of the ACEC as noted above.

4.3.14.2.3.4. Alternative D

Alternative D is the same as Alternative C.

4.3.14.2.3.5. Alternative E

The impacts under Alternative E would be the same as those under Alternative B because the management decisions would be the same. Note that 37 acres of land with non-WSA wilderness characteristics would be managed to protect the wilderness values within this area. Similar to the discussion for Bridger Jack Mesa, this relatively small area would receive similar levels of wilderness value protection under the IMP, so the impacts would be the same as Alternative B.

4.3.14.2.4. CEDAR MESA ACEC

Cedar Mesa is currently managed as an ACEC under Alternative A to protect its cultural, scenic, fish and wildlife values and the designation would continue under Alternatives A, B, and E. Under Alternative A, the ACEC (295,336 acres) would include Valley of the Gods. Under Alternatives B and E the ACEC (306,743 acres) would not include Valley of the Gods as it is proposed as a separate ACEC under these alternatives. Cedar Mesa would not be designated as an ACEC under Alternatives C and D. The area would also be managed as a CSRMA under all alternatives. (See the recreation section for a discussion of impacts from this decision). Grand Gulch, Road Canyon, Fish Creek Canyon, and Mule Canyon WSAs overlie the proposed Cedar Mesa ACEC comprising 209,619 acres or 71% of the proposed ACEC under Alternative A and 68% under Alternative B. The existing ACEC configuration includes Valley of the Gods (22,863 acres), which is proposed as a separate ACEC under Alternatives B, C, and E.

The WSAs would be managed under the IMP and the Grand Gulch Special Emphasis area management prescriptions are discussed in the next section.

The remaining acres would be managed as outlined in the alternatives matrix and the impacts from those decisions are discussed below. Those prescriptions that are in line with IMP direction would also apply to the WSA area.

4.3.14.2.4.1. Alternative A

Under Alternative A, the 295,336 acre area would be available for land treatments and wildlife habitat and range improvements. All of these actions would have beneficial impacts to the relevant and important wildlife values by maintaining or enhancing vegetation and forage.

With this alternative the area is open to woodland product harvest in designated areas. On-site collection of dead fuel wood would be allowed throughout the entire area. The harvesting of woodland product could be detrimental to the values of the ACEC depending on the area involved and the amount of wood harvested. Direct adverse effects include human disturbance, surface disturbance, and removal of wildlife habitat. Indirect effects include the potential introduction of weedy, non-native species to wildlife habitats, which would compete with the native species on which wildlife depends.

Under Alternative A the area would be open for mineral leasing with 1,521 acres (< 1.0%) managed under Standard Stipulations, 75,892 (26.0%) under timing and controlled surface use, 23,387 acres (8.0%) under NSO, and 194,537 (66.0%) as closed to leasing. The entire ACEC falls within the Monument Upwarp RFD which has low potential for mineral development (See

minerals discussion for specifics). Nine wells would be developed in the Monument Upwarp during the life of the plan totaling 69 acres of surface disturbance. There would also be surface disturbance created by geophysical work totaling 120 acres within the Monument Upwarp. This would be totally reclaimed within ten years. The area is also open to the disposal of mineral materials and mineral entry. Depending on the location of these activities, there would be a risk of compromising the scenic values of the ACEC because of surface disturbance caused by mining activities and mineral development. There would be indirect negative impacts to wildlife and fish due to sedimentation, habitat fragmentation, and noise from construction and operational activities. All of these development activities may be limited by the prescription that revegetation for surface disturbance would be limited to what can be successfully established within 5 years after project completion. Depending on the soil and vegetation type in the project area this could preclude some development and would benefit the values of the ACEC.

In the areas where the Scenic Highway Corridor overlaps (21,280 acres) the ACEC special conditions for the Corridor take precedence. The Corridor would be managed as open to most uses including mineral entry but it would also be managed as NSO for minerals and as VRM I. These two prescriptions would rule out any occurrences of visible surface disturbance and would consequently protect the values of the ACEC in this area of overlap.

Special protective management prescriptions close the Grand Gulch Special Emphasis Area to the following uses: mineral leasing, geophysical work, disposal of mineral materials, woodland product harvest, and ORV use. In addition a withdrawal from mineral entry would be requested and the area would be managed as VRM I. All of these actions would benefit the area by preventing surface disturbance.

4.3.14.2.4.2. Alternative B

Alternative B's management prescriptions diverge from Alternative A in the aspects of recreational use, livestock use, and woodland product harvest.

Under Alternative B the area would be available for livestock use but with special conditions to protect at risk cultural resources. The special conditions mostly involve fencing to keep livestock from impacting sites with features at risk such as standing walls or large middens. Restrictions would be in conformance with the grazing permit renewal stipulations specific to protecting cultural resources at risk from livestock impacts within each allotment. Thus, there would be variations in protective measures for each allotment depending on site density and type. (personal communication between Nancy Shearin, Monticello FO and Deb Reber, SWCA on August 24, 2006) This prescription will offer beneficial direct impacts to the cultural values of the ACEC by preventing damage from livestock trampling.

Recreation use under Alternative B would be curtailed in the following ways: 1) the area would be closed to dispersed camping; 2) overnight campers would be required to pack out human waste; 3) recreation permits for both day and overnight use would be limited as necessary to prevent cultural site damage from over visitation and 4) campfires would be limited to mesa tops and would be closed if there are impacts to cultural sites. All of these actions would provide beneficial direct and indirect impacts to the cultural, scenic, fish and wildlife values. Closing the area to dispersed camping and limiting visitation would decrease surface disturbance, limit social trails, and may reduce vandalism, pot hunting, and surface collections.

Alternative B provides for additional beneficial impacts to the ACEC values by requiring that human waste be packed out. This decision would maintain aesthetic values, water quality, and improve health and safety concerns. For much of Cedar Mesa there is concentrated use in narrow corridors. These small areas cannot isolate and naturally process large amounts of human waste. Research has shown that buried feces, and the microbes in it, persist for many months when buried. The volume of waste generated along the trail, combined with a climate that is not conducive to composting, make significant "digestion" of waste unlikely.

Closing the area to private and commercial use of woodland products would have direct beneficial impacts to the relevant and important values of the ACEC. This decision would diminish impacts to cultural sites by eliminating unintended damage from driving vehicles off designated roads for the cutting and loading of wood and the subsequent use of the resultant "trail" (tire tracks) by OHV riders. This decision would also prohibit the harvesting of pinyon-juniper providing beneficial impacts to wildlife species such as mule deer, elk, mountain lion, neotropical birds, and upland game birds, which use this vegetation type as habitat.

Impacts to the Grand Gulch Special Emphasis Area would be the same as Alternative A.

4.3.14.2.4.3. Alternative C

Under Alternative C the area would not be designated as an ACEC. It would be managed as a C-SRMA (see Section 4.3.10, Recreation).

Impacts to the Grand Gulch Special Emphasis Area would be the same as Alternative A.

4.3.14.2.4.4. Alternative D

Alternative D would be the same as Alternative C.

Impacts to the Grand Gulch Special Emphasis Area would be the same as Alternative A.

4.3.14.2.4.5. Alternative E

The impacts under Alternative E would be the same as those described under Alternative B, except that approximately 60,049 acres (20% of the proposed Cedar Mesa ACEC) would be managed to preserve the wilderness values within non-WSA lands with wilderness characteristics. This management would benefit the relevant and important (scenic, wildlife, and fish) values of the ACEC within this area by reducing visual impacts, habitat fragmentation, and surface disturbance. These areas would be managed as VRM Class I, closed to mineral leasing, managed as exclusion areas for ROWs, closed to new road construction, closed to woodland harvesting and gathering, and closed to off-route OHV travel.

The impacts to the Grand Gulch Special Emphasis Area would be the same as Alternative A.

4.3.14.2.5. Dark Canyon ACEC

Dark Canyon is an existing ACEC (61,660 acres) and Alternatives A, B, and E (61,660 acres) would continue ACEC management to protect the scenic and wildlife values. The ACEC would not be designated under Alternatives C and D. Dark Canyon WSA overlaps the entire proposed ACEC (Maps 81 and 82).

4.3.14.2.5.1. Alternative A

Alternatives A proposes to exclude most surface disturbing activities including woodland product use, OHV use, livestock use, and mineral development. The area would also be managed under VRM I management class. The prescriptions of VRM I management and exclusion of surface disturbing activities offer the same benefits in terms of impacts and are somewhat duplicative. Excluding surface disturbing activities would have beneficial impacts to the relevant and important values because the natural character of the landscape would be retained thereby protecting scenic values. These management prescriptions would also offer benefits to wildlife by eliminating noise from construction projects, preventing habitat fragmentation, retaining soil structure and preventing vegetation loss. VRM I management would have similar beneficial impacts because the level of change to the characteristic landscape must be very low and not attract attention consequently eliminating most surface disturbing activities.

Besides the benefits of reducing surface disturbance, closing the area to OHV use would benefit wildlife by eliminating noise disturbances. Scientific literature indicates some wildlife species may be affected by excessive noise and disturbance. Displacement during winter depletes energy reserves needed for survival and reproduction by mammals and birds. On the other hand, some species (especially deer) adapt to the noise disturbance over time and may no longer be displaced by the activity (USFS 2005).

Under Alternative A, area recreation use would be limited if cultural or resources or scenic values are being damaged. Although this decision would be beneficial in the long term there is risk of short term direct and indirect negative impacts to the area from increased recreation use as limitations on use would only be applied after there is evidence of damage. Scenic values could be compromised by localized surface disturbance. Vegetation around the perimeter of campsites could be destroyed as more and larger groups occupy the sites. There is potential for cutting of greenwood because of lack of dead and downed wood for campfires and an increased risk of human induced wildfire. Water quality could be diminished by an increase in human and pet waste. Negative impacts to wildlife could occur from noise disturbances during sensitive breeding and foraging periods.

A withdrawal for mineral entry would be requested and this would have the same beneficial impacts as the preclusion of surface disturbance prescription noted above.

4.3.14.2.5.2. Alternative B

Alternative B differs from Alternative A because campfires would only be allowed on mesa tops (not in the canyons) and there would be a requirement to pack out human waste. As stated under Cedar Mesa ACEC, Alternative B requires that human waste be packed out would maintain aesthetic values, water quality, and improve health and safety concerns. This would indirectly benefit wildlife as they rely on healthy water systems. Packing out waste would offer some benefits to the scenic values by reducing the risk of erosional forces revealing human waste and paper by-products. Restricting campfire use to mesa tops would have minor beneficial impacts to the scenic values by reducing the risk of wildfire and eliminating unsightly campfire rings, ash, and debris. Reducing the risk of wildfire would have long-term beneficial impacts on wildlife because habitat would be preserved.

4.3.14.2.5.3. Alternative C

Alternative C is the same as Alternative B, except woodland harvest would be allowed and a withdrawal for mineral entry would not be requested.

4.3.14.2.5.4. Alternative D

Alternative D management prescriptions are the same as Alternative C.

4.3.14.2.5.5. Alternative E

The impacts under Alternative E would be the same as those described under Alternative B because the management decisions would be the same. Approximately 281 acres of non-WSA lands with wilderness characteristics would be managed to preserve the wilderness values within this area; however, the proposed ACEC would lie entirely within the Dark Canyon WSA, so the impacts would be the same because wilderness values protection would be applied under IMP stipulations.

4.3.14.2.6. HOVENWEEP ACEC

Hovenweep is an existing ACEC (1,798 acres) and Alternatives A, B, C, and E would continue ACEC management to provide special management attention to protect the area's relevant and important cultural and habitat management values. The size of the ACEC would be increased from 1,798 acres under Alternative A to 2,439 acres under Alternatives B, C, and E. The additional 620 acres is contiguous with the existing ACEC and is east of Hovenweep National Monument. The area would not be designated as an ACEC under Alternative D.

4.3.14.2.6.1. Alternative A

Under Alternative A, No Action, Hovenweep ACEC would be managed as open to most uses except for the disposal of mineral materials and woodland product use.

Mineral leasing would be subject to standard terms on 170 acres (9.0% of the ACEC), timing and controlled surface use on 913 acres (51.0%), which includes the ten acres of Cajon Pond Habitat, and no surface occupancy on 735 acres (40.0%) for the Visual Protective Zone. Surface uses would be precluded in Cajon Pond during the shorebird and waterfowl courtship and nesting season (March 1-June 30). The proposed ACEC is in the Blanding Sub-basin, the RFD area that has high potential for mineral development. Those portions that are managed with timing and controlled surface use or standard terms would be subject to impacts from surface disturbance (see Alkali Ridge ACEC impacts discussion). The NSO stipulations for the Visual Protection Zone would offer indirect beneficial protection to values of the ACEC by eliminating surface disturbance.

Mineral entry would be allowed with an approved plan of operation.[4] This would have negative effects on the values of the ACEC if approved. Although impacts to cultural sites would be mitigated there is still a risk of loss of site integrity and damage to cultural resources from

[4] There is no historical knowledge of the evolution of these seemingly opposite management decisions other than mineral withdrawals require congressional approval which can be extremely labor intensive and time consuming to obtain.

relocation. Depending on the location of the mine, there could be degradation to visual quality in the Visual Protective Zone and Hovenweep National Monument.

4.3.14.2.6.2. Alternative B

Under Alternative B an additional acquired 620 acres contiguous to the eastern border of the current ACEC and Hovenweep National Monument would be added to the ACEC. Alternative B would be managed the same as Alternative A except under Alternative B no new routes would be designated within the ACEC and surface disturbing land treatments would not be allowed. One other key difference between Alternative A and B is that Alternative B would manage the area as open to oil and gas leasing with standard stipulations. The fact that oil and gas leasing would be managed under standard stipulations could negate the positive aspects of the other two decisions, which preclude surface disturbance. Allowing surface disturbance of up to 9.6 acres per well would have a detrimental effect on the visual, cultural, and wildlife resources. The visual protection zone and Cajon pond would be open for development. This could degrade the scenic quality of the surrounding areas including Hovenweep National Monument and may impact wildlife species utilizing the pond as habitat. In addition to surface disturbance, indirect adverse effects include noise and habitat fragmentation.

4.3.14.2.6.3. Alternative C

Alt C is similar to Alternative A except that it would allow for watershed improvements and vegetative treatments as long as cultural sites are not impacted and the emphasis would be on non-surface disturbing treatments. This allows for more protection of cultural sites while still allowing the flexibility to conduct treatments when needed to prevent noxious weed infestations and to improve wildlife habitat.

As with Alternative B, the main difference between Alternative C and Alternative A is the change from managing oil and gas leasing as NSO and timing and controlled surface use to standard stipulations. Impacts would be the same as noted in Alternative B.

4.3.14.2.6.4. Alternative D

Alt D would not designate the ACEC and would manage the area with similar prescriptions of the surrounding area. This equates to the same management as Alternative C except the area would be managed as VRM IV. This would allow for the level of change to the landscape to be high rather than moderate. This difference would have a negligible on the impacts to the ACEC values. Consequently, impacts from Alternative D would be similar to Alternative C.

4.3.14.2.6.5. Alternative E

The impacts under Alternative E would be the same as those under Alternative B.

4.3.14.2.7. INDIAN CREEK ACEC

Indian Creek is proposed as an ACEC under Alternatives A, B, C, and E to provide special management attention to protect the area's relevant and important scenic values. The area would not be designated as an ACEC under Alternative D. The size of the proposed ACEC varies between alternatives. Under Alternative A it would be 8,510 acres with 6,130 acres (47%) overlapping the Indian Creek WSA (Map 81). Under Alternatives B and E, the ACEC would be

8,510 acres with 4,602 acres (54%) overlapping the Indian Creek WSA (Map 82) and under Alternative C it would be 3,908 acres with the WSA completely excluded (m\Map 83). The WSA would be managed under the IMP.

4.3.14.2.7.1. Alternative A

Under Alternative A the area would be managed as closed to the disposal of mineral materials, woodland product harvest, and OHV use. Closures to all of these activities would benefit the scenic quality by preventing surface disturbance.

Surface disturbing activities such as mineral leasing, geophysical work and mineral entry would be allowed but they would be subject to a VRM I management standard which would either preclude the project entirely or only allow it if it meets the visual quality standards for the area. (As an example, mineral infrastructure may be located in a deep gully or other area that is topographically invisible from a typical viewpoint.) Restricting or concealing these activities would preserve the soil and vegetation in visible areas thereby protecting the scenic quality.

Recreation use would be curtailed if scenic values were damaged. As mentioned in Section 4.3.10, Recreatioin, this would have an impact as the use would be allowed until there is evidence of damage. The evidence could be as minor as footprints in biological soil crusts to something more significant such as a social trail in sensitive soils.

The area would be available for livestock use. This would have negligible impacts on the scenic quality.

Another management prescription that would preserve and enhance the scenic qualities would be the requirement that revegetation be done with native species only. This would help retain the natural characteristics of the area and eliminate unnatural breaks of differing vegetation types.

4.3.14.2.7.2. Alternative B

Alternative B proposes three changes from Alternative A to protect relevant and important values. First, the BLM would request a secretarial withdrawal for the area, which means it would be permanently closed to mineral entry. This would guarantee that mineral entry would not occur in this area even in non-visible areas. This affords permanent protection from surface-disturbing mining activities by preventing viewshed degradation.

The second, a prescription for allowing geophysical work if VRM I can be met, is a moot point as all uses would have to meet VRM I.

Third, closing the corridor proper to dispersed camping would mainly protect riparian resources but would offer minor indirect protection to the visual resources by preventing areas from becoming denuded of vegetation due to overuse.

4.3.14.2.7.3. Alternative C

Alternative C is the same as B except it allows for some dispersed camping but only outside of specified zones. The difference between the two alternatives to prevent damage to scenic resources is negligible.

4.3.14.2.7.4. Alternative D

Alternative D would not designate the area as an ACEC and would allow all uses including dispersed camping. The area would be managed as VRM III. The area (3908 acres) that is NSO under Alternatives A, B, and C would be managed as available to mineral leasing with timing and controlled surface use. Allowing for surface disturbing activities and construction of mineral infrastructure would not protect the area's scenic qualities and could alter the nature of the landscape.

4.3.14.2.7.5. Alternative E

The impacts under Alternative E would be the same as those under Alternative B, except approximately 3,887 acres (30% of the proposed ACEC) would be managed to maintain the wilderness characteristics of non-WSA lands with wilderness characteristics, including closure to mineral leasing. This would have long-term, beneficial impacts on the proposed ACEC's important scenic values because protection of non-WSA lands with wilderness characteristics values would also include designation as VRM I.

4.3.14.2.8. LOCKHART BASIN ACEC

Lockhart Basin is proposed as an ACEC (47,783 acres) under Alternatives B and E to provide special management attention to protect the area's relevant and important scenic values. There is currently no existing ACEC for Lockhart Basin. A portion of the potential ACEC includes the existing Indian Creek ACEC. The area would not be designated as an ACEC under Alternatives C
and D.

4.3.14.2.8.1. Alternative A

Under Alternative A the portion that is a WSA within the existing Indian Creek ACEC (6,884 acres) would be managed as VRM I. The remaining 39,091 acres would be managed as VRM II. Although the area would be open to most uses including mineral development with the stringent nature of the VRM I and II classes would preclude almost all surface disturbance and would preserve the scenic values of the ACEC, especially in VRM I areas. There would be some risk of change to the landscape under VRM II but as noted in VRM class objectives they should not attract the attention of the casual observer.

4.3.14.2.8.2. Alternative B

Alternative B and Alternative E are the only alternatives proposing that Lockhart Basin be designated as an ACEC to protect its scenic values. Alternative B would preclude surface disturbing activities, manage the area under VRM I scenic quality objectives, and propose the area for withdrawal from mineral entry. Precluding surface disturbing activities and managing the area as VRM I would offer a high degree of protection of the visual resources thereby protecting the ACEC's relevant and important values.

4.3.14.2.8.3. Alternative C

Alternatives C would not designate the ACEC and would allow most uses except woodland product harvest. Mineral leasing would be subject to timing limitations and controlled surface

use but only in the bighorn sheep area. The rest of the area would be open with Standard Stipulations. The area would be managed as VRM III. These alternatives would not protect the scenic values of the area as oil and gas development would be allowed and the wells along with the associated infrastructure would degrade the visual quality from select viewpoints.

4.3.14.2.8.4. Alternative D

Alternative D is the same as Alternative C.

4.3.14.2.8.5. Alternative E

The impacts under Alternative E would be the same as those under Alternative B, except that approximately 21,298 acres (45% of the proposed ACEC) would be managed to protect the wilderness characteristics of non-WSA lands with wilderness characteristics. This management would provide additional protection for the ACEC's relevant and important (scenic) values by closing these acres to mineral leasing and geophysical exploration (by eliminating exemptions for geophysical exploration when VRM Class I criteria could be met), and by managing the non-WSA lands with wilderness characteristics under VRM I scenic quality objectives.

4.3.14.2.9. LAVENDER MESA ACEC

Lavender Mesa is an existing ACEC (649 acres) and the designation would continue under Alternatives A, B, C, and E to protect the area's relevant and import relict vegetation values. The area would not be designated as an ACEC under Alternative D.

4.3.14.2.9.1. Alternative A

Alternative A would prohibit OHV use, disposal of mineral materials, use of woodland products, grazing, land treatments (including vegetation treatments), wildlife habitat improvements, watershed control structures, and surface disturbance. The area would be managed as VRM Class II. Recreational use would be allowed but access is difficult. This alternative offers beneficial long-term impacts to the proposed ACEC values by precluding virtually all surface disturbances thereby protecting the relict vegetation. There could be minor adverse impacts from hikers and climbers trampling vegetation or camping on the relict vegetation but recreational use can be curtailed under this alternative if there are any signs of damage to relict vegetation. Some mineral development would also be allowed but only on the slopes of the mesa as the mesa tops are closed. This would not impact the relict vegetation values on the mesa tops.

There is a risk of negative impacts from the exclusion of vegetation treatments. If noxious weed seeds were introduced by a hiker or wildlife (birds) and the species spread throughout the mesa they would be difficult to contain by manual pulling. This could have adverse effects to the native species and the relict vegetation values because the noxious weeds could take over their habitat.

4.3.14.2.9.2. Alternative B

Alternative B management prescriptions are the same as Alternative A except under Alternative B there would be allowances to conduct non-surface disturbing vegetative treatments to control invasive species and for rehabilitation of disturbed surfaces. Alternative B would also prohibit campfires and limit recreation if vegetative resources are being impacted.

These prescriptions would offer a slightly higher degree of beneficial impacts to the relict vegetation than Alternative A because controlling invasive species would benefit the native plants. Given that invasive plants draw excessive amounts of water from the soil, displace native plants, and are practically unusable for food, cover, or nesting substrate by native wildlife (BLM Undated) they are a major threat to native species. Implementing this prescription would reduce the risk of invasive species gaining a foothold in the area consequently protecting and allowing for an increase in relict vegetation.

Prohibiting campfires would also provide a higher level of protection to the relict vegetation values in comparison to Alternative A by eliminating the possibility of damage from campfires, campfire rings, or the possibility of human induced wildfires.

4.3.14.2.9.3. Alternative C

Impacts from Alternative C are the same as Alternative B.

4.3.14.2.9.4. Alternative D

Alternative D differs from Alternative A because the area would be managed as VRM III rather than VRM II and travel would be limited to designated routes rather than being closed to OHV use. Neither of these prescriptions would have any impact to the relict vegetation values. Although VRM III has a much lower visual standard requirement than VRM II the impacts would be precluded by the other prescriptions that limit surface disturbance such as the NSO category for minerals leasing. Since the area in inaccessible to vehicles limiting them to designated routes is a moot point.

4.3.14.2.9.5. Alternative E

The impacts under Alternative E would be the same as those under Alternative B, except that additional protections of the ACEC's relevant and important (relict vegetation) values would occur due to management intended to maintain the wilderness characteristics of non-WSA lands with wilderness characteristics. This alternative would provide more protection for relict vegetation by closing the entire 649-acre ACEC to oil and gas leasing and locatable mineral entry, as well as managing it under VRM Class I objectives to allow a very low level of surface disturbance.

4.3.14.2.10. SHAY CANYON ACEC

Shay Canyon is an existing ACEC (3,561 acres) and Alternatives A, B, C, and E would continue ACEC management to provide special management attention to protect the area's relevant and important cultural values. The size of the ACEC would be reduced to 119 acres under Alternatives B, C, and E to only include the area with the highest site density. It would not be designated under Alternative D.

4.3.14.2.10.1. Alternative A

Under Alternative A the area proposed for designation is 3,561 acres and would include the Newspaper Rock art panel, the riparian corridor of Indian Creek and the core of Shay Canyon.

Alternative A would allow for grazing, campfires, and camping within the ACEC. All of these activities would increase the risk of minor localized surface disturbance to the cultural and

paleontological sites from trampling and exposure. There is also potential for looting and vandalism from campers who may discover previously unexposed sites.

Under Alternative A the area would be managed as VRM Class I. This management prescription would virtually eliminate the risk of damage from major surface disturbing activities within the 3,561 acres because of the restrictive nature of this management class. Consequently, even though mineral development (including minerals disposal, entry and leasing) would be allowed under Alternative A, it is virtually precluded by the overriding requirements of VRM Class I. There is some risk of localized surface disturbance from geophysical work but it would be minor and would not impact the values of the ACEC.

This alternative would allow for vegetation treatments and watershed and habitat improvements. The requirement that revegetation must be successfully established within 5 years after project completion supplements these prescriptions and assures that although there may be some temporary surface disturbance no irreparable harm would occur from these activities within the ACEC. The area is closed to woodland product harvest and this would further protect cultural resources by eliminating the chance of negative impacts from vehicles driving off designated roads for the cutting and loading of wood.

4.3.14.2.10.2. Alternative B

The size of the ACEC would be reduced to 119 acres under Alternative B and the management prescriptions for that smaller area would be more restrictive than under Alternative A. No surface disturbance would be allowed for vegetation, watershed, or wildlife treatments/improvements. The area would be closed to the disposal of mineral materials, woodland product harvest, and camping. Livestock use would be restricted to trailing only and hiking would be limited to designated trails (except for side canyons). Mineral leasing would be managed as NSO. All of these prescriptions would offer beneficial protections to the ACEC values by reducing the possibility of surface disturbing activities damaging cultural sites. The VRM II prescription under this alternative would complement these prescriptions by only allowing minimal visual intrusions.

The remainder of the existing ACEC that would not be designated under this alternative but would be managed in a manner similar to Alternative A except it would be managed as VRM II rather than VRM I. This would be less restrictive than Alternative A but since several other prescriptions limit surface disturbance the risk of adverse impacts would be minimal.

4.3.14.2.10.3. Alternative C

Alternative C would be the same as Alternative B.

4.3.14.2.10.4. Alternative D

Under Alternative D the area would not be designated as an ACEC and as with Alternative A grazing, vegetation treatments, campfires and camping within the ACEC would be allowed. As noted under Alternative A these activities would increase the risk of surface disturbance to the cultural and paleontological sites from trampling, vandalism, and exposure. In addition mineral development including minerals disposal would be allowed under Alternative D. There could be adverse impacts if surveys missed sites or cultural resources were damaged during relocation but in an area of this size the risk would be low. With this alternative the area would be managed as

VRM III rather than VRM II as it is under Alternatives A and B. This would allow for a higher level of surface disturbance than under Alternatives A and B and would increase the potential for impacts to cultural sites.

4.3.14.2.10.5. Alternative E

The impacts under Alternative E would be the same as those under Alternative B, except that there would be additional protections to the ACEC's relevant and important (cultural resources) values from the management prescriptions for non-WSA lands with wilderness characteristics. Under this alternative, prescriptions for protection of 99 acres of non-WSA lands with wilderness characteristics (83% of the proposed ACEC) would provide more protection for cultural resources by closing the ACEC to oil and gas leasing, geophysical exploration, and mineral entry; managing it under VRM Class I objectives; and closing the ACEC to off-route OHV use. The impacts of these activities on cultural resources are discussed in Section 4.3.2, Cultural Resources.

4.3.14.2.11. San Juan River ACEC

The San Juan River is proposed as an ACEC (7,590 acres) under Alternatives B, C, and E to protect the areas relevant and important wildlife, scenic, cultural values, and natural systems. The area would not be designated under Alternatives A or D but would be managed as the San Juan River SRMA. It should be noted that the area south of the river corridor is under the jurisdiction of the Navajo Nation, and these prescriptions would not apply.

4.3.14.2.11.1. Alternative A

Under Alternative A the area would not be designated as an ACEC but would be managed as an SRMA (15,100 acres). Please see Recreation (Section 4.3.10) for a description of impacts from SRMA decisions under this alternative.

Oil and gas leasing would be managed with timing and controlled surface use stipulations within the ROS-Semi Primitive Motorized class areas and NSO within the ROS-Primitive class areas (see Map 29). The remaining area would be managed with standard stipulations. The ROS-P class area corresponds with the eligible segment proposed as a Wild and Scenic River and would be protected from development within a quarter-mile of centerline. This would have beneficial impacts to the relevant and important values. Areas outside of this corridor would be managed with timing and controlled surface use and standard stipulations. The values of these areas could be negatively impacted if mineral development were to occur because of surface disturbances, visual intrusions, and disruptions to wildlife and wildlife habitat.

Grazing is allowed under this alternative and could cause direct short-term negative impacts to the riparian areas. Springs and tributary streams are especially susceptible as livestock tend to congregate/loiter in these areas. Cattle grazing in riparian areas affects nutrients, fecal bacteria, sediments, stream banks, and vegetation in the riparian ecosystem, with associated effects on water quality. Livestock grazing in riparian areas can cause non-point source water pollution. (Mosley et al. 2005) Although grazing is managed under the Standards for Rangeland Health and permittees generally follow its mandates, it is difficult to apply these standards to free-roaming cattle on a day-to-day basis. Consequently there can be occasional impacts in these areas.

Livestock grazing may also cause long-term direct impacts to cultural resources. (See Alkali Ridge ACEC Alternative A).

Under this Alternative the area would be recommended for withdrawal from mineral entry. This would directly benefit the values of the ACEC by precluding major surface disturbance. This decision would help to preserve the pristine nature of the river corridor and would enhance the recreational experience. Sedimentation and pollution from surface disturbance would be reduced thereby improving or maintaining water quality and wildlife habitat. The visual integrity of the area would be preserved.

The river corridor would be managed as VRM I, II, and III. In those areas that would be managed as VRM I or II the values of the ACEC would be protected because surface disturbance would not occur in VRM I areas and would be very limited in VRM II areas. However those areas that would be managed as VRM III would be subject to surface disturbing activities and that could adversely impact the values of the ACEC.

4.3.14.2.11.2. Alternative B

This alternative differs from Alternative A because the entire area would be managed as NSO for mineral leasing and the VRM categories would shift from a higher percentage of VRM I to a higher percentage of VRM II and III. In addition the entire area would be closed to mineral materials disposal rather than just the ROS-P areas, and livestock grazing seasons of use would be shortened by two weeks to one month depending on the allotment.

Managing the entire area as NSO for mineral leasing would have beneficial impacts to the values of the ACEC by preventing surface disturbance. Shifting from a higher percentage of VRM I to VRM II and III could have some impacts to the values of the ACEC because some level of surface disturbance may be allowed under VRM II and would certainly be allowed under VRM III. Even though the disturbances may meet the visual standards there would still be the risk of impacts to the wildlife, cultural, and natural systems values because of sedimentation, noise, and inadvertent damages to cultural sites from development.

Closing the entire area to minerals materials disposal would further protect the values of the ACEC by eliminating surface disturbance and impacts from mining activities such as and noise from construction and operations.

Shortening the seasons of use for livestock grazing would benefit the values of the ACEC by reducing forage and habitat conflicts with wildlife and reducing the risk of impacts to riparian areas as noted in Alternative A.

4.3.14.2.11.3. Alternative C

Alternative C would be the same as Alternative B.

4.3.14.2.11.4. Alternative D

The area would not be designated as an ACEC under this alternative. The area would be managed with the same prescriptions, as Alternative B except that the entire area would be managed as VRM II, livestock use would be allowed from October 1-May 31, and the area would not be recommended for mineral withdrawal.

Managing the entire area as VRM II would offer beneficial protections to the values of the ACEC by precluding most surface use and retaining the visual integrity of the landscape. Livestock seasons of use would be similar to Alternative A. Please see the discussion under that alternative for possible impacts. Since the area would not be recommended for withdrawal there would be a risk of impacts to the values of the ACEC from mineral entry but riparian corridors would be managed as NSO and so there would only be impacts if an exception was applied or the area was outside of the riparian corridor.

4.3.14.2.11.5. Alternative E

The impacts under Alternative E would be the same as those under Alternative B, except that approximately 2,155 acres (28% of the proposed ACEC) of non-WSA lands with wilderness characteristics would be managed with further resource protections in order to preserve their wilderness values. This management decision would further protect the relevant and important (wildlife, scenic, cultural values, and natural systems) values of the ACEC by closing the non-WSA wilderness area to mineral leasing and entry, managing the area under VRM Class I objectives, excluding ROWs, prohibiting new roads, and closing the area to woodland harvesting and off-route OHV travel.

4.3.14.2.12. Scenic Highway ACEC

The BLM does not make decisions establishing scenic byways. There are several Scenic Byways or Backways including: Indian Creek Corridor Scenic Byway, Bicentennial Trail of the Ancients, Monument Valley to Bluff Scenic Backway, Lockhart Basin Road Scenic Backway, Abajo Loop Road Scenic Backway, and Trail of the Ancients Scenic Backway. Management of lands that intersect the Scenic Byways and Backways could impact them depending on the activities allowed.

Generally, surface disturbing activities could have an adverse impact to the visitor experience that might be driving by on their way to a destination or visiting the Cedar Mesa area. VRM Classes I and II tend to protect the scenic values and are therefore a benefit to the Scenic Byways and Backways because they allow NSO or CSU. Protection such as NSO, closed to leasing, ROW avoidance and exclusion areas, and special designations such as WSAs, ACECs, and WSRs could all benefit the Scenic Byways by restricting or minimizing surface disturbance. Standard terms and conditions allow for moving oil and gas operations up to 200 meters and could delay activities for up to 60 days which could be used to mitigate some impacts. Impacts from dust clouds (from filming, mineral development or exploration) could be allowed in most of these areas and would adversely impact visitor experiences; however, the impact would be short term.

Alternatives B and E tend to be more restrictive regarding surface disturbing activities. Alternative E is the most restrictive protecting 538,360 acres for non-WSA lands with wilderness characteristics by closing the area to surface disturbing activities, OHV use, and recommending the area for withdrawal.

WSAs are managed the same for all alternatives and restrict activities that might adversely impact the Scenic Byways and Backways. Alternative A, allowed managed the lands as NSO and VRM Class I. This generally would restrict surface disturbing activities on the entire 71,000 acres of the Scenic Highway Corridor ACEC.

Management for the Alternatives B and E would protect the Lockhart Basin area as a Visual ACEC and would be managed as VRM Class II, which would protect the Indian Creek and Lockhart Basin Road Scenic Backways.

The Abajo Loop Scenic Backway is primarily on Forest Service land and BLM does make decisions for those lands.

4.3.14.2.12.1. Alternative A

Under Alternative A the area proposed for designation as an ACEC is 136,127, although 78,390 acres overlap with Cedar Mesa ACEC. Thus outside the Cedar Mesa ACEC, the Scenic Highway ACEC is 57,737 acres. Further, there are 9,930 acres that overlap with WSAs and are protected by the IMP (Map 81). The 9,930 acres would continue to be protected under all alternatives.

Alternative A would allow for mineral leasing with NSO, open to mineral entry with an approved plan of operation, excluded from land treatments, and managed as VRM Class I. VRM Class I, would eliminate the risk of damage from major surface disturbing activities within the 57,737 acres because of the restrictive nature of this management class. Consequently, even though mineral development (including minerals disposal, entry and leasing) would be allowed under Alternative A, it is restricted by the overriding requirements of VRM Class I. There is some risk of localized surface disturbance from geophysical work but it would be minor and would not impact the values of the ACEC.

4.3.14.2.12.2. Alternative B

Under Alternative B the area is not proposed for designation as an ACEC. However, due to the overlap of 21,280 acres with the Cedar Mesa ACEC protection of scenic values would still occur. As stated above those lands that overlap with WSAs would be protected by the IMP (Map 82). No appreciable impacts to those lands would occur.

4.3.14.2.12.3. Alternative C

Under Alternative C the area is not proposed for designation as an ACEC. However, due to the overlap of 21,280 acres with the Cedar Mesa CSRMA protection of scenic values would still occur. As stated above those lands that overlap with WSAs would be protected by the IMP. No appreciable impacts to those lands would occur.

4.3.14.2.12.4. Alternative D

Impacts would be the same as those discussed for Alternative C.

4.3.14.2.12.5. Alternative E

Impacts would be the same as Alternative B except for those non-WSA lands with wilderness characteristics which are closed to leasing, closed to OHV travel, recommended for withdrawal from mineral entry and protected as VRM Class I. These restrictive measures would reduce impacts so as to be negligible for any lands that overlap between the Scenic Highway ACEC and non-WSA lands with wilderness characteristics.

4.3.14.2.13. VALLEY OF THE GODS ACEC

Valley of the Gods is an existing special emphasis area within the Cedar Mesa ACEC. Under Alternatives B, C, and E, 22,863 acres (including the special emphasis area) would be proposed as a stand-alone ACEC to provide special management attention to protect the area's relevant and important scenic values. The area would not be designated as an ACEC under Alternative D.

4.3.14.2.13.1. Alternative A

Under Alternative A the special emphasis area would be managed as NSO for mineral leasing and it would be open to the disposal of mineral materials, mineral entry, and geophysical work. Since the area would also be managed as VRM I this would preclude most development and resultant surface disturbance except in areas that could not be seen. This would have beneficial impacts on the scenic values of the ACEC by protecting the area from visible surface disturbance. With Alternative A the area would be open to woodlands harvest but this should not impact the values of the ACEC because there are very few woodland resources in the area. In addition the area is open to livestock and OHV use limited to designated trails. These prescriptions could have minor impacts to the scenic values from localized surface disturbance but would not impact the larger landscape. A mineral entry would not be pursued under this alternative but again with a VRM I management class visible surface disturbance would be precluded.

4.3.14.2.13.2. Alternative B

Under Alternative B the size of the ACEC would be reduced to 22,863 acres, 8,524 acres less than the visual emphasis area under Alternative A. Alternative B differs from Alternative A because the area would be closed to the disposal of mineral materials, mineral leasing, and woodland product harvest and a withdrawal from mineral entry would be pursued. These prescriptions do not offer any additional protections to the scenic values because the area would be managed as VRM I and as mentioned above this would preclude surface disturbance in any visible areas of the ACEC. It may however offer additional protection to other resource values because it would preclude surface disturbance in areas that are not visible to the average traveler. One other difference from Alternative A is that campfires would not be allowed. This would offer temporary beneficial protections to the scenic values of the ACEC by preventing haze.

4.3.14.2.13.3. Alternative C

The impacts for Alternative C are the same as Alternative B.

4.3.14.2.13.4. Alternative D

Under Alternative D the area would not be designated as an ACEC. The area would be managed as open to minerals leasing, entry and disposal, with a VRM III classification. Since this area has high development potential for limestone and sand and gravel and moderate development potential for oil and gas some development could occur. This would negatively affect the relevant and important scenic values of this proposed ACEC by interrupting the panoramic view with manmade structures and creating surface disturbance. However, depending of the type and the location of development, it may be possible to screen from key observation points although it

would not be required under VRM III. The area would be available for campfire use under this alternative and this would cause temporary impacts to the scenic values from haze.

4.3.14.2.13.5. Alternative E

The impacts under Alternative E would be the same as those under Alternative B, except that approximately 20,743 acres of the ACEC (91%) would be managed with further resource protections in order to maintain those non-WSA lands with wilderness characteristics that lie within the ACEC boundaries. This management would further protect the relevant and important (scenic) values of the ACEC through closure to mineral leasing and entry, management under VRM Class I objectives, exclusion of ROWs and new roads, closure of the area to woodland harvesting and wood gathering, and closure of the area to off-route OHV travel.

4.3.14.3. Wild and Scenic Riverss – Impacts Common to All

In all action alternatives (B, C, D and E) where eligible rivers would be determined suitable, the BLM would manage these segments to protect or enhance the outstandingly remarkable values, tentative classification, and free-flowing nature of these rivers with specific protection allocations within the river corridor (1/4 mile of the high water mark on each side of the river). The extent of BLM's authority, which is limited to those portions of the segment where BLM manages the shoreline, or other lands within the corridor, and is subject to valid existing rights. Further discussion is presented in Appendix H, Special Designations including the suitability determination.

The free-flowing character of eligible river segments would be protected to the extent that modifications such as stream impoundments, channelization, and/or riprapping would not be permitted along BLM shorelines. However, depending upon the alternative, values may be at risk from potential mineral development, OHV activity, or other surface disturbing activities. Also, the protection is limited because there are no federal reserved water rights established for in-stream flow purposes because of eligibility or suitability determinations. In addition, unless BLM land is somehow involved in a proposed action, BLM has no control of potential modifications of the shoreline or other development (including development related to the perfection of water rights) on non-public lands. Because of these factors, there would be no affect on the Colorado River Compact from protective management of eligible/suitable segments. BLM's management authority only extends to public lands within the river corridor, and there are no water rights associated with suitability determinations. A suitability determination also has no effect on existing water compacts. Table 4.103 outlines the segments of rivers that would be determined suitable by alternative.

4.3.14.4. Wild and Scenic Rivers – Alternatives Impacts

Shown in Table 4.104 is a summary of management prescriptions by alternative. In all cases where the recommendation is "suitable wild" the lands are recommended for withdrawal from mineral entry.

Table 4.103. River Segments that would be Determined Suitable and Total River Miles (RM), by Alternative

River/ River Segment	Alternative A	Alternatives B and E	Alternative C	Alternative D
Colorado River				
Segment #1-Recreational	0	2.2	0	0
Segment #2-Scenic	0	5.5	5.5	0
Segment #3-Scenic	0	6.5	6.5	0
Indian Creek-Recreational	0	4.8	0	0
Fable Valley-Scenic	0	6.8	0	0
Dark Canyon-Wild	0	6.4	6.4	0
San Juan River				
Segment #1-Recreational	0	8.5	0	0
Segment #2-Recreational	0	10	0	0
Segment #3-Wild	0	13.3	0	0
Segment #4-Recreational	0	4.2	0	0
Segment #5-Wild	0	17.3	0	0
Arch Canyon-Recreational	0	6.9	0	0
Totals	**0**	**92.4**	**18.4**	**0**

Table 4.104. River Segments Evaluated and Recommended for Wild and Scenic River Designation by Alternative

Segment	Acres	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Colorado River Segment #1	352	Not evaluated NSO in floodplains and riparian corridors ROS semi primitive, non-motorized	Recommendation: Suitable, Recreational VRM III Standard oil and gas lease terms	Recommendation: Not Suitable	Recommendation: Not Suitable	Recommendation: Suitable, Recreational Same as Alternative B
Colorado River Segment #2	880	Eligible NSO in floodplains and riparian corridors ROS semi primitive, non-motorized	Recommendation: Suitable, Scenic VRM II NSO oil and gas leasing	Recommendation: Suitable, Scenic Same as Alternative B	Recommendation: Not Suitable	Recommendation: Suitable, Scenic Same as Alternative B
Colorado River Segment #3	1,040	Eligible NSO in floodplains and riparian corridors ROS semi primitive, non-motorized	Recommendation: Suitable, Scenic VRM I NSO oil and gas leasing Recommended for withdrawal from mineral entry	Recommendation: Suitable, Scenic Same as Alternative B	Recommendation: Not Suitable	Recommendation: Suitable, Scenic Same as Alternative B, except: Closed to oil and gas leasing.
Indian Creek	1,536	Not evaluated	Recommendation: Suitable, Recreational VRM III Standard oil and gas lease terms NSO in floodplains and riparian corridors	Recommendation: Not Suitable	Recommendation: Not Suitable	Recommendation: Suitable, Recreational Same as Alternative B
Dark Canyon	2,048	Not evaluated	Recommendation: Suitable, Wild VRM I Closed to oil and gas leasing Recommended for withdrawal from mineral entry	Recommendation: Suitable, Wild Same as Alternative B	Recommendation: Not Suitable	Recommendation: Suitable, Wild Same as Alternative B
Fable Valley	2,176	Not evaluated	Recommendation: Suitable, Scenic VRM II NSO oil and gas leasing	Recommendation: Not Suitable	Recommendation: Not Suitable	Recommendation: Suitable, Scenic Same as Alternative B, except: Closed to oil and gas leasing

Table 4.104. River Segments Evaluated and Recommended for Wild and Scenic River Designation by Alternative

Segment	Acres	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
San Juan River Segment #1	1,360	Not evaluated	Recommendation: Suitable, Recreational VRM III Standard oil and gas lease terms NSO in floodplains and riparian corridors	Recommendation: Not Suitable	Recommendation: Not Suitable	Recommendation: Suitable, Recreational Same as Alternative B
San Juan River Segment #2	1,600	Eligible. VRM I Withdrawn from mineral entry Surface disturbance from mining activities on existing claims would be limited to the extent possible without curtailing valid existing rights Area above the rim in the vicinity of the Bluff airport lease would be available for mineral material disposal. In areas closed to OHV a plan of operations is required for any mining-related activity other than casual use	Recommendation: Suitable, Recreational VRM III Standard oil and gas lease terms NSO in floodplains and riparian corridors	Recommendation: Not Suitable	Recommendation: Not Suitable	Recommendation: Suitable, Recreational Same as Alternative B
San Juan River Segment #3	2,128	Same as San Juan River Segment #2	Recommendation: Suitable, Wild VRM I NSO oil and gas leasing Recommended for withdrawal from mineral entry	Recommendation: Not Suitable	Recommendation: Not Suitable	Recommendation: Suitable, Wild Same as Alternative B, except: Closed to oil and gas leasing

Table 4.104. River Segments Evaluated and Recommended for Wild and Scenic River Designation by Alternative

Segment	Acres	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
San Juan River Segment #4	672	Same as San Juan River Segment #2	Recommendation: Suitable, Recreational VRM III Standard oil and gas lease terms NSO in floodplains and riparian corridors	Recommendation: Not Suitable	Recommendation: Not Suitable	Recommendation: Suitable, Recreational Same as Alternative B
San Juan River Segment #5	2,768	Same as San Juan River Segment #2	Recommendation: Suitable, Wild VRM I NSO oil and gas leasing Recommended for withdrawal from mineral entry	Recommendation: Not Suitable	Recommendation: Not Suitable	Recommendation: Suitable, Wild Same as Alternative B
Arch Canyon	2,208	Not evaluated	Recommendation: Suitable, Recreational VRM III Standard oil and gas lease terms NSO in floodplains and riparian corridors	Recommendation: Not Suitable	Recommendation: Not Suitable	Recommendation: Suitable, Recreational Same as Alternative B

4.3.14.4.1. ALTERNATIVE A

Under Alternative A, a suitability determination would not be made, but those river segments that were determined eligible in the 1991 San Juan RMP would remain eligible with this alternative. Where BLM manages the shoreline or other lands within the river corridors they would be managed to maintain the free-flowing nature, outstandingly remarkable values, and tentative classification. The segments determined to be eligible were Colorado River Segments #2 and #3 and San Juan River Segments #2 (portion), #3, #4, and #5. Because the eligible river corridors would be subject to the existing land use plan as far as resource allocations are concerned, they may be subject to case-by-case actions. These would be addressed through the NEPA process with mitigation applied. If any proposed actions would affect the eligibility or suitability of the river segment, it is BLM policy to deny the action until suitability can be considered. Although a suitability determination would not be made in Alternative A (No Action), all eligible rivers would continue to be managed to protect the outstandingly remarkable values (ORVs) in a case-by-case manner. The protective measures identified for the Colorado and San Juan River segments would continue.

The San Juan River (Segments #1 and #2), Arch Canyon, Fable Valley, Indian Creek would be managed as open to minerals leasing under standard stipulations or timing and controlled surface use. The San Juan River (Segments #3, #4, and #5), Fable Valley, and Dark Canyon would be managed as NSO or closed to mineral leasing. All segments except for the Colorado River and Dark Canyon would be open to mineral entry and the Colorado, Indian Creek, and San Juan River Segments (#1 and #2) are open to minerals material disposals. Generally, riparian corridors would be managed as NSO under BLM's riparian policy and therefore, regardless of the leasing category these areas would be protected from development. However there is an exception to allow for development in riparian areas if there are no other practical alternatives. In addition, on smaller rivers, in areas where the 0.25-mile WSR corridor extends beyond the riparian corridor there would not be NSO protection. In these instances, where mineral leasing (with standard stipulations or timing and controlled surface use), entry, or disposal would be allowed the outstandingly remarkable values of these rivers may be at risk from surface disturbance, habitat fragmentation, loss of visual integrity, and noise from construction and operation of mineral development infrastructure.

With this alternative, Dark Canyon and the San Juan River would be managed as SRMAs. This would enhance this segment's recreational values, and would not affect the other outstandingly remarkable values. It would not affect the free-flowing nature of the river, and would be in keeping with the tentative classification of scenic, recreational or wild.

Arch Canyon, Colorado River (Segment #2), and the San Juan River (Segments #1 and #2) are in an open OHV category. Temporary impacts to outstandingly remarkable values could occur from surface disturbance and noise. All the remaining eligible river segments would be in a limited or closed OHV category. River corridors would largely be protected from disturbance related to OHV activity.

4.3.14.4.2. ALTERNATIVE B

With Alternative B, 92.4 river miles involving the following eligible river segments – Colorado River (Segments #1, #2, and #3), Arch Canyon, Fable Valley, Indian Creek, Dark Canyon, and the San Juan River (Segments #1 through #5) would be determined suitable for designation into the National Wild and Scenic River System (see Table 4.104). Overall, because of the increased acreage identified and managed as suitable, and because other resource allocations such as OHV use limited to designated routes, and closure to mineral entry in all wild segments, this alternative would provide greater protection to outstandingly remarkable values than would the No Action Alternative.

The San Juan River (Segments #1 and #2), Colorado River (Segment #1), Indian Creek and Arch Canyon would be managed as open to minerals leasing under standard stipulations or timing and controlled surface use. The San Juan River (Segments #3, #4, and #5), Fable Valley, and Dark Canyon would be managed as NSO or closed to mineral leasing. All segments would be open to mineral materials disposal and the Colorado River (Segments #1 and #2), the San Juan (Segments #1, #2, and #4), Arch Canyon, and Fable Valley would be open to mineral entry. The risks to the ORVs in these segments are as noted above in Alternative A.

With Alternative B the Colorado River (Segment #3) would be managed as VRM I and Colorado River (Segment #2) and Fable Valley would be managed as VRM II. These segments would have direct beneficial protection to the scenic values and indirect benefits to other resource values because the VRM Management Class would limit surface disturbance. Unless other management prescriptions would limit surface disturbance in these areas, the remaining segments would be at risk for adverse impacts to the ORVs from surface disturbing activities.

With this alternative, the San Juan River and Dark Canyon would be managed as SRMAs. This would enhance these segments' recreational values, and would not affect the other outstandingly remarkable values. It would not affect the free-flowing nature of the river, and would be in keeping with the tentative classification of scenic.

All eligible river segments would be in a limited or closed OHV category, with most of the segments limited. River corridors would largely be protected from disturbance related to OHV activity. No loss of outstandingly remarkable values from OHV use would be anticipated during the life of the plan.

4.3.14.4.3. ALTERNATIVE C

With Alternative C, 18.4 river miles involving the eligible Colorado River Segments #2 and #3 and Dark Canyon Segment would be determined suitable for designation into the National Wild and Scenic River System (see Table 4.104). This alternative would be more protective to the ORVs than Alternatives A and D but less so than Alternatives B and E.

The San Juan River (Segments #1, #2 and #4), Colorado River (Segment #1), Indian Creek and Arch Canyon would be managed as open to minerals leasing under standard stipulations or timing and controlled surface use. The San Juan Segments #3 and #5, Fable, and Dark Canyon Rivers would be managed as NSO or closed to mineral leasing. All segments would be open to mineral materials disposal. With Alternative C, mineral withdrawals would be pursued on the San Juan Segments #3 and #5 and Dark Canyon to restrict mineral-related disturbance and would therefore permanently protect the outstandingly remarkable values and tentative classification of

the river segments from mineral entry. The risks to the ORVs in the segments open to minerals leasing under Standard Stipulations and timing and controlled surface use are as noted above in Alternative A, paragraph two.

With Alternative C, Colorado River (Segment #1) and Dark Canyon would be managed as VRM I and Colorado River (Segment #2) and Fable Valley would be managed as VRM II. These segments would have beneficial direct protection to scenic and other resource values because the classifications limit surface disturbance. Unless there would be other management prescriptions that would limit surface disturbance in these areas the remaining segments would be at risk for adverse impacts to the ORVs.

With this alternative, Dark Canyon and the San Juan River would be managed as SRMAs. This would enhance these segments' recreational values, and would not affect the other outstandingly remarkable values. It would not affect the free-flowing nature of the river, and would be in keeping with the tentative classification of scenic.

All eligible river segments would be in a limited or closed OHV category, with most of the segments limited. River corridors would largely be protected from disturbance related to OHV activity. No loss of outstandingly remarkable values from OHV use would be anticipated during the life of the plan.

4.3.14.4.4. ALTERNATIVE D

No segments would be recommended for designation under this alternative. This alternative would offer the least protections to the WSRs in comparison to Alternatives A, B, C and E.

The San Juan River (Segments #1, #2, and #4), Colorado River (Segments #1, #2, and #3), Indian Creek and Arch Canyon would be managed as open to minerals leasing under standard stipulations or timing and controlled surface use. The San Juan River (Segments #3, #5), Fable Valley and Dark Canyon Rivers would be managed as NSO or closed to mineral leasing. All segments would be open to mineral materials disposal. No mineral withdrawals would be pursued with this alternative.

With Alternative C, Fable Valley and Dark Canyon would be managed as VRM I and the San Juan would be managed as VRM II. These segments would provide direct protection to scenic and other resource values because these classifications limit most surface disturbing activities. The remaining segments would be managed as VRM III. Unless there would be other management prescriptions that would limit surface disturbance in these areas the remaining segments would be at risk for adverse impacts to the ORVs from surface disturbance, habitat fragmentation, loss of visual integrity, and noise from construction and operation of mineral development infrastructure.

With this alternative, Dark Canyon and the San Juan River would be managed as SRMAs. This would enhance this segment's recreational values, and would not affect the other outstandingly remarkable values. It would not affect the free-flowing nature of the river, and would be in keeping with the tentative classification of scenic.

All eligible river segments would be in a limited or closed OHV category, with most of the segments limited. River corridors would largely be protected from disturbance related to OHV activity. No loss of outstandingly remarkable values from OHV use would be anticipated during the life of the plan.

4.3.14.4.5. ALTERNATIVE E

The impacts under Alternative E would be the same as those under Alternative B, except that Colorado River Segment #3, San Juan River Segment #3, and Fable Valley would be closed to oil and gas leasing, and Colorado River Segment #3 and San Juan Segment #3 would be managed lands to maintain the wilderness characteristics of non-WSA land with wilderness characteristics where they exist along those segments. Because of these additional management prescriptions, this alternative would offer the greatest protection to WSRs in comparison to Alternatives A, B, C and D.

4.3.14.5. IMPACTS TO WILDERNESS AND WILDERNESS STUDY AREAS (WSAS)

WSAs are managed under the Interim Management Policy (IMP), which directs the BLM to manage the area so as not to impair their suitability for preservation as wilderness. This applies to all uses and activities except those specifically exempted from this standard by FLPMA (such as grandfathered uses) (BLM 1995). Because of this there would be no impacts to WSAs from implementation of this plan except in areas with existing valid rights. In those areas the impacts would be similar to those described in Section 4.3.8, Non-WSA Lands with Wilderness Characteristics. Table 4.105 shows the acreages of WSAs in the Monticello FO.

Table 4.105. Acreages of WSAs in the Monticello FO

WSA	Acreage
Bridger Jack Mesa	6,301
Butler Wash	22,043
Cheese Box Canyon	14,826
Cross Canyon	945
Dark Canyon ISA Complex	67,822
Fish Creek Canyon	46,089
Grand Gulch ISA Complex	105,181
Indian Creek	6,884
Mancos Mesa	50,876
Mule Canyon	5,977
Road Canyon	52,372
South Needles	159
Squaw and Papoose Canyon	6,552
Total	**386,027**

All WSAs would be managed as VRM Class I, which prohibits (except for valid existing rights) surface disturbing activities. This would enhance and protect the wilderness characteristics of these lands. The WSAs would limit OHV travel and to designated routes would enhance and protect the wilderness characteristics of these lands.

4.3.14.6. SUMMARY OF IMPACTS

Alternatives B and E would manage the largest area (521,141 acres) of the Monticello PA as ACECs, followed by Alternative A (488,616), and Alternative C (76,764 acres), respectively. No ACECs would be designated as ACECs under Alternative D. Although Alternative A would designate a comparable number of areas as ACECs, its management prescriptions would generally not be as protective of the ACECs' relevant and important values as Alternatives B, C, and E. Therefore, Alternative E, which has the most acres designated and the most protective management prescriptions, would be the most beneficial to ACECs relevant and important values, followed by Alternatives B, C, and A, respectively. Alternative D would not have any beneficial impacts to ACECs' values. Alternatives B and E best prevents irreparable damage to the relevant and important values, resources, natural systems and natural hazards. Alternative D does the least to prevent irreparable damage to the relevant and important values, resources, natural systems or natural hazards. However, to some degree because WSAs overlap many of the ACECs in Alternative A, protection is generally in place (Map 81).

In all action alternatives (B, C, D and E) where eligible rivers would be determined suitable, the BLM would manage these segments to protect or enhance the outstandingly remarkable values, tentative classification, and free-flowing nature of these rivers with specific protection allocations within the river corridor (1/4 mile of the high water mark on each side of the river) to the extent of its authority, which is limited to those portions of the segment where BLM manages the shoreline or other lands within the corridor, and is subject to valid existing rights. Under Alternative A, a suitability determination would not be made, but those river segments that were determined eligible in the 1991 San Juan RMP would remain eligible with this alternative. Where BLM manages the shoreline or other lands within the river corridors they would be managed to maintain the free-flowing nature, outstandingly remarkable values, and tentative classification. Under Alternatives B and E, 92.4 miles of river would be recommended as suitable; with the greatest beneficial impacts to WSRs. Management prescriptions under Alternative E would be slightly more protective than those under Alternative B. Alternative C would recommend 18.4 miles of river as suitable. Alternative D would not find any segments suitable.

The management of WSAs would be the same under all alternatives. WSAs would be managed under the Interim Management Plan (IMP), which directs the BLM to manage the area so as not to impair their suitability for preservation as wilderness.

4.3.14.7. MITIGATION MEASURES

No mitigation measures would be required under any of the alternatives.

4.3.14.8. UNAVOIDABLE ADVERSE IMPACTS

Unavoidable adverse impacts would occur from mineral development and OHV activity where they are permitted under any alternative.

4.3.14.9. SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

Any loss of ACECs' relevant and important values, WSRs' outstanding remarkable values, or WSA's wilderness characteristics would persist throughout the life of the RMP, and would constitute a long-term loss of these values as a result of short-term uses.

4.3.14.10. IRREVERSIBLE AND IRRETRIEVABLE IMPACTS

Any loss of ACECs' relevant and important values, WSRs' outstanding remarkable values, or WSAs' wilderness characteristics due to mineral development or OHV activity would be irretrievable until the impact area was fully reclaimed.

4.3.15. SPECIAL STATUS SPECIES

This section discusses impacts to special status species from management decisions of other resources and resource uses described in Chapter 2. Existing conditions concerning special status species are described in Chapter 3.

Because of the large number of special status species that may occur in the Monticello PA, including Threatened, Endangered, and Sensitive species, it was determined that, in some cases, the most effective way to disclose impacts at the programmatic level would be to analyze the impacts to the habitat cover type used by those species. Accordingly, for the purposes of analysis, the special status species described in Chapter 3, Section 3.15 are grouped by habitat type, as shown in Table 4.106 below. Impacts to federally listed species are also analyzed by habitat type. Quantitative information is provided for the following species: Mexican spotted owl (MSO), Gunnison sage-grouse, Southwestern willow flycatcher (SWFL), bald eagle, and Colorado River fish (humpback chub, Colorado pikeminnow, razorback sucker, and bonytail). The habitats associated with these species are representative of the habitats of the other special status species (see Table 4.106). All habitat impacts analyzed in this section are approximations based on assumptions regarding the potential locations of facilities, vegetation treatments, grazing, and other impacts from management decisions. Representations of the available habitat (and critical habitat where designated) for these representative species within the Monticello PA can be found in Map 86 (Colorado fish species and MSO), Map 85 (bald eagle), and Map 84 (SWFL).

In all of the following subsections, management decisions discussed for each of the proposed alternatives are in addition to those discussed under Management Common to All Alternatives in Table 2.1 of Chapter 2. The Proposed Action and alternatives have the potential for adverse impacts on special status species through decisions for resource management such as travel, recreational use of the land, vegetation treatments, and oil or gas development.

For most resource decisions for which there is limited variation in impacts by habitat type, impacts are discussed by alternative in order to give an overall description of the impacts resulting from the management action.

Air quality and paleontology will not be analyzed in detail in this section because protecting air quality, and allowing recreational collection of fossils and scientific study of fossils would neither inhibit nor enhance the protection of federally listed wildlife and plant species under the Endangered Species Act. The impacts of the above resource decisions to special status species would be negligible.

Table 4.106. Grouping of Special Status Species by Habitat Type

Habitat	BLM Special Status Species	Federally Listed Species	Designated Critical Habitat
Desert Shrub	Wildlife: Gunnison's prairie dog, desert night lizard, ferruginous hawk, short-eared owl, Brewer's sparrow, loggerhead shrike, pinyon jay, sage sparrow	Wildlife: None	Wildlife: None
	Plants: Cronquist milkvetch, Cutler milkweed, Copper Canyon milkvetch, Skull Valley spring-parsley, Hole-in-the-Rock prairie clover, spineless hedgehog cactus, Cataract Canyon gilia, Paradox breadroot, Howell scorpionweed, Bluff phacelia, Mancos shadscale, Jane's globemallow	Plants: None	Plants: None
Sagebrush and Perennial Grassland	Wildlife: Brewer's sparrow, loggerhead shrike, pinyon jay, sage sparrow, Virginia's warbler, Gunnison's prairie dog, ferruginous hawk, short-eared owl, desert night lizard, Gunnison sage-grouse, Mogollon vole, kit fox, silky pocket mouse, burrowing owl, Swainson's hawk, prairie falcon	Wildlife: black-footed ferret (E; Extirpated)	Black-footed ferret: No critical habitat rules have been published for the black-footed ferret.
	Plants: Chatterley's onion, Copper Canyon milkvetch, spineless hedgehog cactus, redroot buckwheat	Plants: None	Plants: None
Pinyon-Juniper Woodland	Wildlife: gray vireo, pinyon jay, Virginia's warbler	Wildlife: None	Wildlife: None
	Plants: Chatterley's onion, spineless hedgehog cactus, redroot buckwheat, Paradox breadroot, Howell scorpionweed	Plants: None	Plants: None
Conifer and Mountain Shrub	Wildlife: Yavapai mountain snail, Gunnison's prairie dog, Lewis's woodpecker, northern goshawk, three-toed woodpecker, broad-tailed hummingbird, black-throated gray warbler	Wildlife: None	Wildlife: None
	Plants: spineless hedgehog cactus	Plants: None	Plants: None

Table 4.106. Grouping of Special Status Species by Habitat Type

Habitat	BLM Special Status Species	Federally Listed Species	Designated Critical Habitat
Riparian and Wetland	Wildlife: American white pelican, bobolink, peregrine falcon, Arizona toad, smooth greensnake, bluehead sucker, roundtail chub, flannelmouth sucker, western yellow-billed cuckoo (C)	Wildlife: Bald eagle (T), SWFL (E), bonytail (E), Colorado pikeminnow (E), humpback chub (E), razorback sucker (E)	Colorado River fishes: Designated critical habitat includes portions of the Colorado River and the Green River downstream from the Yampa River, along the San Juan River from Shiprock, NM to the inflow of Lake Powell; and the 100-year floodplain.
	Plants: alcove bog orchid	Plants: None	Plants: None
Caves and Rock Crevices (Seeps)	Wildlife: Allen's big-eared bat, big free-tailed bat, fringed myotis, spotted bat, Townsend's big-eared bat	Wildlife: California condor (E; Experimental)	California condor: Potential nesting habitat occurs within the Monticello PA; however, any individuals in Utah are part of an experimental, non-essential population.
	Plants: pinnate spring-parsley, Nevada willowherb, alcove rock-daisy, kachina daisy	Plants: Navajo sedge (T)	Navajo sedge: Potential population in San Juan County occurs on Navajo land.
Rocky Slopes and Canyons	Wildlife: common chuckwalla	Wildlife: MSO (T)	MSO: Designated critical habitat consists of 8.65 million acres in AZ, CO, NM, and UT. In UT, critical habitat has been designated in portions of San Juan County within the Monticello PA.
	Plants: Nevada willowherb, Canyonlands lomatium, western hophornbeam	Plants: None	Plants: None

(C) = candidate for federal listing
(T) = federally listed as threatened
(E) = federally listed as endangered

The analysis of other impacts to special status species used the following assumptions:

- Special status species include BLM-listed special status species and federally listed species.
- Acres of SWFL habitat used in this document also include potential habitat for the yellow-billed cuckoo. For both of these species, the total acres of riparian vegetation in the Monticello PA were used to calculate acres of habitat.
- The bald eagle habitat acres used in this document include a 1-mile-wide buffer on all streams and rivers in the Monticello PA, all BLM mule deer winter range and a .0.5-mile buffer on Highways SR-191, SR-95, SR-275, and SR-211 (personal communication between Deb Reber and Susan Martin, SWCA, and Tammy Wallace, BLM, September 22, 2006).
- Acres of habitat for the MSO and the 4 endangered Colorado River fish species used in this document are taken from the GIS habitat layer for these species provided by the USFWS and BLM. Acres of Gunnison sage-grouse habitat used in the following analyses were taken from the DWR habitat GIS layer.
- All references to the Colorado River fishes are specifically referring to the Federally endangered bonytail (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), and razorback sucker (*Xyrauchen texanus*). These 4 species are managed similarly, and impacts can typically be analyzed as a group.
- The proposed alternatives have the potential for both adverse and beneficial impacts on special status species through decisions including travel management, recreational use of the land, vegetation treatments, and oil or gas development. Wherever possible, this document quantifies the amount and types of habitats that would be directly disturbed or reclaimed due to such decisions. However, it is often difficult to quantify the loss or improvement of quality or condition of a habitat. Subtle increases or decreases in weeds, shrubs, forbs, water availability, undisturbed areas, and birthing or wintering grounds can greatly affect the distribution, health, and survival of a diversity of sensitive plant and animal species. The degree to which these impacts could occur varies by alternative; alternatives that increase the amount of surface disturbance within special status species' habitats generally have greater potential adverse impacts on these species. Attempts are made to address potential impacts for resource management decisions, but the discussions are often qualitative due to the difficulty in measuring such changes.
- Additional assumptions for this chapter include the following: (1) implementation of all the alternatives would be in accordance with existing laws, regulations, and standard management guidelines; (2) decisions associated with emergency or public safety would be performed at the discretion of the Authorized Officer; (3) though impacts resulting from implementation of any of the alternatives may extend beyond the Monticello PA boundaries, they will be analyzed to their logical conclusion even if they extend these boundaries (an example of this would be analyzing impacts to aquatic species, including downstream impacts beyond the Monticello PA boundaries); and (4) public land users will comply with the decisions and allocations contained in the alternatives.

4.3.15.1. Impacts Common to All Alternatives

Under all alternatives, the BLM would comply with all recovery plans and conservation agreements for special status species as detailed in the Chapter 2 Summary Table of Alternatives (Table 2.1). In addition, the Conservation Measures from LUP-level Consultations for T&E

Species of Utah would be adhered to where applicable (USFWS 2006). Further, the BLM is required to use methods and procedures necessary to improve the condition of special status species and their habitats to the degree such that their special status recognition is no longer warranted (BLM 2001c). There would be no specific individual protections provided for the majority of special status species listed in Table 4.106, including the black-footed ferret, which has no special protective measures in place because there are no known populations in the Monticello PA. Many of these species, however, would be indirectly protected by the restrictions and buffers in place for Gunnison sage-grouse, MSO, SWFL, yellow-billed cuckoo, bald eagle, Navajo sedge, California condor, the endangered Colorado River fishes, and migratory birds (discussed in Section 4.3.19, Wildlife and Fisheries). These special status species protections are discussed in the following sections.

Under all alternatives, the Reasonable and Prudent Measures and Terms and Conditions identified in consultation with the USFWS for the Utah Land Use Plan Amendment for Fire and Fuels Management would be implemented in fire-related actions (see Appendix B, Fire Management). Maintenance of existing healthy ecosystems and protection of threatened, endangered, and special status species are two of the criteria for establishing fire management priorities. Implementation of these criteria would have beneficial impacts on special status species habitat in the Monticello PA by preserving native plant species and assuring that special status species would not be directly impacted by fire.

Fuels management actions would occur under all of the alternatives. Wildland fire use may be authorized in special status species habitats, and this could adversely impact special status species by burning or cutting of vegetative cover, reduction of the overall quantity or quality of habitat or forage, or mortality of individuals due to fire, trampling, or crushing. Indirect impacts to special status species and their habitats could include increased exposure to predators due to reduced vegetation cover, increased soil erosion, or other impacts to habitat quality. In the long-term, after appropriate rehabilitation wildland fire would benefit special status species habitat in an area by removing competition from weedy natives and invasive species. Once the competition was removed, a diverse native community would have the potential to establish itself in the area (Monsen 2004), which would mean more available forage and cover for special status wildlife species and available habitat for special status plant species (Stevens 2004).

Wildland fire use would not be authorized in the following areas unless reasonable Resource Protection Measures were in place: 1) areas that are known to be highly susceptible to post-fire cheatgrass or other weed invasion, 2) important terrestrial and aquatic habitats, and 3) non-fire-adapted vegetation communities (see Chapter 2 Table 2.1, Summary Table of Alternatives). These measures would also have beneficial impacts on special status species habitat by reducing the spread of weeds and preserving native plant species.

Fuels management actions include surface-disturbing treatments on 5,000–10,000 acres annually. Over the life of the plan, this would result in 75,000–150,000 acres of land being subject to fuels management. Impacts would be analyzed with site-specific NEPA once it is determined where individual treatments would occur. These actions include mechanical and manual treatments, prescribed fire, chemical or biological vegetation control, and aerial/ground seeding.

The LUP Amendment for Fire and Fuels Management indicates that the majority of treatments would occur in pinyon-juniper woodland and sagebrush habitats, and would impact the species dependent upon those habitats (Table 4.106). In the short-term, vegetation treatments could

result in the trampling or removal of special status plant species and the disturbance of special status wildlife species by human presence. In the long-term, however, vegetation treatments would benefit special status species habitat in an area by removing competition from weedy natives and invasive species. Once the competition was removed, a diverse native community would have the potential to establish itself in the area (Monsen 2004), which would mean more available forage and cover for special status wildlife species and available habitat for special status plant species (Stevens 2004).

Under all alternatives, abandoned mine lands (AMLs) would be prioritized for area reclamation and mitigation. Site-specific NEPA analysis would be completed on all potential AML projects, thereby preventing adverse impacts to special status species.

Lands and realty decisions that could potentially impact special status species include access, easements, leases and permits, utility/transportation systems, exchanges, disposals, and withdrawals. Under all alternatives, WSAs would be exclusion areas for ROWs. Withdrawals and excluded areas would preserve and protect special status environmental resources and areas. Similarly, the acquisition and retention of any special status species habitat, quality riparian areas, and key productive ecosystems would have beneficial impacts on special status species.

All areas not identified as avoidance or exclusion would be available for ROWs and could be subject to multiple-use terms on a case-by-case basis (BLM 2004a). The use of ROWs for utility and communication infrastructure could have direct, long-term adverse impacts on special status plant and wildlife species habitat due to surface disturbance for utility lines, communication sites, solar and wind energy sites, pipeline installation, trampling by workers and vehicles during construction activities, as well as impacts to special status bird or bat species and migration routes from wind turbines and construction of maintenance access roads. Additionally, noise and human presence associated with infrastructure installation could have adverse impacts on special status wildlife species in the Monticello PA. The installation of power poles would increase raptor predation on Gunnison's prairie dog and Gunnison sage-grouse by providing hunting perches. Although this would be an adverse impact on these prey species, it would also provide a beneficial impact on raptor species in the planning area (see Section 4.3.19, Wildlife, for details).

Under all alternatives, applications for filming permits would have to meet the criteria that they do not impact special status species or their habitat. Accordingly, implementation of these minimum-impact criteria would prevent adverse impacts to special status species from filming.

Grazing would continue to be unavailable on 134,520 acres in the areas identified in the Summary Table of Alternatives (Table 2.1), and Table 4.146 in Section 4.3.17, Vegetation, shows the acres unavailable for livestock grazing by vegetation type.

Livestock grazing allotments occupy approximately 99% of all lands within the Monticello PA. Detrimental impacts from grazing could include loss of biodiversity, lowering of population densities, disruption of some ecosystem functions, changes to community organization, and changes to the physical characteristics of both terrestrial and aquatic habitats (Chaneton and Lavado 1996; Fleischner 1994; Olff and Ritchie 1998). Within grazing allotments, special status species may be impacted by trampling, reduced forage or cover vegetation, reduced quality of riparian and wetland habitats, and other impacts to habitat quality or quantity.

Under all alternatives, livestock grazing would be managed according to the Guidelines for Grazing Management to achieve the Standards for Rangeland Health (BLM 1997). By adhering

to these standards, the impacts from livestock grazing on special status species are expected to be minimal. Grazing use would be unavailable on approximately 137,440 acres in the Monticello PA whereby adverse impacts to special status species by livestock would be reduced or eliminated. These closures could eliminate potential direct impacts from livestock grazing on special status species and associated habitat. Potential indirect, beneficial impacts could include increased habitat for special status species.

Under all alternatives, grazing would be modified when monitoring indicates that objectives are not being met or resources are being adversely impacted. This would mitigate the adverse impacts of surface disturbance on riparian habitat associated with livestock grazing in the Monticello PA.

Impacts to special status species from recreation include direct impacts from use of mechanized and non-mechanized vehicles, ground disturbance from trail development, trampling of individuals, habitat fragmentation, and increased access to secluded fragile habitats and species. Increased visitor use of recreational areas may also adversely impact special status species through increased noise and human presence. Indirect adverse impacts to riparian areas from recreation could include alternation of plant community structure and species composition, reduction in the relative abundance of species, and changes to stream channel morphology, all of which may contribute to habitat degradation. Management of recreational areas that includes measures to reduce surface disturbance and resource degradation would also reduce these adverse impacts on special status species.

The adverse impacts of recreation decisions would be partially mitigated by the required reclamation of disturbed areas to meet the Utah Standards for Public Land Health and Guidelines for Recreation Management (Appendix E) and protective measures outlined for federally listed species in Appendix Q. OHV use and dispersed camping are emphasized here due to the higher use levels of these activities in the Monticello PA, and the potential for direct adverse impacts to sensitive species and their habitats from these activities throughout the Monticello PA.

Under all alternatives, riparian areas would be managed as NSO for oil and gas leasing. They would, however, be open to mineral entry and disposal of mineral materials, but not in active floodplains or within 100 meters of riparian areas. Woodland product collection would be prohibited. These restrictions would decrease the intensity the impacts of surface disturbance on riparian habitat in the Monticello PA.

Livestock grazing would be permitted, with potentially adverse, indirect impacts from grazing in riparian habitat. A reduction in surface disturbance enables native vegetation to establish faster in riparian habitat.

Vegetation treatments including the use of mechanized or motorized equipment would be allowed in riparian areas. These treatments would have both beneficial and adverse impacts on vegetation in riparian habitat. Long-term beneficial impacts would include reduction of weed populations and creation of favorable conditions for establishment of native species. This, in turn, would improve riparian habitat for special status wildlife species. Short-term adverse impacts would include crushing and inadvertent removal of special status plant species during the treatment process. There could also be temporary adverse impacts on special status fish species habitat due to increased overland flow associated with soil compaction on soils adjacent to riparian areas (see Section 4.3.6, Livestock Grazing).

The SWFL Recovery Plan would be implemented in all suitable habitat areas. This would have beneficial impacts on any species within SWFL habitat because of the goals of the recovery plans, which are, 1) increase and improve occupied, suitable, and potential breeding habitat; 2) increase meta-population stability; 3) improve demographic parameters; 4) minimize threats to wintering and migration habitat; 5) survey and monitor; 6) conduct research; 7) provide public education and outreach; 8) assure implementation of laws, policies, and agreements that benefit the flycatcher; 9) track recovery progress (USFWS 2002e).

The Utah's Standards for Rangeland Health and Guidelines for Grazing (Appendix G) and Recreation Guidelines (Appendix E) would be followed to achieve proper riparian functioning. Overall, the BLM would avoid degradation of habitats that could result in the loss of riparian vegetation, which would have beneficial impacts to special status species by preventing riparian habitat alteration.

Under all alternatives, soils and watershed decisions would comply with Utah's Standards for Rangeland Health and Guidelines for Grazing (Appendix G) and Recreation (Appendix E). In addition, all floodplains and riparian/wetlands would be managed in accordance with Executive Orders 11988 and 11990, sections 303 and 404 of the Clean Water Act, the Colorado River Salinity Control Act, and the Endangered Species Act, which would protect the quality of stream water and federally listed species habitat. Also, uses in the Monticello PA would be managed to minimize and mitigate damage to soils, and activities located in areas with special status soils would be subject to site-specific NEPA. These restrictions would decrease the number of acres in the Monticello PA subject to the adverse impacts on special status species and habitat associated with surface-disturbing activities. This includes the indirect impacts of potential stream water contamination associated with increased sedimentation from runoff associated with disturbed areas (see Soils Sections, Chapters 3 and 4).

Vegetation treatments would be allowed in riparian areas to reduce tamarisk, where appropriate. These treatments, in conjunction with native species seeding and planting, would help restore healthy functioning to watersheds.

Special Designation areas, such as ACECs, WSAs, and WSRs would generally reduce long-term impacts to special status species that occur within their boundaries. Impacts to special status species vary among alternatives based on the acreage of these specially designated areas, and the oil and gas leasing stipulations assigned within them. ACECs are designated to protect identified relevant and important values such as cultural resources, scenic qualities, and natural systems. ACEC designation would reduce impacts to special status species and habitats by limiting human activity and surface disturbances, preserving habitat, and limiting noise.

WSAs are established in order to provide for the protection of wilderness character and for the use and enjoyment of visitors in a manner that leaves it unimpaired for future use. By definition, no surface disturbance, permanent new development, or ROW would be allowed in the WSAs; the lands would be closed to oil, gas, and mineral leasing. Under all alternatives, where ACECs overlap WSAs (see Maps 81–83), WSA management would take precedence. This land would be managed according to the IMP.

Under all alternatives, any river segments found suitable for designation as a WSR would be recommended to Congress. Once identified—but prior to their official designation by Congress—these river segments would be managed to protect their free-flowing condition and

outstandingly remarkable values. These qualities would be maintained within 1/4 mile on each side of the river. The BLM would not seek water rights in these segments, and OHV travel would be limited to designated routes.

A comparative analysis of the management (specifically relating to oil and gas leasing stipulations) of the ACECs under each alternative would be the best representative of potential impacts of Special Designation decisions on special status species. Impacts of surface-disturbing oil and gas activities on special status species and their habitats include direct and indirect human-caused disturbance (i.e., vehicular traffic, trampling of vegetation, noise, and human presence) of individual species and their habitats. Further discussion of the qualitative impacts of surface disturbing oil and gas activities on native vegetation (special status species habitat) can be found in Section 4.3.17, Vegetation.

Under all alternatives for travel management, any new trail designations would consider special status species habitat, which could reduce the adverse impacts of surface and noise disturbance on special status plant and animal species. In addition, National Scenic Byways and Backways would be designated in the Monticello PA. These roads already exist, so there is not likely to be an appreciable impact on special status plant and animal species and their habitat resulting from these designations.

A number of trails would be managed for non-mechanized travel under all alternatives (see Chapter 2 Table 2.1, Summary Table of Alternatives, for the list). Because these trails are already established and in use, there is not likely to be a noticeable increase in disturbances of special status species and habitat resulting from trail maintenance. There would also be trails and/or areas open to OHV use under all alternatives. OHV use can physically damage the vegetation in special status species habitat and cause noise disturbance, which could have direct, adverse impacts on special status species, especially birds and big game, in the Monticello PA (Reijnen and Foppen1995, Gelbard and Belnap 2003). The surface disturbance associated with OHV use can have direct and indirect adverse impacts on individual plants and animals as well as their habitat.

Under all alternatives, vegetation-related seed gathering and plant collection would be allowed in all areas meeting Utah's Rangeland Health Standards and Grazing Guidelines (BLM 1997). This could have short-term, direct adverse impacts on special status species and their habitat due to trampling and human disturbance during collection activities. Sagebrush habitat would be managed as described in the National Sage-grouse Habitat Conservation Strategy (BLM 2004d). A list of sagebrush communities prioritized for treatment is located in the Summary Table of Alternatives, Table 2.1. These restoration treatments would have long-term beneficial impacts on special status species in native sagebrush communities by providing them with improved habitat (Monsen 2004). The spread of noxious, invasive, and non-native weed species would be controlled through implementation of BLM weed management policies and action plans. In addition, restoration activities and stock animal feed would be required to use certified weed-free seed mixes, mulch, and feed. Actions taken to help slow/stop the spread of weeds in the Monticello PA would help reduce the adverse impacts of surface disturbance associated with stock use, oil and gas development, and other activities that result in the adverse impacts associated with alteration of special status species habitat. Those non-native, exotic, and invasive species of management concern for the Monticello PA are included in Table 3.58.

Under all alternatives, lands within the Monticello PA would be designated and managed as VRM classes I through IV (see Chapter 3, Section 3.18, Visual Resources). All WSAs, and eligible/designated WSR segments would be managed as VRM Class I or II. Very limited and minor impacts to scenic quality would be allowed in areas designated as VRM Class I or II. Vegetation treatments, with short-term impacts on visual quality, and other similar surface-disturbing activities designed to enhance native vegetation, would be allowed in VRM Class I or II areas. These limitations on surface disturbances as well as allowed habitat enhancement would mitigate the adverse impacts of management activities in special status species habitat.

In areas designated as VRM Class III or IV, visual objectives would allow moderate or major changes to the visual landscape. Most types of surface-disturbing activities and human visitation would be allowed in VRM Class III or IV areas. These types of disturbance could have short- and long-term adverse impacts on special status species and their associated habitat in the Monticello PA.

In occupied priority migratory bird habitat, surface disturbance would be avoided from May 1 through July 30. In addition, maintenance/improvement of lowland riparian, wetlands, and low and high desert scrub communities would be prioritized in the Monticello PA. These three requirements would benefit both migratory bird and special status species in these habitats by maintaining and improving habitat necessary for survival.

Reintroduction of native fish and wildlife species into historic or suitable ranges would continue where it is determined to be appropriate. This could help to reestablish special status species, including the Colorado River endangered fish species, in their historical habitat. This would have beneficial impacts on these species in the Monticello PA.

Bighorn sheep habitat on the 5 mesa tops (56,740 acres) would be prioritized for improvement because of potential loss of habitat caused by surface disturbance in these areas. On-site mitigation would be required for projects that disturb or remove forage and browse species used by desert bighorn sheep. These requirements would help mitigate the adverse impacts of surface-disturbing activities on special status species in sagebrush and desert shrub habitat used by bighorn sheep. Listed under each alternative are seasonal wildlife protection areas for big game species. The special conditions common to all alternatives include no use of pyrotechnics, shooting during permitted filming, no use of low-flying aircraft, and minimal surface disturbing activities (see Appendix P for minimal impact criteria during filming). Exceptions to special conditions for the seasonal wildlife protection areas could be granted by the Monticello FO Manager if it can be shown that legal rights would be curtailed, animals are not present in the specific project location, or the activity can by conducted so as not to adversely affect wildlife species. In addition, maintenance and operation activities for mineral production as well as hunting would be allowed during seasonal restrictions. These special conditions would protect and benefit special status species that utilize these areas during the seasonal protection. There would be less noise and direct disturbance from humans to special status species.

There would be 17,300 acres allotted as wildlife habitat on slopes of Peter's Canyon and East Canyon, which would have beneficial impacts on special status species in this area by reducing forage competition and direct impacts from livestock.

Impacts to special status species from woodland management activities include removal of trees used by these species as cover, roosting, or breeding sites; direct impacts to individuals from

trampling or crushing during harvesting; and indirect impacts due to changes in vegetation structure, which could be beneficial or adverse depending on the species. Woodland harvest resulting in reduced probability of wildfire would likely reduce potentially adverse impacts to special status species that occupy woodland habitats.

Indirect adverse impacts of wood gathering include off-road driving, trampling, and removal of native vegetation, which result in special status species habitat degradation that can include reductions in prey species, forage species, and cover.

Sensitive wildlife species in pinyon-juniper woodland habitat would face short- and long-term adverse impacts from surface and noise disturbance associated with woodland harvest.

All WSAs, Arch Canyon, Alkali Ridge NHL, Grand Gulch NHD (mesa-top), Beef Basin, Fable Valley, Comb Ridge CSMA (south of Highway 95), San Juan SRMA, developed recreation sites, areas unavailable for livestock grazing, wildlife exclosures, cultural sites, Indian Creek Corridor, McLoyd Canyon-Moon House, Grand Gulch Plateau CSMA (in-canyon), Grand Gulch NHD (in canyon), floodplains, and riparian/aquatic areas would be excluded from woodland harvesting. This decision would provide beneficial impacts to special status species by protecting habitat from harvesting related surface disturbances and loss of vegetation cover.

4.3.15.1.1. NAVAJO SEDGE

Site-specific plant inventories would be required prior to any proposed surface-disturbing projects in suitable Navajo sedge habitat. Activities that would be avoided in suitable habitat include road construction, land disposal and approval of ROW corridors, and grazing activities (trailing, salting, watering, and herding). All motorized travel would be limited to designated routes in suitable Navajo sedge habitat. The use of herbicide and chemical treatments would be restricted. These avoidance measures and restrictions would help to mitigate the adverse impacts of habitat degradation and fragmentation for the Navajo sedge.

4.3.15.1.2. BLACK-FOOTED FERRET

No critical habitat rules have been published for the black-footed ferret. There are no special protective measures in place because there are no known populations in the Monticello PA. However, the 1988 Recovery Plan states, “direct reduction in the area occupied by prairie dogs has been shown to reduce the number of black-footed ferrets linearly” (USFWS 1988). Therefore, it can be assumed that critical habitat for the black-footed ferret coincides with prairie dog habitat (including areas of short vegetation and bare ground), and that impacts described in this chapter for prairie dogs would be the same for the black-footed ferret.

4.3.15.1.3. GUNNISON SAGE-GROUSE

Major threats to the Gunnison sage-grouse include roads, fences, and power poles that fragment habitat and provide perches and viewing areas for sage-grouse predators, including raptors, leading to increased sage-grouse mortality (Connelly et al. 2000, Crawford et al. 2004). Additional threats to Gunnison sage-grouse include reduction in native vegetation distribution and human disturbance during breeding and nesting season. The BLM's Guidance for the Management of Sagebrush Plant Communities for Sage-grouse Conservation, BLM's National Sage-grouse Habitat Conservation Strategy (BLM 2004d) and Gunnison Sage-grouse Rangewide Conservation Plan (BLM 2005l) would be implemented in suitable habitat in the Monticello PA.

An additional 320 acres of suitable Gunnison sage-grouse habitat would be managed as a conservation easement to protect and enhance their habitat. Adherence to these plans would have beneficial impacts on Gunnison sage-grouse and other special status sagebrush species in the Monticello PA because of the habitat protections and restrictions on human disturbance specified in these plans.

4.3.15.1.4. MEXICAN SPOTTED OWL (MSO)

There would be no ground-disturbing activities allowed within a 0.5-mile radius of known MSO nests, with the 0.5-mile protective radii designated as Protected Activity Centers (PACs). These would be protected as outlined in the MSO Recovery Plan (USFWS 1995). Because healthy, native vegetation is a key component of suitable habitat (food source and shelter for owl prey species), these restrictions would have long-term beneficial impacts on MSOs and other special status species in the MSO nest buffer zones. MSO Designated Critical Habitat and suitable habitat would be avoided or use restrictions would be implemented. Suitable habitat restrictions would include staying on designated routes or revegetating access routes created by a project: actions that would help mitigate the adverse impacts of any surface disturbance associated with road construction in MSO prey habitat.

In addition, surveys would be required for temporary activities taking place within 0.5 miles of suitable MSO habitat during breeding season (March 1–August 31). For all permanent actions, two years of surveys would be required prior to commencement of the activity. If MSOs were found during the surveys, no disturbing actions or permanent structures would be allowed within 0.5 miles of any identified nest sites or PACs. Additionally, noise emissions would be reduced below 45 dBA at 0.5 miles from suitable habitat. This would help reduce the stress of noise on MSOs during the breeding season. Various studies have shown that human presence and noise disturbance leads to a significant reduction in prey handling and delivery by females, impacts that would reduce nest success (Frid 2002; Swarthout and Steidl 2003). These requirements would mitigate the adverse impacts of human disturbance on MSOs during breeding season.

4.3.15.1.5. BALD EAGLE

Bald eagles would be protected as outlined in the Bald Eagle Protection Act of 1940 (16 U.S.C. 668-668d, 54 Stat. 250, as amended). There is no recovery plan for this species. Activities on BLM lands that contain nesting or winter roosting habitat for the bald eagle would be avoided or restricted, depending on the duration and timing of the activity. Bald eagles would be managed according to the Best Management Practices for Raptors and their Associated Habitats in Utah (BLM 2006c). These management requirements would include restrictions and avoidance measures, including required surveys prior to activity, possible monitoring during the activity, implementation of seasonal and spatial buffers during the breeding season (January 1–August 31), and avoidance of disturbance in riparian areas unless impracticable. No future ground-disturbing activities would be authorized within a 0.5-mile radius of known bald eagle nest sites year-round. Deviations may be allowed only after appropriate levels of consultation and coordination with the USFWS. In addition, no permanent above-ground structures would be allowed within a 0.50-mile radius of a winter roost site if the structure would result in the habitat becoming unsuitable for future winter roosting by bald eagles.

As discussed in the MSO section, these requirements would help to mitigate the adverse impacts of human disturbance on bald eagles during breeding and roosting seasons.

4.3.15.1.6. SOUTHWESTERN WILLOW FLYCATCHER (SWFL) AND YELLOW-BILLED CUCKOO

In SWFL and yellow-billed cuckoo riparian habitat, there would be no surface-disturbing activities within 300 feet of riparian areas, restrictions that would have long-term beneficial impacts on riparian special status species and their habitat within those buffer zones by eliminating ground disturbance and preventing habitat degradation. In addition, native species revegetation of disturbed riparian and adjacent upland areas would be required upon completion of an activity. Surveys would be required for activities taking place within suitable riparian habitat (see Map 54). Construction and other disruptive activities would not be permitted within a 0.25 mile buffer of occupied breeding habitat from May 1 through August 15. No permanent loud-noise-emitting facilities would be permitted within 0.25 miles of riparian habitat. In addition, SWFL would be protected as outlined in the SWFL Recovery Plan (USFWS 2002e). These requirements would help to mitigate the adverse impacts of human disturbances on special status bird species during breeding, nesting, and roosting seasons.

4.3.15.1.7. CALIFORNIA CONDOR

California condors and their habitat would be protected as outlined in the Recovery Plan for the California condor (USFWS 1996). If California condors are found to nest in the Monticello PA, there would be no roads or permanent structures allowed within 1 mile of the nest. In addition, no surface-disturbing activities or special use permit groups would be allowed within 1 mile of the nest during breeding season. These requirements would help to mitigate the adverse impacts of human disturbance on nesting California condors. Adverse impacts would be similar to those discussed for the MSO.

4.3.15.1.8. ENDANGERED COLORADO RIVER FISHES

The humpback chub, Colorado pikeminnow, razorback sucker, and bonytail chub would all be protected as outlined in their respective recovery plans (USFWS 2002a; USFWS 2002b; USFWS 2002c; USFWS 2002d). All water depletions from any portion of the Upper Colorado River drainage basin above Lake Powell have been determined to adversely affect or modify the critical habitat of the 4 resident endangered fish species and must be reported to the BLM (USFWS 1987). Any new depletion would require formal Section 7 consultation with the USFWS and would require implementation of the Conservation Measures dictated in the Programmatic Biological Opinion for depletions to the Colorado River system (USFWS 1987).

Surveys and monitoring would be required for activities taking place within designated critical habitat. Loss or degradation of riparian habitats would be avoided. The Utah Oil and Gas Pipeline Crossing Guidance would be implemented for all activities occurring near riparian areas (Appendix F). These requirements would help mitigate the adverse impacts of disturbance on special status fish species within the Monticello PA because of the associated reductions in human impacts such as grazing and surface-disturbing activities on fish habitat (Lentsch and Converse 1997).

4.3.15.2. ALTERNATIVES IMPACTS

4.3.15.2.1. IMPACTS OF CULTURAL RESOURCE DECISIONS ON SPECIAL STATUS SPECIES

4.3.15.2.1.1. Alternative A

Under Alternative A, the potential direct adverse impacts of cultural resource decisions on special status species include disturbance of individual wildlife and plant species. Wildlife could be disturbed by cultural resource site visitors, and plant species could be trampled or uprooted by visitors in cultural areas with high visitation. The potential indirect adverse impacts of cultural resource decisions on special status species include habitat disturbance and/or alteration caused by surface disturbance. This includes potential introduction and spread of weedy, non-native plant species. Human disturbance, including noise and vegetation trampling, in special status species habitat would be reduced due to the closure of the Grand Gulch Special Emphasis Area/Grand Gulch National Historic District to private and/or commercial use of woodland products, mineral leasing, OHV use, and mechanized or mechanical surface disturbance, including vegetation treatments. This would have beneficial impacts on special status species by decreasing the amount of surface disturbance caused by foot/vehicle traffic, tree removal, and oil and gas development in the area. Long-term adverse impacts would occur on special status species by not allowing mechanized or mechanical vegetation treatments that are designed to improved habitat for wildlife.

4.3.15.2.1.2. Alternative B

Under Alternative B, 4 areas totaling 62,567 acres would be managed as CSMAs. Prescriptions for the CSMAs under Alternative B would have beneficial impacts to special status species because there would be limits on the number of visitors and surface disturbance allowed, and OHV restrictions would be imposed. Acres of each CSMA by vegetation type are provided in Table 4.145 in Section 4.3.17, Vegetation. The CSMAs are located in riparian, sagebrush, desert shrub, conifer/mountain shrub, and pinyon-juniper woodland habitat types. The dominant vegetation type in all CSMAs combined is pinyon-juniper woodland; therefore, more impacts would be expected on pinyon-juniper woodland–dependent special status species. Alternative B would have more beneficial impacts on special status species than would Alternative A because of restrictions on surface disturbance and visitor numbers within the proposed CSMAs. The impacts of cultural resource decisions on special status species would be the same as those discussed in Alternative A for the Grand Gulch National Historic Area.

4.3.15.2.1.3. Alternative C

Alternative C would designate the same total acreage of CSMAs as would Alternative B; however, the management decisions would be different. As compared to Alternative B, Alternative C would allow for a higher number of visitors per CSMA; Comb Ridge CSMA (38,012 acres) and Tank Bench CSMA (2,646 acres) would be open to oil and gas leasing subject to standard lease terms; and Comb Ridge CSMA would be available for private and/or commercial use of woodland products. These decisions would have an adverse impact on special status species due to noise disturbance and habitat alteration and disturbance. Because the pinyon-juniper woodland habitat type is the most prevalent in the Comb Ridge CSMA, the

allowance could result in habitat alteration for special status plant and animal species and noise disturbance for animal species during wood removal activities.

Under Alternative C, the impacts of cultural resource decisions on special status species in the Grand Gulch National Historic District would be the same as those discussed for Alternative A.

4.3.15.2.1.4. Alternative D

Under Alternative D, no CSMAs would be proposed for designation. Visitors would be allowed in greater numbers and more area would be open to woodland product harvest under this alternative. In addition, 2,646 more acres (the proposed Tank Bench CMSA under Alternatives B and C) would be open to mineral material disposal and geophysical work. These management decisions would have adverse impacts on special status species as described in the other alternatives.

This alternative would have fewer adverse impacts on special status species than would Alternative A because visitor use numbers would be imposed for Butler Wash east of Comb Ridge and for McLoyd Canyon-Moon House, and woodland product harvest would not be allowed in Beef Basin. However, there would be more adverse impacts to special status species under Alternative D than under Alternatives B and C because of the decisions to allow for more visitors, woodland product harvest, and mineral development.

4.3.15.2.1.5. Alternative E

The impacts from Alternative E cultural management decisions on special status species would be the same as Alternative B.

4.3.15.2.2. Impacts of Fire Management Decisions on Special Status Species

4.3.15.2.2.1. Desert Shrub Habitat

Under all alternatives, wildland fire use or fuels management actions and associated surface-disturbing treatments would not be authorized in desert shrub habitats, which are known to be highly susceptible to post-fire cheatgrass or other weed invasion, unless reasonable Resource Protection Measures were in place. Resource Protection Measures would result in beneficial impacts because fire management activities that promote weed invasion could adversely impact special status plant species through direct impacts to individuals and competition from weed species. These also indirectly impact special status wildlife through short- and long-term changes in vegetation composition and structure and weed-induced destabilization of biological soil crusts.

4.3.15.2.2.2. Sagebrush and Perennial Grassland and Pinyon-Juniper Woodland

The LUP indicates that the majority of fuels management treatments would occur in pinyon-juniper woodland and sagebrush habitats. Impacts would be analyzed with site-specific NEPA once it is determined where individual treatments would occur. Under all alternatives, fuels management actions would include surface-disturbing treatments on 5,000–10,000 acres annually within the Monticello PA. Over the life of the plan, this would result in approximately 75,000–150,000 acres of land subject to fuels management.

Impacts to special status species would include trampling or removal of vegetation and associated disturbance to sensitive wildlife species from fire and human presence. In the long-term, however, vegetation treatments would potentially benefit special status species habitat by removing competition from weedy natives and invasive species.

4.3.15.2.2.3. Riparian and Wetland Habitats

Direct adverse impacts from fire management decisions would include aquatic habitat degradation and modification, including sedimentation and salinization resulting from soil erosion and stream bank destabilization, changes in water chemistry, changes in flow pattern, and possible water withdrawals (USFWS 2002a; BLM 2005c; Trombulak and Frissell 2000). Indirect beneficial impacts of fire management on special status species and their habitats include the reduction of catastrophic wildland fires that cause habitat modification, soil erosion, stream sedimentation, and water quality degradation. Indirect adverse impacts of fire management in riparian areas include the potential for alteration of plant community structure, species composition, and a relative abundance of species. Fire is an imminent threat to special status species riparian habitats, because native riparian plants are neither fire-adapted nor fire-regenerated; therefore, fires in riparian habitats can cause catastrophic, immediate, and drastic changes in riparian plant density and species composition (USFWS 2002a). Under all alternatives, wildland fire and fuels management decisions would not be authorized in potential special status species riparian habitats (see Section 4.3.15.1).

4.3.15.2.2.4. All Other Special Status Species Habitats in the Monticello PA

Under all other habitat types, wildland fire use would not be authorized unless reasonable Resource Protection Measures were in place if the habitat is deemed susceptible to post-fire cheatgrass or other weed invasion, important as terrestrial and aquatic habitat for special status species, or a non-fire-adapted vegetation community.

4.3.15.2.3. Impacts of Health and Safety Decisions on Special Status Species

4.3.15.2.3.1. Riparian and Wetland Habitats

Hazardous waste contamination from AML sites could directly or indirectly impact special status species in the short- and long-term. Special status fish and amphibian species may be particularly vulnerable to adverse impacts to water quality, which could result in mortality of individuals and reduced forage or prey availability, as well as impacts to other habitat qualities. Any impacts to water quality could indirectly impact sensitive wildlife species that use affected riparian or wetland habitats through exposure to contaminants or impacts to prey availability or habitat quality.

Under all alternatives, some AML sites would be prioritized due to hazardous waste contamination and water-quality issues. The top criteria used to prioritize water-quality-based AML programs include threats to the environment (see special status species section of Table 2.2, Summary of Impacts), which takes into account habitat quality for all special status fish species (see Table 4.106). These actions are conducted under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) authority and follow CERCLA processes. These reclamations would help to mitigate for the adverse impacts of poor water

quality on special status fish species because the threat of groundwater contamination would be removed. Long-term water-quality monitoring would be required.

4.3.15.2.3.2. Caves and Rock Crevices

In addition to naturally occurring caves and rock crevices, abandoned mining structures are often used as roosting habitat by bats, including sensitive bat species. Of the 18 bat species in Utah, 14 species regularly occur in abandoned mines. One state special status species (Townsend's big-eared bat) has been found exclusively in abandoned mines (Grandison 2004). Of the special status bat species occurring in the Monticello PA (see Table 4.106), three are known to use caves as winter, day, or night roosts: Townsend's big-eared bat, fringed myotis, and spotted bat (Oliver 2000). These species have the highest potential for being adversely impacted by the reclamation and mitigation of AMLs. Completely sealing off AML entrances could have direct adverse impacts to roosting individuals and populations, including the reduction of suitable roosting habitats. Under all alternatives, potential mitigations to avoid and/or minimize impacts to special status bat species would include preconstruction surveys and the installation of bat-compatible mine gates and cupolas that allow bats to pass through but prohibit human entrance. Use of mitigation structures and monitoring would lessen adverse impacts of mine closures on bats.

4.3.15.2.3.3. All Other Special Status Species Habitats in the Monticello PA

Under all alternatives, impacts to all other special status species from health and safety decisions would be negligible because they do not occur on AML sites.

4.3.15.2.4. Impacts of Lands and Realty Decisions on Special Status Species

4.3.15.2.4.1. Alternative A

Under Alternative A, proposals for ROWs for wind or solar energy development would be considered in the Monticello PA except in WSAs. In addition, proposals for ROWs in VRM Class I and II areas would be difficult if not impossible to authorize because the development would not likely meet the VRM Class I and II management objectives for minimal to minor surface disturbances.

In all other areas where ROWs would be authorized, there could be long-term direct, adverse impacts on special status species habitat where installation would occur. These impacts would result from vegetation crushing and removal associated with construction and habitat fragmentation. Short-term direct impacts could result from noise disturbances. Long-term indirect adverse impacts could result from the potential introduction of invasive plant species by construction equipment and building personnel. This alternative has the greatest amount of acreage open to ROW authorization and, therefore the greatest potential for impacts to special status species.

4.3.15.2.4.2. Alternative B

Alternative B would consider proposals for ROWs for wind or solar energy development in the Monticello PA except in WSAs; designated VRM Classes I, II, and III areas; Wild and Scenic River corridors; ACECs; raptor habitat; migratory bird habitat; and special status species habitat (not federally listed species habitat). The magnitude of the adverse impacts under this alternative

would be reduced as a result of the total combined acreages that would be exclusion and avoidance areas for ROWs.

4.3.15.2.4.3. Alternative C

Under Alternative C, the impacts of lands and realty decisions on special status species would be the same as under Alternative B except for the increase in surface disturbance associated with the following: 1) the allowance of ROWs in ACECs and VRM Class II and III areas, and 2) the authorization of ROWs for wind or solar energy in special status species habitat (except for federally protected species). These differences would increase the number of acres in the Monticello PA with potential to be adversely affected by surface disturbance and human presence associated with this management decision. An increase in acreage open to disturbance could have short- and long-term adverse impacts on special status plant and wildlife species in the Monticello PA, as noted under Alternative A.

4.3.15.2.4.4. Alternative D

Under Alternative D, the impacts of lands and realty decisions on special status species would be the same as under Alternative C except for the increase in surface disturbance associated with ROWs being allowed in Wild and Scenic River corridors, which would increase the number of acres in the Monticello PA open to surface disturbance and human presence associated with this management decision. An increase in acreage open to disturbance could have short- and long-term adverse impacts on special status plant and wildlife species in the Monticello PA, as noted under Alternative A.

4.3.15.2.4.5. Alternative E

Under Alternative E, the impacts of lands and realty decisions on special status species would be the same as under Alternative B, except that this alternative would exclude authorization of ROWs on approximately 582,357 acres of non-WSA wilderness characteristics areas in the Monticello PA (33% of the planning area would be ROW exclusion areas). The impacts of excluding ROW development to protect non-WSA wilderness values would be beneficial in the long-term on special status species habitat because surface disturbances within habitat would potentially be reduced. Because of the restrictions on surface disturbance and human presence, this alternative would have the lowest level of adverse impacts on special status species of the five alternatives.

4.3.15.2.5. Impacts of Livestock Grazing Decisions on Special Status Species

4.3.15.2.5.1. Alternative A

Under Alternative A, 125,356 acres would be unavailable for livestock grazing (those areas shown in Table 4.28, including the Comb Wash Allotment). Table 4.107, below, shows the number of acres of habitat for select special status species unavailable for grazing under each alternative.

Table 4.107. Special Status Species Habitat Unavailable for Grazing by Alternative

Species	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Bald Eagle	4,835	7,898	7,898	4,835	7,898
Federally Listed Fish	0	0	0	0	0
MSO	71,178	73,010	73,010	71,178	73,010
SWFL	2,381	2,816	2,816	2,394	2,816
Gunnison Sage-grouse	0	0	0	0	0

Riparian and Rocky Slopes and Canyons

Under Alternative A, approximately 2% of the total 250,264 acres of bald eagle habitat, 10% of the total 22,896 acres of SWFL habitat, and 19% of the total 378,518 acres of MSO habitat in the Monticello PA would be unavailable for livestock grazing.

Adverse impacts of livestock on special status riparian species could include loss of riparian habitat as a result of grazing of palatable native plant species. Once disturbed, these areas could become more susceptible to invasion by noxious and introduced weeds, which tend to be low value forage and cover species for special status wildlife (Popolizio et al. 1994, Sarr et al. 1996, Belsky et al. 1999).

Under Alternative A, none of the total 1,690 acres of designated critical fish habitat in the Monticello PA would be unavailable for livestock grazing. Potential adverse impacts on special status fish species and their habitat would include direct, adverse impacts of livestock presence in streams and indirect, adverse impacts of increased stream sedimentation resulting from overland flow associated with riparian soil compaction. Cattle hooves compact the soil on stream-bank slopes, which results in less rainwater infiltration into soils and more overland flows. The result is large, short-lived flows rather than small, perennial flows (Trimble and Mendel 1995).

Sagebrush, Desert Shrub, Conifer, and Pinyon-Juniper Woodland

Under Alternative A, none of the Gunnison sage-grouse habitat in the Monticello PA would be unavailable for livestock grazing, which could have direct and indirect adverse impacts on Gunnison sage-grouse individuals and their habitat. Livestock grazing, when properly grazed, would not necessarily have adverse impacts on the native plant populations in an area. However, when improper grazing occurs, adverse impacts on native vegetation could be possible in some areas (Sparrow et al. 2003; Young and Evans 1973). The invasion and establishment of weedy species in arid environments is common following surface disturbance. Most native plant species are slow-growing, and generally cannot compete with invasive plants in disturbed areas (Stevens 2004). Under all alternatives, using standards and guides, grazing could be reduced in those areas where the native vegetation appears to be stressed. This would mitigate the adverse impacts of surface disturbance on these special status plant and wildlife habitats associated with livestock grazing in the Monticello PA. Table 4.146 in Section 4.3.17, Vegetation, shows the number of acres unavailable for grazing in each habitat for each alternative.

4.3.15.2.5.2. Alternative B

Under Alternative B, 134,843 acres would be unavailable for livestock grazing (those areas shown in Table 4.28 with additional unavailable acreages shown in Table 4.29). In addition, seasonal restrictions, closures, and/or forage utilization limits would be imposed on grazing in riparian areas determined to be Functioning at Risk. This would mitigate the potential adverse impacts of livestock grazing in special status species habitats, as discussed in Alternative A.

Riparian and Canyons

Under this alternative, 3% of total bald eagle habitat would be unavailable for livestock grazing, which would be 1% more than under Alternative A; 19% of total MSO habitat would be unavailable for livestock grazing (same as Alternative A); 12% of SWFL habitat would be unavailable for livestock grazing (2% more than under Alternative A). These proposed grazing restrictions would have more beneficial impacts on special status species than Alternative A because more potential habitat would be protected from grazing-related surface disturbances to vegetation. There would be no critical fish habitat unavailable for grazing under this alternative.

Sagebrush, Desert Shrub, Conifer, and Pinyon-Juniper Woodland

Under Alternative B, none of the Gunnison sage-grouse habitat in the Monticello PA would be unavailable for livestock grazing, which would have the same level of direct and indirect adverse impacts on Gunnison sage-grouse individuals and their habitat as under Alternative A. The additional acres of federally listed species habitat closed to livestock grazing under this alternative would decrease the magnitude of the adverse impacts associated with livestock grazing decisions more than under Alternative A or D.

4.3.15.2.5.3. Alternative C

Under Alternative C, 133,519 acres would be unavailable for livestock grazing. The impacts would be similar to Alternative B because the only difference between the two alternatives is Mule Canyon south of U-95 (1,324 acres) would unavailable for livestock grazing.

4.3.15.2.5.4. Alternative D

Under Alternative D, 131,350 acres would be unavailable for livestock grazing (the number of unavailable acres shown in Table 4.28, with additional unavailable acres shown in Table 4.32). The same number of acres of federally listed wildlife species habitat would be closed to grazing under this alternative as under Alternative A. These closures would reduce the magnitude of the adverse impacts associated with livestock grazing in the Monticello PA, when compared to Alternative A, but would have more adverse impacts than Alternatives B, C, and E because fewer acres would be unavailable for grazing under this alternative.

4.3.15.2.5.5. Alternative E

Under Alternative E, the impacts of livestock grazing decisions on special status species would be the same as under Alternative B because the management decisions are the same, except for management of wilderness values protection within non-WSA lands with wilderness characteristics. Livestock grazing with the non-WSA wilderness characteristics lands would not be affected by the decision to protect wilderness values in these areas.

4.3.15.2.6. Impacts of Mineral Decisions on Special Status Species

4.3.15.2.6.1. Alternative A

In Tables 4.147–4.149 in Section 4.3.17, Vegetation, acres of each special status species habitat type in each leasing category are shown for each of the three RFD areas. Acreage figures under the standard stipulations (standard conditions) and timing and controlled surface use (special conditions) stipulations reflect the total BLM-administered areas within the Monticello PA open to surface-disturbing activities. The impacts of surface-disturbing oil and gas activities on native vegetation (special status species habitat) are discussed in Section 4.3.17.2.5, Impacts of Minerals Decisions on Vegetation. These are not estimates of the total area disturbed within the Monticello PA, but a comparison by alternative of the amount of area open to potential development within BLM-administered areas within the Monticello PA. All acreages provided in this document are approximations. Tables 4.108–4.111 include acres of select federally listed and BLM special status species habitat under each of the minerals leasing stipulations.

<u>Desert Shrub, Sagebrush, Perennial Grassland, Pinyon-Juniper Woodland, and Conifer/Mountain Shrub</u>

Potential direct, adverse impacts of oil and gas development on special status species include placement of facilities or roads within either occupied habitat or potential habitat necessary for recovery, resulting in an overall reduction in suitable and potentially suitable habitat and an increase in habitat fragmentation (see Table 4.217). Additionally, noise associated with construction and operation activities could potentially disturb special status wildlife species. Protective measures would be implemented to mitigate these impacts (see Appendix A). Further mitigation measures include native vegetation protection and restoration requirements discussed in Section 4.3.17.4, which would benefit potentially suitable special status wildlife habitat and special status plant individuals and habitat. Under Alternative A, no Gunnison sage-grouse habitat would be categorized as closed or NSO to minerals leasing.

<u>Riparian</u>

Oil and gas development would have both direct and indirect adverse impacts on riparian species. Although the riparian zone is listed as NSO, this stipulation could be waived if necessary for transmission lines, roads, and surface occupancy (Appendix A). Development of oil and gas wells requires approximately 2.4 acre feet of water for well drilling and extraction per well, which could adversely affect riparian habitat. Each contracting company would identify its own water source and disposal methods for waste products. One of the main factors in the listing of the Colorado River fishes was the cumulative impact of water depletion within the Colorado River system and their associated critical habitat. Because the Colorado and San Juan Rivers are designated as critical habitat for the 4 federally listed fish species, any water withdrawal would constitute a significant impact on these species. New depletions from these rivers or changes in the amount of water returned to the rivers would constitute an additional impact on the Colorado River fishes. Although stipulations would mitigate the adverse impacts of minerals development on water quality, the mineral development, including road construction, outlined for each alternative could result in indirect, adverse impacts to water quality due to sedimentation associated with soil compaction in areas adjacent to riparian areas and subsequent overland flow (Trimble and Mendel 1995).

Other special status species dependent on riparian habitat for survival could be adversely impacted by oil and gas development activities. These impacts include a potential reduction on available prey species (fish) for special status bird species. Under Alternative A, 24% of SWFL habitat, 16% of bald eagle habitat, and none of Colorado River fish habitat would be categorized as closed or NSO to minerals leasing.

Rocky Slopes and Canyons

Oil and gas maintenance activities would be allowed year-round in lands managed with standard stipulations and special conditions. The potential exists for the MSO to occupy the rocky slope/canyon habitat in the Monticello PA. Under Alternative A, 31% of MSO habitat would be closed or NSO to minerals leasing. Direct, adverse impacts include short-term disturbance of individual owls and other special status species resulting from construction and operation noise, and a long-term reduction in habitat from the installation of mineral development infrastructure. These impacts, however, would be partially mitigated by riparian habitat restoration requirements and seasonal disturbance restrictions. Temporary mineral development activities are not allowed during the owl breeding season (March 1–August 31) in habitat found to be occupied by owls. No permanent disturbing actions would be allowed within 0.5 miles of areas where MSO surveys have found nesting individuals.

Table 4.108 provides acres of special status species habitat located in areas of the Monticello PA designated as closed or NSO to minerals leasing for each alternative. The acres in Table 4.108 are carried forward from the 1991 RMP, which include acres from both locatable mineral entry and oil and gas RFD areas. Tables 4.109–4.123 provide acres of special status species habitat by RFD area acres only; therefore, they are not comparable. At the time of this analysis, spatially explicit habitat information is only available for these eight federally listed and BLM special status species.

Table 4.108. Acres of Special Status Species Habitat designated as Closed or NSO by Alternative

Species	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
MSO	117,424	166,131	116,648	112,101	300,489
Gunnison Sage-Grouse	0	0	0	119	0
Colorado River fish	0	1,670	1,670	1,397	1,668
SWFL	5,390	11,167	6,603	10,985	11,670
Bald Eagle	39,127	28,335	25,290	22,360	75,694

Tables 4.109 through 4.111 lists the number of acres of TES species habitat within each of the RFD areas by mineral leasing category. Section 4.3.17, Vegetation, provides acreage estimates of actual surface disturbance in each RFD for each alternative. Site-specific NEPA will take place for each oil and gas development once actual well locations are known.

Table 4.109. Acres of Special Status Species Habitat in the Blanding Sub-basin Under Alternative A

Special Status Species	Surface Use with Standard Conditions (acres)	Surface Use Limited by Special Conditions (acres)	NSO and Closed to Mineral Entry (acres)	NSO and Open to Mineral Entry (acres)	Closed to Leasing and Mineral Entry (acres)
MSO	0	0	0	0	0
Gunnison Sage-Grouse	122	0	0	0	0
Colorado River fish	423	0	190	0	0
SWFL	6,949	2,266	532	83	410
Bald Eagle	23,772	84,111	3,537	2,506	0

Table 4.110. Acres of Special Status Species Habitat in the Monument Upwarp Under Alternative A

Special Status Species	Surface Use with Standard Conditions (acres)	Surface Use Limited by Special Conditions (acres)	NSO and Closed to Mineral Entry (acres)	NSO and Open to Mineral Entry (acres)	Closed to Leasing and Mineral Entry (acres)
MSO	75,225	76,570	0	2,173	99,903
Gunnison Sage-Grouse	0	0	0	0	0
Colorado River fish	17	0	262	0	0
SWFL	1,386	1,377	357	964	2,433
Bald Eagle	7,598	31,506	4,759	16,204	7,731

Table 4.111. Acres of Special Status Species Habitat in the Paradox Fold and Fault Under Alternative A

Special Status Species	Surface Use with Standard Conditions (acres)	Surface Use Limited by Special Conditions (acres)	NSO and Closed to Mineral Entry (acres)	NSO and Open to Mineral Entry (acres)	Closed to Leasing and Mineral Entry (acres)
MSO	76,108	33,381	0	4,916	10,432
Gunnison Sage-Grouse	4,424	0	0	0	0
Colorado River fish	37	236	0	0	0
SWFL	2,145	1,185	0	294	317
Bald Eagle	14,326	46,379	0	1,723	2,667

4.3.15.2.6.2. Alternative B

Under Alternative B, the qualitative impacts on special status plant and animal species would be the same as described under Alternative A. See Tables 4.152–4.154 in Section 4.3.17, Vegetation for the acres of each vegetation type in each leasing category in each of the RFD areas.

Under Alternative B, 49% of SWFL habitat in the Monticello PA would be categorized as NSO or closed, which is 25% more than under Alternative A. Under Alternative B, 11% of bald eagle habitat in the Monticello PA would be categorized as NSO or closed, which is 5% less than under Alternative A. Under Alternative B, 99% of Colorado River fish habitat in the Monticello PA would be categorized as NSO or closed, which is 99% more than under Alternative A. This would protect other special status riparian plant and animal species, including the yellow-billed cuckoo. Under Alternative B, 44% of MSO habitat in the Monticello PA would be categorized as NSO or closed, which is 13% more than under Alternative A. This would protect MSO as well as other special status species in this cliff, desert shrub and sagebrush habitat. No Gunnison sage-grouse habitat would be closed or NSO to mineral entry. Overall, Alternative B would have fewer adverse impacts on special status species than Alternative A because more acres of habitat would be closed or NSO to oil and gas leasing. Tables 4.112 to 4.114 list the number of acres of TES habitat within each of the RFD areas.

Table 4.112. Acres of Special Status Species Habitat in the Blanding Sub-basin Under Alternative B

Special Status Species	Standard Lease Terms	Controlled Surface Use	Controlled Surface Use and Timing Limitations	Timing Limitations	No Surface Occupancy	Closed
MSO	0	0	0	0	0	0
Gunnison Sage-Grouse	0	122	0	0	0	0
Colorado River fish	19	0	0	0	961	43
SWFL	2,997	0	2,660	2,444	4,573	284
Bald Eagle	9,664	0	2,921	94,306	7,019	506

Table 4.113. Acres of Special Status Species Habitat in the Monument Upwarp Under Alternative B

Special Status Species	Standard Lease Terms	Controlled Surface Use	Controlled Surface Use and Timing Limitations	Timing Limitations	No Surface Occupancy	Closed
MSO	23,595	2,170	3	122,922	130	105,050
Gunnison Sage-Grouse	0	0	0	0	0	0
Colorado River fish	1	0	0	0	199	194
SWFL	680	27	75	1,727	1,318	2,836
Bald Eagle	2,814	3,580	5,762	41,523	3,119	11,410

Table 4.114. Acres of Special Status Species Habitat in the Paradox Fold and Fault Under Alternative B

Special Status Species	Standard Lease Terms	Controlled Surface Use	Controlled Surface Use and Timing Limitations	Timing Limitations	No Surface Occupancy	Closed
MSO	2,806	40,582	25	20,375	49,354	11,597
Gunnison Sage-grouse	69	4,402	0	0	0	0
Colorado River fish	0	0	0	0	74	199
SWFL	96	1,286	7	405	1,686	470
Bald Eagle	853	16,630	35	41,373	2,688	3,593

4.3.15.2.6.3. Alternative C

Under Alternative C, the qualitative affects on special status plant and animal species would be the same as described under Alternative A.

Under Alternative C, 29% of SWFL habitat in the Monticello PA would be categorized as NSO or closed, which is 5% more than under Alternative A. Under Alternative C, 10% of bald eagle habitat in the Monticello PA would be categorized as NSO or closed, which is 6% less than under Alternative A. Under Alternative C, 99% of Colorado River fish habitat in the Monticello PA would be categorized as NSO or closed, which is 99% more than under Alternative A. Under Alternative C, 31% of MSO habitat in the Monticello PA would be categorized as NSO or closed, which is the same as under Alternative A. This would protect MSO as well as other special status species in this cliff, desert shrub, and sagebrush habitat. No Gunnison sage-grouse habitat would be closed or NSO to mineral entry. Overall, Alternative C would have fewer adverse impacts on special status species than Alternative A because more acres of habitat would be closed or NSO to oil and gas leasing. Tables 4.115–4.117 list the number of acres of MSO, Colorado River fishes, and sage-grouse habitat within each of the RFD areas. Spatially explicit protected habitat information is only available for these six special status species.

Table 4.115. Acres of Special Status Species Habitat in the Blanding Sub-basin Under Alternative C

Special Status Species	Standard Lease Terms	Controlled Surface Use	Controlled Surface Use and Timing Limitations	Timing Limitations	No Surface Occupancy	Closed
MSO	0	0	0	0	0	0
Gunnison Sage-Grouse	0	122	0	0	0	0
Colorado River fish	19	0	0	0	961	43
SWFL	5,841	2	90	1,799	2,158	409
Bald Eagle	22,648	5	3,076	81,842	6,339	506

Table 4.116. Acres of Special Status Species Habitat in the Monument Upwarp Under Alternative C

Special Status Species	Standard Lease Terms	Controlled Surface Use	Controlled Surface Use and Timing Limitations	Timing Limitations	No Surface Occupancy	Closed
MSO	53,934	1,790	387	92,711	0	105,050
Gunnison Sage-Grouse	0	0	0	0	0	0
Colorado River fish	1	0	0	0	199	194
SWFL	1,711	27	293	1,571	306	2,755
Bald Eagle	6,182	767	8,952	39,369	1,529	11,410

Table 4.117. Acres of Special Status Species Habitat in the Paradox Fold and Fault Under Alternative C

Special Status Species	Standard Lease Terms	Controlled Surface Use	Controlled Surface Use and Timing Limitations	Timing Limitations	No Surface Occupancy	Closed
MSO	22,079	35,101	38,118	12,024	5,819	11,597
Gunnison Sage-Grouse	0	4,402	0	0	0	0
Colorado River fish	0	0	0	0	74	199
SWFL	636	1,073	1,112	154	505	470
Bald Eagle	8,514	13,362	1,882	35,909	1,913	3,593

4.3.15.2.6.4. Alternative D

Under Alternative D, the qualitative impacts on special status plant and animal species would be the same as described under Alternative A.

Under Alternative D, 48% of SWFL habitat in the Monticello PA would be categorized as NSO or closed, which is 24% more than under Alternative A. Under Alternative D, 9% of bald eagle habitat in the Monticello PA would be categorized as NSO or closed, which is 7% less than under Alternative A. Under Alternative D, 83% of Colorado River fish habitat in the Monticello PA would be categorized as NSO or closed, which is 83% more than under Alternative A. Alternative D is the only alternative to classify any sage-grouse habitat (119 acres) as NSO or closed to minerals development. This would provide more protection for sage-grouse and other special status sagebrush plant and animal species than Alternatives A, B, or C. Under Alternative D, 30% of MSO habitat in the Monticello PA would be categorized as NSO or closed, which is 1% less than Alternative A. This would provide less protection to MSO as well as other special status species in this cliff, desert shrub, and sagebrush habitat. Overall, Alternative D would have fewer adverse impacts on special status species than Alternative A because more acres of habitat would be closed or NSO to oil and gas leasing. Tables 4.118–4.120 list the number of acres of

MSO, Colorado River fishes, and sage-grouse habitat within each of the RFD areas. Spatially explicit protected habitat information is only available for these seven special status species.

Table 4.118. Acres of Special Status Species Habitat in the Blanding Sub-basin Under Alternative D

Special Status Species	Standard Lease Terms	Controlled Surface Use	Controlled Surface Use and Timing Limitations	Timing Limitations	No Surface Occupancy	Closed
MSO	0	0	0	0	0	0
Gunnison Sage-Grouse	3	0	0	0	119	0
Colorado River fish	19	0	0	0	1,004	0
SWFL	409	0	0	2,158	6,596	1,136
Bald Eagle	13,342	0	0	94,233	6,841	0

Table 4.119. Acres of Special Status Species Habitat in the Monument Upwarp Under Alternative D

Special Status Species	Standard Lease Terms	Controlled Surface Use	Controlled Surface Use and Timing Limitations	Timing Limitations	No Surface Occupancy	Closed
MSO	115,434	0	0	36,769	0	101,669
Gunnison Sage-Grouse	0	0	0	0	0	0
Colorado River fish	1	0	0	0	393	0
SWFL	3,354	0	0	371	504	2,432
Bald Eagle	11,760	0	0	43,596	4,947	7,905

Table 4.120. Acres of Special Status Species Habitat in the Paradox Fold and Fault Under Alternative D

Special Status Species	Standard Lease Terms	Controlled Surface Use	Controlled Surface Use and Timing Limitations	Timing Limitations	No Surface Occupancy	Closed
MSO	55,259	0	0	59,046	0	10,433
Gunnison Sage-Grouse	1,713	2,758	0	0	0	0
Colorado River fish	0	0	0	273	0	0
SWFL	1,812	1	0	1,819	0	317
Bald Eagle	15,954	0	0	46,550	0	2,667

4.3.15.2.6.5. Alternative E

Under Alternative E, the qualitative impacts on special status plant and animal species would be the same as described under Alternative A. See Tables 4.164–4.166 in Section 4.3.17, Vegetation for acres of each vegetation type in each leasing category in each of the RFD areas.

Under Alternative E, 56% of SWFL habitat in the Monticello PA would be categorized as NSO or closed, which is 32% more than under Alternative A. Under Alternative E, 31% of bald eagle habitat in the Monticello PA would be categorized as NSO or closed, which is 15% more than under Alternative A. Under Alternative E, 99% of Colorado River fish habitat in the Monticello PA would be categorized as NSO or closed, which is 99% more than under Alternative A. This would protect other special status riparian plant and animal species including the yellow-billed cuckoo. No Gunnison sage-grouse habitat would be closed or NSO to mineral entry. Under Alternative E, 79% of MSO habitat in the Monticello PA would be categorized as NSO or closed, which is 48% more than under Alternative A. This would protect MSO as well as other special status species in this cliff, desert shrub, and sagebrush habitat. Overall, Alternative E would have fewer adverse impacts on special status species than Alternative A because more acres of habitat would be closed or NSO to oil and gas leasing. Tables 4.121–4.123 list the number of acres of TES habitat within each of the RFD areas.

Table 4.121. Acres of Special Status Species Habitat in the Blanding Sub-basin Under Alternative E

Special Status Species	Standard Lease Terms	Controlled Surface Use	Controlled Surface Use and Timing Limitations	Timing Limitations	No surface Occupancy	Closed
MSO	0	0	0	0	0	0
Gunnison Sage-Grouse	0	122	0	0	0	0
Colorado River fish	19	0	0	0	880	124
SWFL	2,997	0	0	2,444	4,573	284
Bald Eagle	9,442	0	2,921	94,306	5,246	2,501

Table 4.122. Acres of Special Status Species Habitat in the Monument Upwarp Under Alternative E

Special Status Species	Standard Lease Terms	Controlled Surface Use	Controlled Surface Use and Timing Limitations	Timing Limitations	No Surface Occupancy	Closed
MSO	10,684	465	3	40,977	130	201,611
Gunnison Sage-Grouse	0	0	0	0	0	0
Colorado River fish	1	0	0	0	184	209
SWFL	656	27	75	1,331	1,318	3,255
Bald Eagle	2,243	686	3,749	14,894	2,479	44,157

Table 4.123. Acres of Special Status Species Habitat in the Paradox Fold and Fault Under Alternative E

Special Status Species	Standard Lease Terms	Controlled Surface Use	Controlled Surface Use and Timing Limitations	Timing Limitations	No Surface Occupancy	Closed
MSO	31	15,879	11	10,068	24,508	74,240
Gunnison Sage-Grouse	69	4,402	0	0	0	0
Colorado River fish	0	0	0	0	74	197
SWFL	96	1,231	2	381	1,663	577
Bald Eagle	209	10,266	15	33,370	80	21,231

4.3.15.2.7. Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Special Status Species

4.3.15.2.7.1. Alternatives A–D

Under Alternatives A through D, no areas within the Monticello PA would be managed as non-WSA areas with wilderness characteristics.

4.3.15.2.7.2. Alternative E

Under Alternative E, approximately 582,357 acres of non-WSA lands wilderness characteristics would be managed to preserve their wilderness values. Proposed decisions to protect wilderness values would include managing the areas under VRM I objectives, closing the area to oil and gas leasing and locatable mineral development, closing the areas to off-route OHV use and new road construction, designating the areas as ROW exclusion areas, and closing the areas to woodland harvest and wood gathering. These proposed decisions would have long-term beneficial impacts on special status species and their habitat by reducing the potential for surface disturbances, noise, and alteration of habitat.

4.3.15.2.8. Impacts of Recreation Decisions on Special Status Species

4.3.15.2.8.1. Alternative A

Under Alternative A, the San Juan River SRMA would restrict visitor use by issuing a limited number of river permits each year. Also, the Indian Creek SRMA would limit some camping to designated sites, which would reduce the surface disturbance associated with dispersed camping. These restrictions would reduce the adverse impacts of visitor traffic on special status species. There would, however, be adverse surface disturbance associated with the potential trampling and crushing of special status plant species by humans, horses, and vehicles. The surface disturbance associated with foot and vehicle traffic could also lead to the introduction of invasive plant species, with long-term adverse impacts on special status plant and animal habitats as discussed in previous sections. Additional impacts on special status species and their habitat would include direct and indirect disturbance of individual wildlife species by human visitors.

Wildlife species, birds in particular, are directly impacted by vehicle traffic and other anthropogenic noise. Traffic noise has been shown to directly interfere with bird vocal communication, which affects territorial behavior and mating success (Reijnen and Foppen, 1994). The San Juan River SRMA (10,203 acres) would allow 40,000 user/days per year, and vehicle camping would not be restricted. These stipulations would allow potential surface and noise disturbances, which would have long-term adverse impacts on special status species in the SRMA, as discussed in previous sections. The acreage of each vegetation type included in the SRMA is listed for each alternative in Table 4.170 in Section 4.3.17, Vegetation.

The Cedar Mesa Cultural SRMA (375,734 acres) would require pets to be leashed, camping only at campsites, and a total of 196 overnight visitors per day. This would reduce the adverse impacts of surface and noise disturbance associated with visitors. In Table 4.167 in Section 4.3.17 Vegetation, the acreage of each vegetation type included in the SRMA is listed in that table.

Under Alternative A, the Dark Canyon SRMA (30,820 acres) and the Indian Creek SRMA (89,271) are managed as part of a larger Canyon Basins SRMA (214,390 acres). There would be no limit on group size, camping location, or vehicle use. This could result in short- and long-term adverse impacts on special status species from surface and noise disturbances. In Tables 4.168 and 4.169 in Section 4.3.17, Vegetation, the acreage of each vegetation type included in the SRMA is listed for each alternative.

The White Canyon SRMA (2,828) would have no limit on group size, camping location, or vehicle use. This could result in short- and long-term adverse impacts on special status species due to surface and noise disturbance. In Table 4.153 in Section 4.3.17, Vegetation, the acreage of each vegetation type included in the SRMA is listed. Table 4.124 includes acres of federally listed species habitat in each of the SRMAs under Alternative A. Gunnison sage-grouse is not included in the table because none of the SRMAs overlap with Gunnison sage-grouse habitat.

Table 4.124. Acres of Federally Listed Species Habitat in each of the SRMAs Under Alternative A

SRMA	Bald Eagle	Federally Listed Fish	MSO	SWFL
Canyon Basins SRMA	59,799	0	245,465	2,931
Cedar Mesa SRMA	8,928	0	21,268	5,768
Dark Canyon	0	0	0	0
Grand Gulch Plateau	0	0	0	0
Indian Creek	0	0	0	0
San Juan River SRMA	12,642	825	0	4,346
White Canyon	0	0	0	0

Under this alternative, 33% of bald eagle habitat, 70% of MSO habitat, 57% of SWFL habitat, 49% of the federally listed fish habitat, and none of the Gunnison sage-grouse habitat would lie within the boundaries of proposed SRMAs.

4.3.15.2.8.2. Alternative B

Under Alternative B, the impacts of recreation management decisions on special status species would include those outlined below, as well as those discussed in Impacts Common to All Alternatives.

The San Juan River SRMA would allow 30,000 user/days per year, which would be 25% fewer visitors allowed per year than under Alternative A. Vehicle camping would be restricted to designated areas. These management decisions would result in less surface and noise disturbances to habitat than Alternative A, but there would still be long-term, adverse impacts on special status species in the SRMA as discussed in previous sections.

The Cedar Mesa Cultural SRMA would be available for livestock use and vegetation treatments, pets would be allowed on leash, dispersed camping would be allowed, and a total of 144 overnight visitors per day would be permitted. This represents a 27% reduction in visitors permitted than under Alternative A. Under Alternative B, the Dark Canyon SRMA would have a 15-private visitor per day limit and camping would be allowed in designated areas only. This would be a reduction in permitted visitation when compared with Alternative A, which would allow unlimited visitation. Permitted visitation could result in short and long-term, adverse affects on special status species from surface and noise disturbance, but to a lesser degree than under Alternative A.

In the Indian Creek SRMA, dispersed camping would not be allowed. This alternative would result in short and long-term, adverse impacts on special status species due to surface and noise disturbance associated with visitors, but to a lesser extent than under Alternative A because of the camping restrictions.

The White Canyon SRMA would limit use through a permit system. This could still result in short and long-term, adverse affects on special status species due to surface and noise disturbance, but to a lesser degree than under Alternative A. Table 4.125 includes acres of federally listed species habitat in each of the SRMAs under Alternative B. Gunnison sage-grouse is not included in the table because none of the proposed SRMAs overlap with Gunnison sage-grouse habitat.

Table 4.125. Alternative B-Acres of Federally Listed Species Habitat in each of the SRMAs

SRMA	Bald Eagle	Federally Listed Fish	MSO	SWFL
Canyon Basins SRMA	0	0	0	0
Cedar Mesa SRMA	0	0	0	0
Dark Canyon	846	0	30,820	351
Grand Gulch Plateau	7,737	0	17,330	4,061
Indian Creek	19,243	0	83,203	2,195
San Juan River SRMA	11,217	793	0	3,556
White Canyon	571	0	0	17

Under this alternative, 16% of bald eagle habitat in the Monticello PA would be included within proposed SRMAs (17% less than under Alternative A). Forty-seven percent of federally listed fish habitat would be included within SRMA boundaries (2% less than under Alternative A; 35% of MSO habitat would lie within SRMAs, (35% less than under Alternative A); and 44% of SWFL habitat would be included in SRMAs (13% less than under Alternative A).

Overall, this alternative would be likely to have less adverse impacts on special status species in SRMAs than Alternative A because of the increased protection afforded species within the proposed SRMAs.

4.3.15.2.8.3. Alternative C

Under Alternative C, the impacts of recreation management decisions on special status species would include following impacts in addition to those discussed in Impacts Common to All Alternatives.

The San Juan River SRMA would allow 40,000 user/days per year, which is the same number of users permitted under Alternative A. Unlike Alternative A, camping would be restricted to designated areas under this alternative. These stipulations would allow for less surface and noise disturbance than Alternative A, but there would still be some long-term, adverse impacts on special status species in the SRMA as discussed in previous sections.

Under Alternative C, the Cedar Mesa Cultural SRMA would be managed the same as under Alternative B with the following exceptions: woodland harvesting would be allowed, and a total of 180 overnight visitors per day would be permitted. Under this alternative, 8% fewer visitors would be allowed per day than under Alternative A which would reduce adverse impacts, however, there could be an increased level of surface disturbance related to woodland gathering and harvesting and/or noise-related disturbance compared with Alternatives A and B. Under Alternative C, the Dark Canyon SRMA management decisions would limit visitation to 20 private visitors per day, and camping would be allowed in designated areas only. This would result in short and long-term adverse impacts on special status species due to surface disturbances, but to a lesser extent than under Alternative A.

In the Indian Creek SRMA, dispersed camping would not be allowed except in designated dispersed camping zones (see Summary Table of Alternatives). This alternative would result in short and long-term, adverse impacts on special status species due to surface and noise disturbance associated with visitors, but to a lesser extent than under Alternative A because of the camping restrictions.

Under Alternative C, the impacts in on special status species in the White Canyon SRMA would be the same as under Alternative B.

The same number of acres of federally listed species habitat would be included in SRMAs under this alternative as under Alternative B; therefore, there would be the same impacts on federally listed species and their habitat under this alternative.

4.3.15.2.8.4. Alternative D

Under Alternative D, the impacts of recreation management decisions on special status species resources would include the following impacts, in addition to those discussed previously in Impacts Common to All Alternatives.

The San Juan River SRMA would allow 40,000 user/days per year, and vehicle camping would be restricted to designated areas in specified portions of the SRMA. These stipulations would potentially result in a similar level of surface disturbance as Alternative A, which would include long-term adverse impacts on special status species and their habitat in the SRMA, as discussed in previous sections.

Under Alternative D, the Cedar Mesa Cultural SRMA would be managed the same as under Alternative C with the exception that a total of 216 overnight visitors per day would be permitted. This could result in an increased level of surface and noise disturbance compared with Alternatives A, B, and C. Under Alternative D, the Dark Canyon SRMA would have no limit on the number of private visitors per day, and dispersed camping would be allowed in some areas. This would result in short- and long-term adverse impacts on special status species and their habitat due to surface and noise disturbance, but to a lesser extent than under Alternative A.

Under Alternative D, the impacts on special status species and their habitat in the Indian Creek SRMA would be the same as under Alternative A. Under Alternative D, the impacts on special status species and their habitat in the White Canyon SRMA would be the same as under Alternative A. Table 4.126 includes acres of federally listed species habitat in each of the SRMAs under Alternative D. Gunnison sage-grouse is not included in the table because none of the SRMAs overlap with Gunnison sage-grouse habitat.

Table 4.126. Acres of Federally Listed Species Habitat in each of the SRMAs Under Alternative D

SRMA	Bald Eagle	Federally Listed Fish	MSO	SWFL
Canyon Basins SRMA	0	0	0	0
Cedar Mesa SRMA	0	0	0	0
Dark Canyon	846	0	30,820	351
Grand Gulch Plateau	7,737	0	17,330	4,061
Indian Creek	19,243	0	83,203	2,195
San Juan River SRMA	7,767	544	0	2,711
White Canyon	571	0	0	17

Under this alternative, 16% of bald eagle habitat in the Monticello PA would be included in an SRMA, which is 17% less than under Alternative A. Thirty-two percent of federally listed fish habitat would be included within proposed SRMA boundaries (17% less than under Alternative A). Thirty-five percent of MSO habitat would be included in an SRMA (35% less than under Alternative A), and 41% of SWFL habitat would be included within the SRMAs (16% less than under Alternative A). Overall, this alternative is likely to have more adverse impacts on special status species within the proposed SRMAs than Alternative A because of the increased number of permitted visitors in some of the SRMAs and the reduction in habitat protection within the SRMAs.

4.3.15.2.8.5. Alternative E

Under Alternative E, the same number of acres of federally listed species habitat would be included in each of the SRMAs as under Alternative B, so the impacts of recreation management decisions on special status species would be the same as those discussed under Alternative B.

4.3.15.2.9. Impacts of Riparian Decisions on Special Status Species

4.3.15.2.9.1. Alternative A

Under Alternative A, impacts would be the same as discussed under Impacts Common to All Alternatives.

4.3.15.2.9.2. Alternative B

Under Alternative B, the impacts of riparian management decisions on special status species and their habitat would include the impacts outlined below, in addition to those discussed in Alternative A.

OHV routes in selected riparian areas would be closed in riparian areas determined to be Functioning at Risk if site-specific analysis shows that OHV use is contributing to the degradation. In addition, some riparian areas would be unavailable for livestock grazing, while others would be subject to seasonal restrictions and forage utilization limits. These restrictions would lessen the number of acres of special status species habitat subject to the adverse impacts of surface disturbance in special status riparian areas. It would also reduce the adverse impacts of human presence and noise associated with OHV use in special status riparian habitat. This alternative would be more beneficial to special status species and their habitat than Alternatives A and D, and would have the same impacts as Alternative C.

4.3.15.2.9.3. Alternative C

Under Alternative C, the impacts of riparian management decisions on special status species and their habitat would be the same as for Alternative B. This alternative would be more beneficial to special status species and their habitat than Alternatives A and D, and would have the same impacts as Alternative B.

4.3.15.2.9.4. Alternative D

Alternative D would be less beneficial to special status species and their habitat than Alternatives B and C, and would have the same impacts as Alternative A.

4.3.15.2.9.5. Alternative E

Under Alternative E, the impacts of riparian management decisions on special status species and their habitat would be the same as for Alternative B because the management decisions are the same. This alternative would be more beneficial to special status species and their habitat than Alternatives A and D, and would have the same impacts as Alternative B.

4.3.15.2.10. Impacts of Soils and Watershed Decisions on Special Status Species

4.3.15.2.10.1. Alternative A

Under Alternative A, impacts would be the same as Impacts Common to All Alternatives.

4.3.15.2.10.2. Alternatives B and E

Under Alternatives B and E, the impacts of soils and watershed management decisions on special status species and their habitat would include the following impacts in addition to those discussed in Alternative A. Surface-disturbing activities would not be permitted on slopes greater than 40%. This would exclude 87,456 acres (approximately 5%) of land in the Monticello PA from surface disturbance, which would eliminate the adverse impacts associated with surface disturbance on special status plant and animal species living on slopes greater than 40%. If surface-disturbing activities cannot be avoided on slopes between 21 and 40%, a plan including an erosion-control strategy and a BLM-approved survey and design would be required. This would provide additional protection for special status plant and animal species on 218,296 acres of land in the Monticello PA. Therefore, the actions associated with these alternatives would have less adverse impact on special status species and their habitat than Alternatives A, C, and D. Table 4.127 provides the total number of acres of each vegetation type in the Monticello PA with slopes greater than 40%. Special status species in pinyon-juniper woodland habitat would benefit from the large number of acres protected from surface-disturbing activities due to slope use restrictions.

Table 4.127. Acres of Each Vegetation Type by Slope Steepness Category

Vegetation Type	Acres of slopes >40%	Acres of slopes 21-40%
Conifer/Mountain Shrub	1,323	2,662
Desert Shrub	6,391	27,473
Invasive Plants and Weeds	43	213
Pinyon-Juniper Woodland	77,332	180,954
Riparian/Wetland	683	1,461
Sagebrush/ Perennial Grassland	1,684	5,533
Total	**87,456**	**218,296**

4.3.15.2.10.3. Alternative C

Under Alternative C, the impacts of soils and watershed management decisions on special status plant and animal species would include impacts outlined below, in addition to those discussed in Alternative A.

Surface-disturbing activities would not be permitted on slopes greater than 40% unless it is determined that it would cause undue or unnecessary degradation to pursue other placement alternatives. Therefore, surface disturbance allowed under this alternative could cause direct and indirect adverse impacts on special status plant and animal species and their habitat on up to 87,456 acres of steep slopes in the Monticello PA. If surface-disturbing activities cannot be avoided on slopes between 21 and 40%, a plan including an erosion control strategy and a BLM-

approved survey and design would be required. Therefore, the actions associated with this alternative would have less adverse impact on special status plant and animal species and their habitat than Alternatives A, and D, but more than Alternative B.

4.3.15.2.10.4. Alternative D

Under Alternative D, the impacts of soils and watershed management decisions on special status plant and animal species and their habitat would require a plan including an erosion control strategy and a BLM-approved survey and design for development of land with a slope greater than 40%. This alternative would have greater adverse impacts on special status plant and animal species and their habitat than Alternative B and C. The required erosion and design plan would help mitigate the adverse impacts of surface disturbance on special status plant and animal species and their habitat, located in and down slope of steep development areas. Therefore this alternative would have less adverse impacts on special status plant and animal species and their habitat than Alternative A.

4.3.15.2.11. Impacts of Special Designations Decisions on Special Status Species

4.3.15.2.11.1. Alternative A

Under Alternative A, 488,616 acres of ACECs would be designated, and approximately 94.8 miles of river segments along the San Juan and Colorado Rivers were determined to be suitable for WSR eligibility determination (and protected until eligibility determinations were made). Of these acres 106,569 acres would be available for oil and gas leasing under Standard and Timing and Controlled Surface Use leasing stipulations. This is the second largest acreage that would be available within ACECs and WSRs of all the alternatives because numerous ACECs would be proposed under this alternative (see Table 4.102 for a comparison of ACEC designations by alternative). As noted above, ACEC and WSR designations would generally have beneficial impacts on special status species except in areas that are available for development. Specific impacts from oil and gas development to special designation areas are discussed above in Section 4.3.14, Special Designations.

The number of acres of each habitat type in each of the ACECs is shown in Tables 4.172–4.183 in Section 4.3.17, Vegetation. Table 4.128 below includes acres of federally listed species habitat in each of the ACECs under Alternative A. The Gunnison sage-grouse is not included in the table because none of the SRMAs overlap with the sage-grouse habitat.

Under this alternative, 22% of bald eagle habitat, 29% of MSO habitat, 25% of SWFL habitat, and none of the federally listed fish habitat would be included in an ACEC.

Table 4.128. Acres of Federally Listed Species Habitat in Each of the ACECs Under Alternative A

ACEC	Bald Eagle	Federally Listed Fish	MSO	SWFL
Alkali Ridge	25,072	0	0	357
Bridger Jack Mesa	135	0	6,260	3
Butler Wash	707	0	17,464	30
Cedar Mesa	1,327	0	13,390	3,615
Dark Canyon	3,351	0	61,660	354
Hovenweep	0	0	0	4
Indian Creek	4,260	0	8,510	577
Lavender Mesa	0	0	649	0
Lockhart Basin	0	0	0	0
San Juan River	0	0	0	0
Scenic Highway Corridor	16,328	0	1,719	517
Shay Canyon	2,897	0	0	247
Valley of the Gods	0	0	0	0
Total ACEC Acres	**54,077**	**0**	**109,652**	**5,704**

4.3.15.2.11.2. Alternative B

Under Alternative B, 521,141 acres of ACECs and approximately 92.4 miles of river segments were determined to be suitable for WSR recommendation. Of these acres, 147,706 acres would be available for oil and gas leasing. This is the largest number of acres that would be available within ACECs and along WSR segments of all the alternatives because this alternative (and Alternative E) proposes the most acreage for ACEC designation. Table 4.129 includes acres of federally listed species habitat in each of the ACECs under Alternative B. The Gunnison sage-grouse is not included in the table because none of the SRMAs overlap with sage-grouse habitat.

Under this alternative, 20% of bald eagle habitat in the Monticello PA would be included in an ACEC, which is 2% less than under Alternative A. There would be 48% of federally listed fish habitat included in ACECs under this alternative, which is 48% more than under Alternative A. Forty-two percent of MSO habitat would be included in an ACEC, which is 13% more than under Alternative A. Forty-one percent of SWFL habitat would be included in an ACEC, which is 16% more than under Alternative A. Overall, this alternative would be more beneficial to these federally listed species and their habitat than Alternative A because more acres of habitat would be subject to disturbance restrictions associated with ACECs.

Table 4.129. Acres of Federally Listed Species Habitat in Each of the ACECs Under Alternative B

ACEC	Bald Eagle	Federally Listed Fish	MSO	SWFL
Alkali Ridge	25,072	0	0	357
Bridger Jack Mesa	165	0	6,225	3
Butler Wash	707	0	17,365	28
Cedar Mesa	7,407	0	15,084	3,588
Dark Canyon	3,351	0	61,660	354
Hovenweep	0	0	0	4
Indian Creek	4,260	0	8,510	577
Lavender Mesa	0	0	649	0
Lockhart Basin	1,987	273	48,018	1,589
San Juan River	7,767	544	0	2,711
Scenic Highway Corridor	0	0	0	0
Shay Canyon	116	0	0	20
Valley of the Gods	0	0	0	81
Total ACEC acres	**50,832**	**817**	**157,511**	**9,312**

4.3.15.2.11.3. Alternative C

Under this alternative, 76,764 acres would be designated as an ACEC, which would be approximately 417,343 acres less than proposed under Alternative A. Approximately 18.4 miles of river segments were determined to be suitable for WSR recommendation under this alternative. Within proposed ACECs, 34,885 acres would be available for oil and gas leasing. The ACECs, their proposed acreages, and impacts to special status species are discussed below.

Alkali Ridge (39,196 acres): Under this alternative**,** the impacts of management decisions on special status species and habitat would be the same as those discussed for Alternative B.

Bridger Jack Mesa: Under this alternative**,** this area would not be managed as an ACEC. Therefore, the management decisions under Alternatives A and B would have fewer adverse impacts on special status species and habitat than under this alternative.

Butler Wash North: Under this alternative**,** this area would not be managed as an ACEC. Therefore, the management decisions under Alternatives A and B would have fewer adverse impacts on special status species and habitat than under this alternative.

Cedar Mesa: Under this alternative**,** this area would be managed as a 475,734-acre C-SRMA rather than an ACEC. Therefore, the management decisions under Alternatives A and B would have fewer adverse impacts on special status species and habitat than under this alternative.

Dark Canyon: Under this alternative**,** this area would not be managed as an ACEC. Therefore, the management decisions under Alternatives A and B would have fewer adverse impacts on special status species and habitat than under this alternative.

Hovenweep (2,439 acres): This ACEC would be managed with the same restrictions as under Alternative A. Therefore, the impacts of this alternative would be the same.

Indian Creek (3,905 acres): This ACEC would be managed with the same restrictions as under Alternative A. Therefore, the types of impacts of this alternative would be the same. However, under this alternative, the ACEC would be 9,192 acres smaller than under alternative A, resulting in less acres in the Monticello PA protected by the surface-disturbing restrictions prescribed under this alternative than under Alternatives A and B.

Lockhart Basin: Under this alternative**,** this area would not be managed as an ACEC. Therefore, the management decisions under Alternatives A and B would have fewer adverse impacts on special status species and habitat than under this alternative.

Lavender Mesa (649 acres): This ACEC would be managed with the same restrictions as under Alternative A.

San Juan River (7,590 acres) *and* ***Shay Canyon (119 acres):*** These ACECs would be managed with the same restrictions as under Alternative B.

Valley of the Gods (22,863 acres): This ACEC would be managed with the same decisions and impacts to special status species as discussed under Alternative B.

Table 4.130 below includes acres of federally listed species habitat in each of the ACECs under Alternative C. The Gunnison sage-grouse is not included in the table because none of the SRMAs overlap with sage-grouse habitat.

Table 4.130. Acres of Federally Listed Species Habitat in Each of the ACECs Under Alternative C

ACEC	Bald Eagle	Federally Listed Fish	MSO	SWFL
Alkali Ridge	25,072	0	0	357
Bridger Jack Mesa	0	0	0	0
Butler Wash	0	0	0	0
Cedar Mesa	0	0	0	0
Dark Canyon	0	0	0	0
Hovenweep	0	0	0	4
Indian Creek	1,760	0	3,905	298
Lavender Mesa	0	0	649	0
Lockhart Basin	0	0	0	0
San Juan River	7,767	544	0	2,711
Scenic Highway Corridor	0	0	0	0
Shay Canyon	116	0	0	20
Valley of the Gods	0	0	0	81
Total ACEC acres	**34,715**	**544**	**4,554**	**3,471**

Under this alternative, 14% of bald eagle habitat in the Monticello PA would be included in an ACEC, which is 8% less than under Alternative A. Thirty-two percent of federally listed fish habitat would be included in ACECs under this alternative, which is 32% more than under Alternative A. One percent of MSO habitat would be included in an ACEC, which is 28% less than under Alternative A. Fifteen percent of SWFL habitat would be included in an ACEC, which is 10% less than under Alternative A. Overall, this alternative would be less beneficial to these federally listed species and their habitat than Alternative A because fewer acres of habitat would be subject to disturbance restrictions associated with ACECs.

4.3.15.2.11.4. Alternative D

Under this alternative, no ACECs would be proposed for designation and no river miles would be eligible for suitability determination or recommendation as WSR segments within the Monticello PA.

Alkali Ridge, Bridger Jack Mesa, Butler Wash North, Dark Canyon, Indian Creek, Cedar Mesa, Indian Creek, Hovenweep, San Juan River, Scenic Highway, Lockhart Basin, Lavender Mesa, Valley of the Gods, and Shay Canyon: Under this alternative**,** these areas would not be managed as ACECs. Therefore, the management decisions under Alternatives A, B, and C would have fewer adverse impacts on special status species and habitat than under this alternative.

Cedar Mesa (375,734 acres): Though not designated as an ACEC, this area would be managed with the same restrictions as under Alternative C (as a C-SRMA). Therefore, the management decisions under Alternative A would have fewer adverse impacts on special status species and habitat than under this alternative because more habitats would be protected under Alternative A. Alternative D would be the least beneficial for special status species and their habitat.

4.3.15.2.11.5. Alternative E

Under Alternative E, the impacts of special designations management decisions on special status species and their habitat would be the same those discussed under Alternative B.

4.3.15.2.12. Impacts of Special Status Species Decisions on Special Status Species

4.3.15.2.12.1. Alternative A

Under Alternative A, the impacts of special status species management decisions on special status species would include those discussed in Section 4.3.15.1, Impacts Common to All Alternatives.

4.3.15.2.12.2. Alternatives B and E

Under Alternatives B and E, the impacts of special status species management decisions on special status species and habitat would include the impacts outlined below in addition to those discussed in Section 4.3.15.1, Impacts Common to All Alternatives.

For the Gunnison sage-grouse, year-round crucial habitat would be designated on 4,524 acres of BLM land in the Monticello PA. This crucial habitat is 3% of estimated sagebrush habitat in the Monticello PA. In sage-grouse lek habitat (defined as the 2-mile radius of an active strutting ground), there would be no surface-disturbing geophysical activities, with the exception of seasonal grazing (closed from March 20 to May 15), allowed. These restrictions would help

mitigate the adverse impacts of surface disturbance on vegetation resources in lek habitat. Within six miles of lek habitat, sagebrush treatments, oil and gas leasing with standard stipulations, and seasonal grazing would be allowed. The construction of fences, power lines, wind-power turbines, or other tall structures would not be permitted. This would help reduce the predation of sage-grouse by raptors and the collision of sage-grouse with fences. The allowance of sagebrush treatments would help mitigate the adverse impacts of surface-disturbing activities on special status species and habitat within the 6-mile buffer of the center of the lek. Because of these restrictions, there would be fewer adverse impacts on Gunnison sage-grouse and other sagebrush special status species associated with these alternatives than with Alternative A.

Under this alternative, the habitat in Arch Canyon for MSO and the flannelmouth sucker would be closed to OHV use, and group size would be limited to 10 individuals and 2 groups per day. These restrictions would help mitigate the impacts of noise disturbance on MSO and other cliff-dwelling special status species in the closure area. The OHV closures would provide the opportunity for the reestablishment of riparian vegetation on closed OHV routes, and reduce the runoff, stream sedimentation, and erosion associated with OHV use that could adversely impact special status fish species habitat.

4.3.15.2.12.3. Alternative C

Under Alternative C, the impacts of special status species management decisions on special status species and habitat would be the same as those discussed in Alternative B except that disturbance would not be allowed within a 0.6-mile radius from the center of a lek. The potential disturbance associated with grazing in and around sage-grouse leks associated with this change in designation would result in this alternative having more adverse impacts on vegetation resources than Alternative B. The construction of fences, power lines, or other tall structures would be avoided. This could help reduce the predation of sage-grouse by raptors. Because of these restrictions, there would be fewer adverse impacts on special status plant and animal species in sagebrush habitat associated with this alternative than with Alternative A.

Under this alternative, portions of the habitat in Arch Canyon for MSO and the flannelmouth sucker would be closed to OHV use, and group size would be limited to 12 vehicles and 2 groups per day. This would provide more protection for cliff-dwelling wildlife species and special status fish than the management activities proposed under Alternative A.

4.3.15.2.12.4. Alternative D

Under Alternative D, the impacts of special status species management decisions on special status species in sagebrush habitat would include the impacts outlined below, in addition to those discussed in Section 4.3.15.1, Impacts Common to All Alternatives.

For Gunnison sage-grouse, year-round crucial habitat would be designated on 2,877 acres of BLM land in the Monticello PA. In lek habitat (defined as a 0.25-mile radius of an active strutting ground), there would be no surface-disturbing activities allowed, with the exception of seasonal grazing. These restrictions would help mitigate the adverse impacts of seasonal grazing on special status species and sagebrush vegetation communities in lek habitat. Within 6 miles of the lek center, sagebrush treatments, fence construction, and oil and gas leasing with standard stipulations and seasonal grazing would be allowed. The allowance of sagebrush treatments

would help mitigate the adverse impacts of surface-disturbing activities on special status species and habitat within the 6-mile buffer of the lek center.

Under this alternative, the habitat in Arch Canyon for MSO and the flannelmouth sucker would be open to OHV use on designated trails year-round, and commercial motorized group size would be limited to 12 vehicles and 2 trips per day. This would provide more protection for cliff-dwelling wildlife species and special status fish than the management activities proposed under Alternative A.

4.3.15.2.13. Impacts of Travel Decisions on Special Status Species

4.3.15.2.13.1. Alternative A

Under Alternative A, there are a total of 611,310 acres open to OHV use which is more than under any of the other alternatives. Under this alternative, there are 540,260 acres with seasonal restrictions on OHV use off of existing trails to protect bighorn sheep lambing and rutting areas. There are an additional 789,170 acres where OHV use is limited to existing trails. These restrictions would indirectly benefit special status wildlife species using the restricted areas. The number of acres of each habitat type classified as closed or limited OHV use by alternative is located in Tables 4.184–4.186 in Section 4.3.17, Vegetation.

This alternative has 276,430 acres closed to OHV use, which is more than alternative D, but less than Alternatives B, C, and E. These closures would decrease the adverse impacts of this alternative on special status species and their habitat in these protected areas by eliminating surface and noise disturbance associated with OHV use. A reduction in miles of available OHV trails would lead to a reduction in habitat fragmentation for special status wildlife species. A list of closed areas is located in the Summary Table of Alternatives. Closed areas include some ACECs and vegetation study areas. Table 4.131 provides acres of special status species habitat that are open to OHV use, closed to OHV use, or limited to designated trails under this alternative.

Table 4.131. Acres of Special Status Species Habitat by OHV Usage Status Under Alternative A

OHV Status	Bald Eagle	Federally Listed Fish	MSO	SWFL	Gunnison Sage-Grouse
Closed	16,275	371	101,801	3,568	0
Limited	184,785	311	122,529	6,335	0
Open	50,134	483	154,610	13,473	4,593

Under this alternative, 7% of bald eagle habitat, 27% of MSO habitat, 16% of SWFL habitat, 22% of the federally listed fish habitat, and none of Gunnison sage-grouse habitat would be closed to OHV use.

4.3.15.2.13.2. Alternatives B and E

Under Alternatives B and E, the impacts of travel management decisions on special status species would include the following impacts in addition to those discussed in Alternative A. No

acres would be open to cross-country OHV travel under these alternatives, which is 100% less than under Alternative A. Under Alternative B, there would be 1,359,417 acres with OHV use limited to designated routes; Alternative E would designate 812,679 acres for limited to designated OHV routes. Compared to Alternative A, there would be a substantial increase in OHV restrictions under these two alternatives because Alternative A would propose 789,170 acres for OHV travel along designated and existing routes.

Alternative B would close 423,698 acres to OHV use, which would be 147,268 acres (1.5 times more acreage) than under Alternative A. Alternative E would close 970,436 acres to OHV use (694,006 acres or 3.5 times more acreage than Alternative A). These closures would decrease the adverse impacts of these alternatives on special status species and their habitat in these protected areas by eliminating noise and surface disturbance associated with OHV use. A list of closed areas is located in the Summary of Alternatives, Table 2.1. Designated OHV Closed areas include vegetation study areas, some SRMAs, some CSMAs and some WSAs. This action would protect more acres of ecologically important special status species habitat from the surface disturbance and weed spread associated with OHV use than Alternative A. Table 4.132 provides acres of special status species habitat that would be open to OHV use, closed to OHV use, or limited to designated routes under this alternative.

Table 4.132. Acres of Special Status Species Habitat by OHV Usage Status Under Alternatives B and E

OHV Status	Bald Eagle	Federally Listed Fish	MSO	SWFL	Gunnison Sage-Grouse
Closed	15,347	117	116,645	4,020	4,593
Limited	235,163	1,018	262,107	18,949	0
Open	0	0	0	0	0

Under these alternatives, 6% of bald eagle habitat in the Monticello PA would be closed to OHV use, which is 1% less than under Alternative A. Seven percent of federally listed fish habitat would be closed, which is 15% less than under Alternative A. Thirty-one percent of MSO habitat would be closed to OHV use, which is 4% more than under Alternative A. Eighteen percent of SWFL habitat would be closed, which is 2% more than under Alternative A. One hundred percent of Gunnison sage-grouse habitat would be closed, which is 100% more than under Alternative A.

The impacts of these alternatives are comparable to Alternative C impacts. There are fewer acres of special status species habitat subject to adverse surface-disturbing impacts, which contribute to habitat fragmentation, under this alternative than under Alternative A or D.

4.3.15.2.13.3. Alternative C

Under Alternative C, the impacts of travel management decisions on special status species and their habitat would include the following impacts in addition to those discussed in Alternative A. There are a total of 2,311 acres open to OHV use under this alternative, which is 608,999 acres (99%) less than under Alternative A. Note that the proposed open OHV area would be in an existing OHV play area, already disturbed and impacted by previous and current use (see Section 4.3.10.3.16, Impacts of Travel Decisions on Recreation), so the impacts to special status species

would be minor. There would be 1,362,142 acres within which OHV use would be limited to designated routes. This would be a 58% increase in acreage, when compared to Alternative A.

This alternative would close 418,667 acres to OHV use, which is 142,237 acres (1.5 times more acreage) than Alternative A. These closures would decrease the adverse impacts of this alternative on native vegetation in these protected areas by eliminating surface disturbance associated with OHV use. A list of closed areas is located in the Summary Table of Alternatives, Table 2.1. Closed areas include vegetation study areas, some SRMAs, some CSMAs, and some WSAs. This action helps protect more acres of ecologically important special status species habitat from the surface disturbance and weed spread associated with OHV use than Alternative A. Table 4.133 below provides acreage of special status species habitat that is open to OHV use, closed to OHV use, or limited to designated trails under this alternative.

Table 4.133. Acres of Special Status Species Habitat by OHV Usage Status Under Alternative C

OHV Status	Bald Eagle	Federally Listed Fish	MSO	SWFL	Gunnison Sage-Grouse
Closed	13,567	124	112,737	3,719	0
Limited	235,388	1,011	263,801	19,114	4,593
Open	1,555	0	2,214	135	0

Under this alternative, 5% of bald eagle habitat in the Monticello PA would be closed to OHV use, which is 2% less than under Alternative A. Seven percent of federally listed fish habitat would be closed, which is 15% less than under Alternative A. Thirty percent of MSO habitat would be closed to OHV use, which is 3% more than under Alternative A. Sixteen percent of SWFL habitat would be closed, which is the same as under Alternative A. None of the Gunnison sage-grouse habitat would be closed, which is the same as under Alternative A. There are fewer acres of special status species habitat subject to adverse surface-disturbing impacts under this alternative than under Alternative A or D.

4.3.15.2.13.4. Alternative D

Under Alternative D, the impacts of travel management decisions on special status species and their habitat would include the impacts outlined below, in addition to those discussed in Alternative A.

There are a total of 2,311 acres open to OHV use under this alternative (the same as discussed under Alternative C), which is 608,999 acres (99%) less than under Alternative A. Approximately 1,780,807 acres of the Monticello PA would limit OHV travel to designated routes. This would be an increase of 991,637 acres or over 2 times more acreage than under Alternative A.

Under this alternative, no acres within the Monticello PA would be closed to OHV use, which is 276,430 acres (100%) less than under Alternative A. Table 4.134 below provides acres of special status species habitat that are open to OHV use, closed to OHV use, or limited to designated trails under this alternative.

Table 4.134. Acres of Special Status Species Habitat by OHV Usage Status Under Alternative D

OHV Status	Bald Eagle	Federally Listed Fish	MSO	SWFL	Gunnison Sage-Grouse
Closed	0	0	0	0	0
Limited	248,955	1,105	376,538	22,834	4,593
Open	1,555	0	2,214	135	0

Under this alternative, there would be no special status species habitat closed to OHV use, which is 34% less acreage than under Alternative A. The elimination of OHV closured areas under this alternative would have greater adverse impacts on special status species than the impacts under Alternatives A, B, and C.

4.3.15.2.14. Impacts of Vegetation Decisions on Special Status Species

4.3.15.2.14.1. Alternative A

Under Alternative A, 232,130 acres of land treatments per year would be continued. This treatment decision would be substantially greater than under any of the other alternatives. Impacts are discussed in Management Common to All. Vegetation treatments for each alternative by vegetation type are provided in Table 4.175 in Section 4.3.17, Vegetation.

4.3.15.2.14.2. Alternative B

Under Alternative B, there would be 7,600 acres of vegetation treatments per year, which is about 50% fewer acres of treatment per year than under Alternative A. In general, these treatment decisions would likely have more beneficial impacts on special status species and habitat than Alternative A because of the increased likelihood of successful vegetation treatments due to the concentration of efforts in specified vegetation communities.

4.3.15.2.14.3. Alternative C

Under Alternative C, the impacts of vegetation management decisions on vegetation resources would include the following impacts in addition to those discussed in Impacts Common to All Alternatives. There would be 9,300 acres of vegetation treatments per year under this alternative, which is 40% fewer acres of treatment per year than under Alternative A. The short-term, adverse impacts of trampling and crushing vegetation associated with treatment would be substantially reduced compared to Alternative A. There are fewer long-term beneficial impacts to special status species and habitat under this alternative than under Alternative A because fewer acres would receive vegetation treatments.

4.3.15.2.14.4. Alternative D

Under Alternative D, the impacts of vegetation management decisions on special status species would include the impacts outlined below, in addition to those discussed in Impacts Common to All Alternatives.

There would be 11,300 acres of vegetation treatments under this alternative, which is 27% fewer acres of treatment than under Alternative A.

There are fewer, short-term adverse impacts associated with this alternative than Alternative A because fewer acres are open to trampling and disturbance associated with vegetation treatments. There are more long-term beneficial impacts for special status species and habitat under this alternative than under Alternatives B or C because a greater number of acres would receive vegetation treatments.

4.3.15.2.14.5. Alternative E

Under Alternative E, the impacts to species would be the same as discussed under B, except that approximately 582,357 acres within the planning area would have restrictions on vegetation treatments in order to preserve non-WSA wilderness characteristics. These areas would be managed under VRM I objectives, which would limit the degree of treatment-related surface disturbances. The impacts of limiting vegetation treatments would be beneficial in the short- and long-term based on the reduced potential for trampling of species habitat, and the reduced potential for invasive species establishment and spread from treatment-related surface disturbances. Compared to Alternative A, this alternative would have more beneficial long term impacts on special status species because more potential habitat would be protected within the non-WSA wilderness characteristics areas.

4.3.15.2.15. Impacts of Visual Resource Decisions on Special Status Species

4.3.15.2.15.1. Alternative A

Alternative A would have the third largest area (726,687 acres) subject to VRM Class I or II resource objective restrictions. It would have the third largest area (1,054,681 acres) subject to VRM Class III or IV resource objectives restrictions (see Map 55 for Alternative A VRM class designations). Because very limited and limited changes to scenic quality would be allowed in areas designated as VRM Class I or II, this alternative would have the third most acres protected from activities that could adversely affect special status plant and wildlife individuals and their suitable habitat.

The number of acres of each habitat type in each of the VRM classes is located in Tables 4.190–4.193 in Section 4.3.17, Vegetation. Table 4.135 contains the number of acres of federally listed species habitat located in each VRM class under this alternative.

Table 4.135. Acres of Federally Listed Species Habitat by VRM Class Under Alternative A

VRM Class	Bald Eagle	Federally Listed Fish	MSO	SWFL	Gunnison Sage-Grouse
I	34,773	435	95,389	4,823	0
II	50,266	592	121,354	9,148	44
III	92,278	0	69,586	6,135	21
IV	72,852	0	91,570	2,729	4,528

Under this alternative, 34% of bald eagle habitat, 57% of MSO habitat, 61% of SWFL habitat, 100% of the federally listed fish habitat, and 1% of Gunnison sage-grouse habitat would be in areas managed as VRM I or II.

4.3.15.2.15.2. Alternative B

Under Alternative B, the impacts of visual resource management decisions on special status species and habitat would include the impacts outlined below, as well as those discussed in Impacts Common to All Alternatives.

Some ACECs would also be managed under VRM Class I or II objectives. This alternative would have the second largest area (748,309 acres) subject to VRM I or II restrictions on impacts to scenic quality. It would have the second smallest area (1,034,813 acres) subject to VRM III or IV restrictions (see Map 56 for Alternative B VRM designations). Because very limited and limited management activities would be allowed in areas designated as VRM I or II, this alternative would have the second highest number of acres protected from activities that could adversely affect special status plant and wildlife individuals and their suitable habitat. Table 4.136 contains the number of acres of federally listed species habitat located in each VRM class under this alternative.

Table 4.136. Acres of Federally Listed Species Habitat by VRM Class Under Alternative B

VRM Class	Bald Eagle	Federally Listed Fish	MSO	SWFL	Gunnison Sage-Grouse
I	20,385	612	165,817	5,978	0
II	58,908	273	67,740	6,811	44
III	98,276	221	63,607	7,463	21
IV	72,695	0	81,374	2,645	4,528

Under this alternative, 32% of bald eagle habitat in the Monticello PA would be in areas managed under VRM Class I or II objectives (2% less than under Alternative A); 80% of federally listed fish habitat would be included in VRM Class I or II designated areas (20% less than under Alternative A); 62% of MSO habitat would be included in be in areas managed under VRM Class I or II objectives (5% more than under Alternative A); and 56% of SWFL habitat would be included in VRM Class I or II designated areas (5% less than under Alternative A). One percent of Gunnison sage-grouse habitat would lie within areas managed under VRM I or II objectives, which would be the same as Alternative A. Overall, this alternative would be slightly less beneficial to these federally listed species and their habitat than Alternative A because fewer acres of potential habitat would lie within the more-protective VRM Class I and II designated areas.

4.3.15.2.15.3. Alternative C

Under Alternative C, the impacts of visual resource management decisions on special status species and habitat would include those discussed in Management Common to All, with additional impacts from specified ACECs managed as VRM class I or II. Alternative C would have the fourth largest area (557,180 acres) subject to VRM Class I or II restrictions. It would

have the second largest area (1,225,915 acres) subject to VRM III or IV restrictions (see Map 57 for VRM designations under Alternative C). Because VRM Class I and II objectives would limit surface-disturbance-related impacts to existing scenic quality, this alternative would have the fourth largest number of acres protected from activities that could adversely affect special status plant and wildlife individuals and their suitable habitat. Table 4.137 contains the number of acres of federally listed species habitat located in each VRM class under this alternative.

Table 4.137. Acres of Federally Listed Species Habitat by VRM Class Under Alternative C

VRM Class	Bald Eagle	Federally Listed Fish	MSO	SWFL	Gunnison Sage-Grouse
I	19,609	538	121,198	4,381	0
II	32,928	342	51,846	5,527	0
III	81,207	225	124,146	8,894	65
IV	116,519	0	81,328	4,095	4,528

Under this alternative, 21% of bald eagle habitat in the Monticello PA would be in areas managed under VRM Class I or II objectives, which is 13% less than under Alternative A. Eighty percent of federally listed fish habitat would be included in VRM Class I or II designated areas under this alternative (20% less than under Alternative A). Forty-six percent of MSO habitat would be included in be in areas managed under VRM Class I or II objectives (11% less than under Alternative A). Forty-three percent of SWFL habitat would be included in VRM Class I or II designated areas (18% less than under Alternative A). None of the Gunnison sage-grouse habitat would be managed under VRM I or II objectives (1% less than under Alternative A). Overall, this alternative would be less beneficial to these federally listed species and their habitat than Alternative A because fewer acres of habitat would be subject to disturbance restrictions associated with VRM Class I and II objectives.

4.3.15.2.15.4. Alternative D

Under Alternative D, the impacts of visual resource management decisions on special status species and habitat would include those discussed in Impacts Common to All Alternatives. This alternative would have the smallest area (399,261 acres) subject to VRM Class I and II objective restrictions. It would have the largest area (1,383,860 acres) designated as VRM Class III or IV, with the most area managed to allow moderate to major surface disturbance impacts to visual resources and species habitat (see Map 58 for Alternative D VRM designations). This alternative would have the fewest acres protected (under VRM Class I and II objectives) from activities that could adversely affect special status plant and wildlife individuals and their suitable habitat.

Table 4.138 contains the number of acres of federally listed species habitat located in each VRM class under this alternative.

Table 4.138. Acres of Federally Listed Species Habitat by VRM Class Under Alternative D

VRM Class	Bald Eagle	Federally Listed Fish	MSO	SWFL	Gunnison Sage-Grouse
I	10,686	0	115,708	3,159	0
II	10,501	823	0	3,593	0
III	114,650	236	181,364	12,381	65
IV	114,557	0	81,342	3,722	4,528

Under this alternative, 8% of bald eagle habitat in the Monticello PA would be in areas managed as VRM class I or II (1% more than under Alternative A). Seventy-four percent of federally listed fish habitat would be included in VRM I or II under this alternative, (26% less than under Alternative A). Thirty-one percent of MSO habitat would be included in be in areas managed as VRM I or II (26% less than under Alternative A). Thirty percent of SWFL habitat would be included in VRM I or II (31% less than under Alternative A). None of the Gunnison sage-grouse habitat would be managed as VRM I or II (1% less than under Alternative A). Overall, this alternative would be less beneficial to these federally listed species and their habitat than Alternatives A, B, or C because fewer acres of habitat would be subject to disturbance restrictions associated with VRM I and II.

4.3.15.2.15.5. Alternative E

Under Alternative E, approximately 582,357 acres of non-WSA lands with wilderness characteristics would be managed to preserve their wilderness values. Management would include designating these areas as VRM I and limiting surface disturbances to those allowed under this class objective. Table 4.139 shows the acres of special status species habitat by VRM class for Alternative E.

Table 4.139. Acres of Federally Listed Species Habitat by VRM Class Under Alternative E

VRM Class	Bald Eagle	Federally Listed Fish	MSO	SWFL	Gunnison Sage-Grouse
I	68,396	612	300,524	9,500	0
II	43,420	272	23,529	4,204	44
III	74,634	221	26,728	4,618	21
IV	59,737	0	27,523	2,081	4,528

Alternative E would have the most acreage managed under VRM Class I and II objectives (1,109,848), and the least area managed under VRM Class III and IV objectives (671,828 acres). This would have the greatest beneficial impact on special status species when compared to Alternative A and the other action alternatives, because of the likelihood for habitat preservation through restrictions on surface disturbances. Approximately 45% of bald eagle habitat would lie within VRM Class I and II designated areas, an increase of 11% when compared to Alternative

A. Also managed as VRM Class I and II would be approximately 80% of listed fish species habitat (a decrease of 20% compared to Alternative A), 86% of MSO habitat (a 29% increase compared to Alternative A), 67% of SWFL habitat (a 6% increase compared to Alternative A), and 1% of sage-grouse habitat (identical to Alternative A).

4.3.15.2.16. Impacts of Wildlife and Fisheries Decisions on Special Status Species

4.3.15.2.16.1. Alternative A

Under Alternative A, seasonal protection would be in place on 329,750 acres from April 1 through July 15 for bighorn sheep lambing, and again from October 15 through December 31 for rutting. There would be 12,960 acres of crucial pronghorn habitat closed to certain surface-disturbing activities from May 15 through June 15 for fawning. There would be 197,550 acres of crucial deer winter habitat closed to certain surface-disturbing activities from December 15 through April 30 (see Chapter 2 Summary Table of Alternatives 2.1 for a list of activities). These closures would also protect special status wildlife species on 279,786 acres of habitat. Alternative A provides a total of 184 days of protection for bighorn sheep, 32 days for pronghorn, 137 days for deer, and no protection for elk (see Table 4.201). These restrictions would protect special status species and their associated habitat from direct human disturbance, noise, and surface-disturbing activities during those seasonal protection times.

Table 4.140 contains the number of acres of special status species habitat located in areas with big game seasonal restrictions under each of the management alternatives.

Table 4.140. Acres of Special Status Species Habitat Located in Areas with Big Game Seasonal Restrictions

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Bald Eagle	218,937	218,868	165,997	158,550	218,868
Critical Fish	0	286	13	0	286
MSO	59,171	325,172	155,093	104,393	325,172
Gunnison Sage-Grouse	0	2,778	2,456	0	2,778
SWFL	1,679	10,937	3,340	2,301	10,937

4.3.15.2.16.2. Alternatives B and E

Under Alternatives B and E, the impacts of wildlife and fisheries management decisions on special status species resources would include those discussed in Management Common to All Alternatives, as well as the restrictions in place for wildlife habitat during parts of the year (see Table 4.195). Seasonal wildlife protection areas would have special conditions for all land use activities with the exception of woodland harvest. Seasonal protection would be in place on 453,388 acres from April 1 through July 15 for bighorn sheep lambing, and again from October 15 through December 31 for rutting. There would be 29,365 acres of crucial pronghorn habitat closed to certain surface-disturbing activities from May 1 through June 15 for fawning. In addition, spring grazing (April 15–June 15) would be eliminated in allotments within pronghorn habitat. There would be 785,921 acres of crucial deer winter habitat closed to certain surface-

disturbing activities from November 1 through May 15. The final restriction would be on 191,173 acres of elk habitat from November 1 through May 15. These closures would also protect special status wildlife species on 558,041 acres of habitat (99% more than under Alternative A). These special conditions include no oil and gas leasing activities, no geophysical work, and no permitted or commercial OHV use.

Alternatives B and E also provide for longer seasonal wildlife protection, which would benefit special status species by providing for a longer period of reduced human disturbances from noise and surface-disturbing activities. Seasonal protection would be the same for bighorn sheep, and it would last 15 days longer for pronghorn fawning areas and 60 days longer for deer winter range areas than in Alternative A. There is no protection for elk habitat in Alternative A, versus 196 days of special conditions in Alternatives B and E (see Table 4.201).

4.3.15.2.16.3. Alternative C

Under Alternative C, the impacts of wildlife and fisheries management decisions on special status species and associated habitat would include those discussed in Management Common to All Alternatives, as well as the restrictions in place for wildlife habitat during parts of the year (see Table 4.196). Seasonal wildlife protection areas would have the same special conditions as under Alternative A, with the exception of OHV restrictions. Under this alternative, the number of OHV users may be limited. In addition, there would be 326,898 acres subject to special wildlife conditions, which is 17% more than under Alternative A. Alternative C provides for different lengths of time for seasonal restrictions. Seasonal protection would be 30 days fewer for bighorn sheep, 15 days more for pronghorn, 15 days more for deer, and 150 days more for elk than Alternative A (see Table 4.201). Because of these differences, this alternative would be less likely to adversely affect special status species and associated habitat in the wildlife protection areas of the Monticello PA than Alternative A.

4.3.15.2.16.4. Alternative D

Under Alternative D, the impacts of wildlife and fisheries management decisions on special status species and associated habitat would include those discussed in Management Common to All Alternatives, as well as the restrictions in place for wildlife habitat during parts of the year (see Table 4.197). Seasonal wildlife protection areas would have the same special conditions as under Alternative A, with the exception of OHV restrictions. Under this alternative, OHV use would only be allowed on designated routes. Additionally, there 265,244 acres would be subject to special wildlife conditions, (5% less than under Alternative A). Seasonal protection would be 45 days fewer for bighorn sheep, 15 days more for pronghorn, the same for deer, and 136 days longer for elk than Alternative A (see Table 4.201). Because of limitation of OHV use to designated trails, this alternative would be less likely to adversely affect special status species and habitat in the wildlife protection areas of the Monticello PA than Alternative A.

4.3.15.2.17. Impacts of Woodlands Decisions on Special Status Species

4.3.15.2.17.1. Alternative A

Under Alternative A, 1,309,894 acres would be open to woodland harvest and wood gathering. Of the five alternatives, this would have the largest area open to woodland harvest and wood

gathering, and therefore the greatest potential risk of disturbance to special status species utilizing the pinyon-juniper woodland habitat (see Table 4.106).

4.3.15.2.17.2. Alternative B

Under Alternative B, 730,074 acres would be open to woodland harvest and wood gathering. This would be 579,820 fewer acres (32% less) than Alternative A.

In addition, limitations on off-road travel and wood product use in the deer and elk winter range from November 1 through May 15 would do more to mitigate the short-term adverse impacts of woodland product collection and harvest on special status species and habitat than Alternative A. This alternative would have fewer short- and long-term beneficial impacts on special status species and habitat than Alternative A.

4.3.15.2.17.3. Alternatives C and D

Under Alternatives C and D, the same number of acres would be available for harvesting (841,938 acres), and the impacts of woodlands management decisions on special status species and habitat would include those discussed in Alternative A. In the area open to harvesting, there would be 597,086 acres of pinyon-juniper vegetation available for woodland harvesting (26% fewer acres than under Alternative A). These alternatives would have fewer short- and long-term adverse impacts on special status species and habitat than Alternative A.

4.3.15.2.17.4. Alternative E

Under Alternative E, the impacts of woodlands management decisions on special status species and habitat would be the same as Alternative B, except that 582,357 acres of non-WSA lands with wilderness characteristics would also be closed to woodland harvesting, thereby giving additional long-term beneficial, surface-disturbance-related protection to special status species and their potential habitat. Under this alternative, 548,477 acres would be open to and available for woodland harvesting (40% fewer acres than under Alternative A). Within the areas open to harvesting, approximately 73,428 acres would have pinyon-juniper coverage.

4.3.15.3. Mitigation Measures

The Best Management Practices described in the Management Common to All section in Chapter 2 and Appendixes A and I would serve to avoid and/or minimize impacts to special status species and habitat in the Monticello PA.

4.3.15.4. Unavoidable Adverse Impacts

There will be unavoidable adverse impacts to special status species and habitat in the Monticello PA resulting from surface-disturbing activities, recreation, and resource development activities associated with the resource management decisions detailed in the RMP and this EIS. Potentially adverse impacts include reductions in native forage due to trampling and grazing by wildlife and livestock; trampling and weed introduction by human visitors (motorized and non-motorized); permanent alteration of special status species habitat due to clearing activities such as oil-well pad installation and woodland harvest; and noise disturbance of special status species individuals associated with human presence.

4.3.15.5. SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

As discussed throughout this section, some of the short-term multiple uses of the Monticello PA are likely to impact or reduce special status species and/or their habitat. These uses include oil and gas development, ROW authorizations, livestock grazing, camping, off-road vehicle travel, and woodland harvest. These impacts, however, provide economic benefits, and will be partially mitigated by the actions discussed in the Management Common to All sections for each management decision. Implementation of conservation measures, as well as adherence to BLM requirements and the ESA, would prevent these short-term resource uses from significantly impacting the long-term productivity of special status species habitat in the planning area.

4.3.15.6. IRREVERSIBLE AND IRRETRIEVABLE IMPACTS

Irretrievable impacts associated with surface-disturbing activities proposed throughout the planning area include the loss of special status species habitat value from mineral development, fire treatments, or grazing. These resource values would be lost until successful restoration/rehabilitation takes place. Management Common to All Alternatives detailed in the Summary Table of Alternatives (Table 2.1 in Chapter 2) requires reclamation of disturbed areas following completion of management actions (i.e., well-pad deconstruction and reseeding and weed eradication in overgrazed areas). Implementation of this reclamation/rehabilitation would prevent these impacts from being irreversible. Some decisions would have irretrievable impacts to special status species, which include loss of habitat from the placement of permanent structures, such as campgrounds and facilities.

4.3.16. TRAVEL MANAGEMENT

As the popularity of travel within the Monticello PA increases and greater numbers of on-road and off-road vehicles and visitors use the road and trail system within the PA, travel management issues are becoming an increasing concern (see the discussion of OHV resource use conflicts in Section 3.10.4.3 and 3.10.4.5, Recreation). These concerns include (and are not limited to) engine noise, air pollution from exhaust emissions, impacts to erodible soils, the potential for travel-related stream sedimentation and non-point source water pollution, potential impacts to federally listed and sensitive wildlife species habitats, and potential impacts to historic and prehistoric archaeological sites.

Two assumptions were used in the analysis of impacts to travel within the Monticello PA:

- Areas designated as open to cross-country OHV use, and areas managed as limited to Designated Routes and Trails would be beneficial to mechanized OHV travel, as these areas would allow access within the Monticello PA;
- Areas designated as closed would be adverse to mechanized travel because of the reduced opportunities for travel access. The number of acres designated as open, limited, or closed to OHV travel and the miles of designated routes along B-Class and D-Class roads [see below] were the indicators for analyzing the impacts to travel. (See Table 4.144 at the end of the section for a summary of travel data used in the analysis of impacts.) No assumptions were made for non-mechanized travel (i.e., equestrian, hiking, backpacking) because, as discussed in Section 4.3.16.2.11.2., Non-Mechanized Travel, none of the proposed alternatives would restrict these forms of travel within the PA except where necessary to protect specific resource values, and to maintain public health and safety.

Road classes are discussed and considered in the analysis of impacts to travel. The road classifications relevant to the analysis are as follows:

- Class B roads are those that are regularly maintained by the State of Utah within the Monticello FO planning area, with road surfaces that can be natural, paved, or gravel;
- Class C roads are roads within town or city municipal boundaries (e.g., Monticello, Blanding, Bluff);
- Class D roads are those with natural surfaces only, not on a regular maintenance schedule (though they may be maintained), and not funded for maintenance by the State of Utah (BLM 2005j).

4.3.16.1. Impacts Common to All Action Alternatives

After approval of the proposed RMP, management decisions under the action alternatives (Alternatives B, C, D, and E) would continue to analyze the impacts of limited to designated travel routes for all vehicles within the planning area, including mountain biking and motorized OHV routes, through adaptive management at the activity planning level. This would be beneficial to travel management in the long-term because travel-related resource-use conflicts would be identified and resolved through potential modification of these designated limited routes.

Through travel resource management, if the AO determines that OHV travel use would cause or have the potential to cause resource degradation, travel along the route would be prohibited or limited. This would be adverse to travel in the long-term because access opportunities within the planning area would be reduced.

4.3.16.2. Alternatives Impacts

The following resources would have negligible to minor impacts on travel, and will not be analyzed further in this section:

Health and Safety

Health and safety management decisions for all the alternatives that would identify and address abandoned minelands safety concerns, respond to hazardous waste releases, and protect public health and safety would have negligible impacts on travel management because these management decisions would not close routes or delay, restrict, or otherwise interfere with travel opportunities within the Monticello PA.

Livestock Grazing

Grazing management decisions for all alternatives would have negligible impacts on travel because grazing restrictions and exclusions, and authorized grazing use within the planning area would not prevent or limit travel.

Paleontology

Management decisions for paleontological resources would have negligible impacts on travel because the collection of fossils for personal, commercial, and scientific use, and the protection of these resources would not affect travel opportunities.

Soils and Watershed

Soils and watershed management decisions common to all of the alternatives would have negligible impacts on travel because none of the soil management decisions to protect sensitive soils, prevent soil erosion, and protect watershed resources would restrict access, prohibit travel, or affect travel opportunities.

Visual Resources

The proposed VRM management decision impacts on travel would be negligible because VRM designations and visual resource objectives within the planning area for all the alternatives would be consistent with other land management decisions, including travel. There are no specific VRM management decisions that would restrict or prohibit travel or access within the Monticello PA, beyond those required by law (e.g., IMP-related restrictions on motorized travel within VRM Class I WSAs).

4.3.16.2.1. Impacts of Air Quality Decisions on Travel

Air quality management decisions common to all of the alternatives would require compliance with Utah air conservation regulations (R307-5-7) prohibiting the use, maintenance, or construction of roads without fugitive dust-abatement measures. BLM policy requires monitoring and managing exhaust emissions to prevent deterioration of air quality within PSD Class I airsheds (e.g., Canyonlands, Arches, and Capitol Reef National Parks). The impacts on travel within the PA would be minor and short-term along unpaved travel routes (D-Class roads) that require road-surfacing-related dust-abatement measures, because travelers could experience some travel delays or re-routing around the affected road sections during maintenance.

4.3.16.2.2. Impacts of Cultural Resources Decisions on Travel

Under all of the alternatives, management decisions for the Comb Ridge and Beef Basin CSMAs would allow either open OHV cross-country travel (Alternative A only) or limited OHV travel along designated routes. This would be beneficial in the long-term to travel by allowing access to these cultural special management areas.

Management decisions under all of the alternatives for the Grand Gulch National Historic District would designate the area as closed to OHV use, which would have adverse, long-term impacts on travel because opportunities for OHV travel into the area would be prohibited. It should be noted that this area lies within a WSA and, as stipulated under the IMP, mechanized travel (other than along existing "ways") is prohibited within WSAs.

4.3.16.2.2.1. Alternative A

Under Alternative A, travel would be prohibited along a 500-foot segment of a spur road (D-Class road) that allows access to the McLoyd Canyon-Moon House CSMA. This would have long-term, adverse impacts on travel for those wishing to drive to the hiking access trailhead for this cultural site, as it would reduce the travel access opportunities for those visitors who either cannot walk or choose not to walk along the spur road to this site.

4.3.16.2.2.2. Alternatives B and E

Under these similar alternatives, the Tank Bench CSMA would be closed to OHV use, with impacts as discussed for the Grand Gulch National Historic District above. Compared to Alternative A, these two action alternatives would have more adverse impacts on travel opportunities because Alternative A would not impose travel restrictions in the area (the management decisions are unspecified).

Management decisions under these alternatives would close the D-Class access road to the McLoyd Canyon-Moon House cultural site, with impacts as described under Alternative A.

4.3.16.2.2.3. Alternative C

The management decisions for the Tank Bench CSMA would be the same as discussed under Alternatives B and E, with the same impacts comparison to Alternative A.

Management decisions on travel for the McLoyd Canyon-Moon House CSMA would be the same as discussed under Alternative A.

4.3.16.2.2.4. Alternative D

Under Alternative D, travel within the Tank Bench area would be managed under the same decisions as the surrounding areas, which would be beneficial for travel in the long-term because travel along designated routes would be allowed. Compared to Alternative A, the beneficial impacts on travel would be similar, but to a lesser degree, because this action alternative would limit travel to designated routes within the Tank Bench area while travel opportunities under Alternative A would be unspecified (and unlimited).

Travel management decisions under this alternative for the McLoyd Canyon-Moon House CSMA would permit travel along the D-Class road to the site, with long-term, beneficial impacts on travel because CSMA access opportunities would be available. Compared to Alternative A, this action alternative would be more beneficial to travel in the long-term because site access would be available, whereas under Alternative A, accessing the site by motorized vehicles would not be allowed.

4.3.16.2.3. Impacts of Fire Management Decisions on Travel

Fire management decisions would have negligible long-term impacts on travel because prescribed fire treatments, fuels treatments, fire prevention and mitigation, and wildland fire suppression would not prevent or impede travel within the Monticello PA. There could be short-term, minor, adverse impacts on travel if prescribed burns or wildland fires crossed travel routes that required temporary road or trail closure, or temporary re-routing around the fire management or suppression area for public safety reasons.

4.3.16.2.4. Impacts of Land and Realty Decisions on Travel

Under management decisions common to all alternatives, land and realty decisions would have negligible impacts on travel from granting filming permits for cinematography within the planning area because permit stipulations would require that these activities would not significantly restrict public access along routes. The granting of ROWs access within the planning area for oil and gas leases could have minor, beneficial impacts on travel in the long-

term by establishing routes for access in the planning area along spur roads to oil and gas well sites. The ROW impacts would be minor because 1) only production sites would have maintained access to well sites (exploration sites and access roads would be reclaimed), and 2) the RFD predictions for oil and natural gas well drilling throughout the planning area for the life of the proposed RMP ranges from a relatively small 54 to 76 wells.

4.3.16.2.5. Impacts of Minerals Decisions on Travel

The impacts of mineral resource management decisions on travel would be similar to those discussed above for Lands and Realty decisions because the decisions are similar. The granting of ROWs and the construction of minerals-related access roads would be permitted under all of the alternatives, but the predicted level of mineral resource development would result in a relatively small number and short length of additional spur-type access roads when compared with the existing and/or designated routes in the planning area. Accordingly, minerals decisions would have beneficial but minor impacts on opportunities for travel within the planning area.

4.3.16.2.6. Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Travel

Alternative E would manage non-WSA areas with wilderness characteristics for protection of their wilderness values. Travel management decisions would prohibit all mechanized travel within the approximately 582,360 acres of lands inventoried as having non-WSA wilderness characteristics by designating existing routes through these areas as closed to OHV use (see Section 4.3.8.9.1, Off-Highway Vehicle (OHV) Travel Management, for OHV management and acreage closures). The impacts to travel would be substantial under this alternative, as mechanized travel opportunities (i.e., motorized OHV and mountain biking) would not be available within and through those areas (along approximately 179 miles of D-Class routes within non-WSA wilderness characteristics lands) where designated routes have been proposed under the Monticello Travel Plan. Compared to Alternative A, this alternative would have more adverse impacts on travel opportunities because no acres would be designated as open to OHV travel (with the same impacts as discussed above under Alternative B above), and 582,360 acres and 179 miles of OHV routes would be closed to OHV travel opportunities that would not be closed under Alternative A.

4.3.16.2.7. Impacts of Recreation Decisions on Travel

Recreational management decisions common to all of the alternatives would ensure that the Monticello FO coordinate and develop procedures, protocols, and permits with other federal agencies to provide reasonable access for non-recreational use of OHVs for search-and-rescue, military, emergency, and other non-specified uses. This would be beneficial in the long-term by developing plans and establishing routes for efficient travel within the planning area by federal, non-BLM personnel.

4.3.16.2.7.1. Alternative A

Under Alternative A, vehicle access would not be allowed within the San Juan River SRMA between Comb Wash and Lime Creek, which would be adverse in the long-term for travel because opportunities would not be available for recreational access along this stretch of the river.

Commercial-type travel (including motorized/mechanized recreational vehicle use) within the planning area would require an SRP, but the impacts on travel would be negligible because no restrictions or prohibitions are specified under this alternative.

4.3.16.2.7.2. Alternatives B and E

Under Alternatives B and E, vehicle access would not be allowed from Comb Wash to Lime Creek within the San Juan River SRMA, with adverse long-term impacts on travel, because of the reduced opportunities for travel and access to the river. Compared to Alternative A, these alternatives would have the same impacts to travel because Alternative A would also not allow vehicle access along this stretch of the river.

Commercial-type motorized or mechanized tours and events would be seasonally prohibited (i.e., SRPs would not be issued) for routes within pronghorn, bighorn sheep, deer, and elk crucial habitat, and lambing and rutting areas. Table 4.141 below shows the proposed times when travel routes would be closed or limited to designated routes in order to protect these wildlife species.

Table 4.141. Proposed Travel Closing or Travel Limitation Periods in Wildlife Areas

	Alternative A	Alternatives B and E	Alternative C	Alternative D
Bighorn Sheep	1 Apr– 5 Jul 15 Oct–31 Dec	1 Apr– 5 Jul 15 Oct–31 Dec	1 Apr–15 Jun 15 Oct–15 Dec	15 Apr–15 May 1 Nov–15 Dec
Pronghorn	15 May–15 Jun	15 Apr–30 Jun	1 May–15 Jun	15 May–15 Jun
Elk	Unspecified (no identified crucial habitat)	1 Nov–15 May	15 Nov–15 Apr	15 Dec–31 Mar
Deer	15 Dec–30 Apr	1 Nov–15 May	15 Nov–15 April	15 Dec–31 Mar
Affected Roads in Wildlife Habitat	Zero miles of travel routes seasonally closed to private, permitted, or commercial OHV travel.	512 miles of travel routes seasonally closed to permitted or commercial OHV travel, but open to private use.	135 miles of travel routes seasonally closed to permitted or commercial OHV travel, but open to private use.	Zero miles of travel routes seasonally closed to private, permitted, or commercial travel.

This would have short-term, adverse impacts on specific recreational travel-related activities during these times because the opportunities for permitted or commercial OHV travel and/or motorized events into or through crucial habitat would be prohibited along 512 miles of travel routes in order to protect wildlife species. The impacts on private motorized OHV and mountain biking travel opportunities would be negligible because no wildlife restrictions would be applicable. Compared to Alternative A, these alternatives would have more adverse impacts on travel because 512 miles of travel routes would be seasonally closed to some forms of commercial travel, with decreased opportunities for access and movement through the planning area.

Note that while the recreation management decisions under Alternative E would be very similar to those discussed under Alternative B, Alternative E would manage approximately 582,360 total acres for the protection of non-WSA lands with wilderness characteristics within the proposed SRMAs and the ERMA. The impacts on travel under this alternative would be more adverse to

recreation-related travel opportunities, as discussed in Section 4.3.16.2.6, because travel opportunities for OHVs along D-Class routes within lands with non-WSA wilderness characteristics would be prohibited.

4.3.16.2.7.3. Alternative C

Impacts on travel along the San Juan River from Comb Wash to Lime Creek would be the same as discussed under Alternative B because the management decisions are the same.

Under this alternative, there would be short-term, adverse impacts on travel from seasonal limitations in crucial pronghorn, deer, elk, and bighorn sheep habitat through closing approximately 135 miles of travel routes (26% of the routes closed under Alternative B) to some permitted or commercial OHV use or mechanized tours and events. Compared to Alternative A, this alternative would have more adverse impacts on travel because commercial-type recreational travel opportunities would be reduced.

4.3.16.2.7.4. Alternative D

Impacts on travel along the San Juan River from Comb Wash to Lime Creek would be the same as discussed under Alternatives B.

The impacts on travel from restricting OHV use to designated routes in crucial pronghorn, deer, elk, and bighorn sheep habitat would be negligible because private and commercial recreational travel restrictions would not impede or prevent travel through crucial wildlife habitat (no recreation-related roads would be seasonally closed to travel in crucial wildlife habitat). The impacts would be similar to those discussed for Alternative A.

4.3.16.2.8. Impacts of Riparian Management Decisions on Travel

4.3.16.2.8.1. Alternative A

The impacts on travel from riparian management decisions would be negligible under Alternative A. Management decisions under the current RMP would maintain water quality in streams to meet state and federal requirements, and preserve and restore riparian natural functioning conditions, but these decisions would not specifically restrict or prohibit travel within or through riparian areas.

4.3.16.2.8.2. Alternatives B and E

These alternatives would apply the same management decisions to riparian areas, resulting in short-term, adverse impacts on travel opportunities from potential temporary closures of Functioning at Risk riparian areas to dispersed motorized use. These areas would be closed until riparian Proper Functioning Condition (PFC) is restored. Management decisions under these alternatives would have long-term, adverse impacts on travel from closing selected riparian areas to vehicle traffic if site-specific analysis determines that OHV use is causing riparian degradation. At this RMP programmatic-level of analysis, the size of the at-risk riparian areas that would be closed to travel, and the length of time that they would be closed (and thus reduce the opportunities for travel) are unknown. The impacts on travel from riparian management decisions would be analyzed under NEPA at the site-specific level during project development and implementation. Compared to Alternative A, these alternatives would be more adverse to

travel in the short- and long-term because roads and travel routes within riparian areas could potentially be closed to travel opportunities in order to protect riparian resources.

4.3.16.2.9. Impacts of Special Designations Decisions on Travel

Management decisions related to impacts to travel access and restrictions within ACECs, WSAs, and along recommended eligible Wild and Scenic River segments are analyzed under Sections 4.3.16.2.7, 4.3.16.2.8 and 4.3.16.2.11 for OHV and other motorized vehicle use.

4.3.16.2.10. Impacts of Special Status Species Decisions on Travel

Management decisions related to impacts to travel access and restrictions within special status species habitat are analyzed under Sections 4.3.16.2.7 and 4.3.16.2.8.

4.3.16.2.11. Impacts of Travel Management Decisions on Travel

4.3.16.2.11.1. OHV Travel

Alternative A

Under Alternative A, OHV travel would be managed under open, limited, and closed travel designations. As shown in Table 4.142 below, current OHV designations under Alternative A would manage 611,310 acres as open for cross-country travel (Map 49). The limited category of OHV travel would be managed with 540,260 acres designated as limited use with season restrictions to protect important wildlife habitat; 570,390 acres would be managed as limited to existing roads and trails to protect cultural, scenic, and recreational values; and 218,780 acres would be managed as limited to designated roads and trails to protect resource values within ACECs, SRMAs, developed recreation sites, and riparian/floodplain areas. Approximately 276,430 acres would be managed as closed to OHV use to protect vegetation study areas, and ACEC resource values.

Table 4.142 OHV Acreage Designations by Alternative

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Open	611,310	0	2,311	2,311	0
Limited – Seasonal Restrictions	540,260	-	3.8[1]	-	-
Limited – Existing Roads and Trails	570,390	-	-	-	-
Limited – Designated Roads and Trails	218,780	1,359,417	1,362,142	1,780,807	812,679
Closed	276,430	423,698	418,667	0	970,436
Total[2]	**2,217,170[3]**	**1,783,115**	**1,780,809**	**1,780,807**	**1,783,115**

[1]This acreage applies to Arch Canyon.

[2]Acreage figures may vary by alternative due to the changes in GIS technology and variances in shapefiles.

[3]Acres are not additive under this alternative because of overlap between limited use categories.

The impacts to travel under the open OHV category would be beneficial in the long-term because these areas would not impede or restrict OHV travel, continuing to allow unlimited, cross-country OHV travel in the designated open areas. Limited OHV use along designated roads and trails would also have beneficial impacts on OHV travel because travel along these routes would be unimpeded. Limited OHV use with seasonal restrictions would have short-term, adverse impacts on travel opportunities by prohibiting travel along these designated routes during specified times of the year. Areas designated as closed to OHV use would continue to adversely affect motorized OHV travel opportunities.

Alternative B

Alternative B would not designate any acreage under the open OHV travel category. Limited OHV use would be allowed on 1,359,417 acres, with 423,698 acres designated as closed to OHV travel (Map 50). The impacts on OHV travel would be adverse along routes designated as closed to travel because travel and access opportunities within these portions of the planning area would be prohibited. Compared to Alternative A, this alternative would be more adverse in the long-term on travel because 1) more area would be designated as closed to OHV travel (more than 53% more area), and 2) no area would be designated as open to cross-country OHV travel, with long-term, adverse impacts on this form of travel from the elimination of the 611,310 acres of open cross-country OHV travel opportunities allowed under Alternative A.

Arch Canyon would be closed to OHV use to protect special status species within the canyon (e.g., the Mexican spotted owl and flannelmouth sucker). The impacts to travel in the long-term would be adverse because opportunities for motorized OHV travel within the canyon would be eliminated. Compared to Alternative A, this alternative would be more adverse because Alternative A would not prohibit travel within the canyon.

Alternative C

This alternative would have impacts similar to those discussed under Alternatives B and E, except that a very small area would be designated as open to cross-country OHV travel opportunities (2,214 acres near Indian Creek within the Indian Creek SRMA, and 97 acres in Butler Wash [in the Comb Ridge CSMA]) (Map 51). The comparison of OHV travel under this alternative with Alternative A would be similar to the comparison under Alternatives B and E because the areas designated as limited and closed are similar: there would be a 5,031-acre difference for the closed category between Alternatives B/E and Alternative C, and a 2,725-acre difference under the limited OHV use category.

Under Alternative C, OHV use would be limited to designated routes within Arch Canyon, with some long-term adverse impacts on travel opportunities through partial closure of the canyon to OHV travel. The impacts would be more adverse when compared to Alternative A because there would be fewer opportunities for travel within the canyon.

Alternative D

Similar to Alternative C, Alternative D would designate a small 2,311-acre area as open to cross-country OHV travel, but none of the planning area would be designated as closed to OHV travel access along designated routes (Map 52). Under this alternative, the travel opportunities for open unlimited, cross-country OHV travel would be adversely impacted in the long-term, when compared to Alternative A, as approximately 609,000 acres (99% of the area designated as open

under Alternative A) would have prohibitions on cross-country OHV travel, with a substantial reduction in opportunities for this form of travel. The opportunities for travel along designated routes and trails would not be restricted, except for the seasonal restrictions on commercially permitted mechanized tours or events as discussed above under Section 4.3.16.2.7. Compared to Alternative A, this alternative would have more beneficial impacts on OHV travel because 276,430 fewer acres would be designated as closed to OHV travel, which would increase the OHV-related travel opportunities within the planning area along designated routes. This alternative would also have more adverse impacts to travel, when compared to Alternative A, from the loss of practically all of the opportunities for cross-country OHV travel.

Under this alternative, OHV use within Arch Canyon would be limited to the designated route along the D-class road that allows access to the canyon. The impacts on travel opportunities within the canyon would be minor because canyon travel opportunities would not be restricted along the designated route. The impacts on travel under this alternative, when compared to Alternative A, would be similar.

Alternative E

Alternative E travel decisions would designate no acres as open to cross-country OHV travel and travel within Arch Canyon (the same as Alternative B), with impacts as discussed under that alternative. Approximately 970,436 acres would be closed to OHV travel (582,360 acres and 179 miles of routes within non-WSA lands with wilderness characteristics, and the remainder throughout the Monticello PA) (Map 53). As discussed above in Section 4.3.16.2.6, the impacts of closing more than 54% of the Monticello PA to OHV travel would have substantially adverse impacts on mechanized travel opportunities. The impacts on non-mechanized travel would be negligible, as these forms of travel (hiking, backpacking, and equestrian) would not be affected by route closures except where public safety and resource protection would be a concern. The designation of 812,679 acres as limited to designated routes would have impacts on travel opportunities, as discussed under Alternative B, but to a lesser degree because fewer acres would be designated for under this travel route category.

Compared to Alternative A, this alternative would have substantially more adverse impacts on travel opportunities because: 1) 611,310 acres (100% of the area designated under Alternative A) would be closed to cross-country OHV travel, and 2) 694,006 more acres would be closed to OHV travel opportunities (with a total acreage closure of 970,436 acres or over 3.5 times more acres than designated under Alternative A) under this alternative than under Alternative A.

4.3.16.2.11.2. Non-Mechanized Travel (Hiking, Backpacking, Equestrian)

Management decisions for all alternatives would provide opportunities for non-mechanized travel on all routes open to mechanized uses, and would manage routes that exclude motorized OHV and mountain bikers to reduce user conflicts, and provide travel opportunities independent of motorized OHV and mountain biking routes. Management would not restrict non-mechanized travel within the Monticello PA, except in areas where specific resource values would need protection or for public health and safety reasons. All of the alternatives would have long-term beneficial impacts to non-mechanized travel because travel opportunities would only be limited for the reasons just mentioned, if the health and safety of the traveler would be put at risk, or where natural and cultural resources have been degraded and need to be rehabilitated or preserved.

4.3.16.2.11.3. Road Travel

Alternative A

Under Alternative A, no D-Class roads would be closed because of resource use conflicts, restrictions to authorized users only, proposed management decisions, purpose and need review, or crucial wildlife habitat. As shown in Table 4.143, 890 miles of B-Class roads would be open within the planning area, with approximately 2,179 miles of D-Class roads open within the planning area. The impacts on travel under this alternative would be negligible because travel opportunities to access the Monticello PA would not be prohibited or restricted along these roads.

Table 4.143. B-Class and D-Class Roads in the Monticello Planning Area (Miles)

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Open B-Class Roads	890	875	873	873	875
Open D-Class Roads	2,179	1,521	1,947	2,205	1,342
Closed D-Class Roads	0	780	316	45	959

Source: BLM 2006d.

[1]The D-Class closed roads include those routes seasonally closed to protect wildlife crucial habitat (see Section 4.3.16.2.13).

Alternative B

Under these alternatives, 15 miles of B-Class roads (fewer than 2%) would be closed, with 780 miles of D-Class roads (34% of the total number of D-Class roads) proposed for closing because of resource use conflicts, restrictions to authorized users only, proposed management decisions under this alternative, purpose and need review, or crucial wildlife habitat needs. Of the proposed 780 miles of D-Class closures, 258 miles would be closed because of crucial deer habitat needs, 155 miles because of resource designations under this alternative, 75 miles because of crucial elk habitat needs, 136 miles because of crucial bighorn sheep habitat needs, 34 miles because of authorized use only along designated roads, and 30 miles because of purpose and need review of road use. Other reasons for closure would include 47 miles because of riparian vegetation conflicts and 6 miles due to law enforcement conflicts. (See the Monticello Travel Plan [Appendix N] for a description of the route designation process.) The remainder of the proposed closures would be for cultural resource, seasonal, and other wildlife habitat and vegetation conflicts. These proposed road closures would have long-term adverse impacts on travel because of the reduction in planning area travel and access opportunities. Compared to Alternative A, these alternatives would be more adverse to travel because 780 more miles (34% more D-Class routes) would be closed to travel than under Alternative A, which would not close any D-Class roads.

Alternative C

Alternative C would propose to close 17 miles of B-Class roads (fewer than 2%), and 316 miles of D-Class roads (14% of the total number of D-Class roads under this alternative) within the planning area. Of the proposed 316 miles of road closures, the majority of closures would be for the following reasons: 109 miles for crucial deer habitat needs; 38 miles for WSA intrusions/resource designations under this alternative; 58 miles for resource designations; 33

miles for road purpose and need review; 17 miles for authorized use only along specified roads; and 31 miles for bighorn sheep habitat needs. The impacts of these proposed closures would be similar to those discussed under Alternative B because the affects on travel opportunities would be similar. However, the degree of impact on travel would be roughly half of that disclosed under Alternative B because road closures under this alternative would be 46% of those proposed under Alternative B. Compared to Alternative A, this alternative would have more adverse impacts on travel for the same reasons as discussed under Alternative B.

Alternative D

Alternative D would propose to close 17 miles of B-Class roads (the same as under Alternative C) and 45 miles of D-Class roads. The proposed D-Class closures would be because of WSA intrusions. The impacts of these road closures on travel under this alternative would be minor because 1) the total number of road closures is small, compared to the total miles of B- and D-Class road within the planning area (2% of B-Class roads, 2% of D-Class roads), and 2) the D-Class road closures within WSAs would be for reasons required under the IMP to limit trails and routes to those existing prior to the time that the WSA was established (i.e., to eliminate unauthorized routes within the WSA). Compared to Alternative A, this alternative would be more beneficial to travel along D-Class roads because 26 more miles of D-Class roads would be open for travel than under Alternative A. This would provide more opportunities for planning area travel and access along these roads. The impacts on B-Class roads would be the same as discussed under Alternative B.

Alternative E

Travel decisions for Alternative E would be the same as those discussed under Alternative B, except that the 582,360 acres within non-WSA lands with wilderness characteristics would be closed to OHV travel. Closing these areas would not affect travel opportunities along B-Class routes because these are state-administered and maintained routes, beyond the jurisdiction of BLM land management; however, 179 miles along D-Class roads would be closed to OHV travel opportunities within non-WSA lands with wilderness characteristics. Compared to Alternative A, this alternative would have more adverse impacts on D-Class OHV travel because fewer OHV travel opportunities would be available under Alternative E.

4.3.16.2.11.4. Scenic Byways and Backways

Under all of the alternatives, scenic byways would be maintained along the Indian Creek Corridor, along the Bicentennial–Trail of the Ancients National Scenic Byway, and along Monument Valley. Scenic backways would be maintained along the Lockhart Basin Road, the Trail of the Ancients (Backway), Elk Ridge Road, and the Abajo Loop Road. These management decisions would have long-term, beneficial impacts on travel by providing scenic-quality-related travel opportunities within the PA.

4.3.16.2.12. Impacts of Vegetation Decisions on Travel

The impacts of vegetation treatments for ecosystem restoration, fire management, and exotic vegetation control on travel are similar to those discussed under Section 4.3.16.2.3, Impacts of Fire Management Decisions on Travel, because the treatments and resultant impacts are similar.

4.3.16.2.13. Impacts of Wildlife and Fisheries Decisions on Travel

4.3.16.2.13.1. Alternative A

Under Alternative A, management decisions for the protection of bighorn sheep, pronghorn, and deer would have impacts similar to those discussed in Section 4.3.10, Recreation, i.e., the impacts would be negligible to minor on travel. No restrictions or limitations would be placed on travel except cross-country OHV travel within bighorn sheep crucial habitat (personal communication between Tammy Wallace, Monticello FO, and Thomas Sharp, SWCA, 2006).

4.3.16.2.13.2. Alternatives B and E

Under these alternatives, permitted and commercial OHV travel would be prohibited within bighorn sheep, pronghorn, deer, and elk crucial habitat. The impacts would be short-term, but adverse, on travel opportunities for these activities, as approximately 512 miles of routes would be seasonally closed to protect wildlife. It should be noted that private motorized OHV and mountain biking travel along designated routes would be permitted within these areas, so there would be negligible impacts on opportunities for private travel. Compared to Alternative A, these alternatives would be more adverse to commercial and permitted types of travel because of the prohibitions on OHV access into crucial wildlife habitat.

4.3.16.2.13.3. Alternative C

The impacts of crucial wildlife habitat restrictions on travel would be similar to those discussed under Alternatives B and E, but to a lesser degree, as some travel limitations would be placed on the extent and duration of commercial and permitted OHV use within crucial wildlife habitat. Approximately 135 miles of travel routes would be closed to protect wildlife species under this alternative (26% of the acres closed to travel under Alternatives B and E), which would reduce travel opportunities. It should be noted for Alternatives B and E, that private OHV/mechanized travel along designated routes would be permitted within these areas, so the impacts on opportunities for this type of travel would be negligible. Compared to Alternative A, this alternative would be more adverse to travel because more roads would be closed, and thus the opportunities for travel would be reduced.

4.3.16.2.13.4. Alternative D

The impacts of crucial wildlife habitat restrictions on travel would be similar to those discussed under Alternative A because the management decisions would be similar.

4.3.16.2.14. Impacts of Woodlands Decisions on Travel

4.3.16.2.14.1. Alternative A

Alternative A woodlands decisions would have negligible impacts on travel because there are no specific management decisions that would reduce or limit travel access opportunities within the Monticello PA.

4.3.16.2.14.2. Alternative B

Alternative B would have short-term, adverse impacts on travel by managing the East Canyon, Harts Draw, Salt Creek Mesa, Dark Canyon, White Canyon, South Cottonwood, and Montezuma Watershed woodland zones with seasonal restrictions on woodland harvesting access to elk, deer, pronghorn, and bighorn sheep crucial habitat in order to protect these wildlife species, as discussed under Section 4.3.10, Recreation, and Section 4.3.19, Wildlife (and shown in Table 4.141). Compared to Alternative A, the short-term restrictions and route closures on travel under Alternative B would be more adverse because travel would be seasonally restricted or prohibited in these zones.

4.3.16.2.14.3. Alternative C

The impacts to travel under Alternative C would be similar to Alternative A because, though woodland decisions under this alternative would impose travel restrictions to protect site-specific cultural and other sensitive resources, private and/or commercial woodland harvesting activities would be permitted to travel off-road to harvest and collect wood.

4.3.16.2.14.4. Alternative D

The impacts on travel under this alternative would be similar to Alternative A because there would be no OHV woodland harvesting decisions that would restrict or prohibit travel access to harvest and collect wood, except site-specific restrictions in harvesting areas to protect cultural and other sensitive resources.

4.3.16.2.14.5. Alternative E

Under Alternative E, all lands with non-WSA wilderness characteristics within the proposed woodland harvesting zones would be managed to protect wilderness values. Woodland decisions to protect these characteristics would include closure to OHV use, scenic quality management under VRM I objectives, and firewood gathering and harvesting prohibitions. These management decisions would have short-term and long-term adverse impacts on OHV travel, as 1) OHV travel (including OHV travel to harvest and collect wood) would not be allowed within the approximately 582,357 acres of lands with non-WSA wilderness characteristics, and 2) the same short-term seasonal restrictions applied to protect wildlife within woodland harvesting zones (as discussed under Alternative B) would restrict travel opportunities. Compared to Alternative A, this alternative would have more adverse impacts on OHV travel because more acreage would be closed to travel or seasonally restricted.

4.3.16.3. Summary of Travel Analysis Data

The following table (Table 4.144) summarizes acres of OHV designations, miles of proposed travel routes, and proposed travel restrictions under each alternative, the purpose of which is to provide the reader with a concise description of the data used in this impacts analysis.

Table 4.144. Travel Data Summary Table

	Alternative A	Alternatives B	Alternative C	Alternative D	Alternative E
Open B-Class Roads	890 miles	875 miles	873 miles	873 miles	875 miles
Open D-Class Roads	2,179 miles	1,521 miles	1,947 miles	2,205 miles	1,342 miles
Closed D-Class Roads	0	780 miles	316 miles	45 miles	959 miles
OHV Open	611,310 acres	0 acres	2,311 acres	2,311 acres	0 acres
OHV Limited – Seasonal Restrictions	540,260 acres	-	3.81 acres	-	-
OHV Limited – Existing Roads and Trails	570,390 acres	-	-	-	-
OHV Limited – Designated Roads and Trails	218,780 acres	1,359,417 acres	1,362,142 acres	1,780,807 acres	812,679 acres
OHV Closed	276,430 acres	423,698 acres	418,667 acres	0 acres	970,436 acres
Bighorn Sheep Travel Restrictions	Closed to OHV cross-country travel from 1 Apr–15 Jul 15 Oct–31 Dec	1 Apr–15 Jul 15 Oct–31 Dec	1 Apr–15 Jun 15 Oct–15 Dec	15 Apr-15 May 1 Nov-15 Dec	1 Apr–15 Jul 15 Oct–31 Dec
Pronghorn Travel Restrictions	15 May-15 Jun	15 Apr–30 June	1 May–15 Jun	15 May-15 Jun	15 Apr–30 June
Elk Travel Restrictions	Unspecified (no identified crucial habitat)	1 Nov–15 May	15 Nov–15 Apr	15 Dec-31 Mar	1 Nov–15 May
Deer Travel Restrictions	15 Dec-30 Apr	1 Nov– 15 May	15 Nov–15 Apr	15 Dec-31 Mar	1 Nov– 15 May
Affected Roads in Wildlife Habitat	Zero miles of travel routes closed to private, permitted, or commercial OHV travel.	512 miles of travel routes closed to permitted or commercial OHV travel, but open to private use.	135 miles of travel routes closed to permitted or commercial OHV travel, but open to private use.	Zero miles of travel routes closed to private, permitted, or commercial OHV travel.	512 miles of travel routes closed to permitted or commercial OHV travel, but open to private use.

4.3.16.4. Summary of Impacts on Travel

See Table 2.2 of Chapter 2 for a summary of impacts to travel.

4.3.16.5. Mitigation

There are no mitigation measures to reduce the impacts to access or increase the opportunities for travel within the planning area, except as discussed in Section 4.3.1, Air Quality and Climate for dust abatement.

4.3.16.6. UNAVOIDABLE ADVERSE IMPACTS

Unavoidable adverse impacts to travel would be caused by temporary seasonal road or route closures in crucial fawning, lambing, and crucial winter habitat for wildlife along routes where vehicles could impact deer, elk, bighorn sheep, pronghorn, and special status wildlife species.

4.3.16.7. SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

Short-term use of resources in the planning area would have no impact on the long-term productivity of travel.

4.3.16.8. IRREVERSIBLE AND IRRETRIEVABLE IMPACTS

All route or road closures described above are irretrievable in that the use of that travel resource would be irretrievably lost until the routes are reopened. However, none of these closures are irreversible in that it is possible to reopen any of these closed areas or routes subject to additional analysis.

4.3.17. VEGETATION RESOURCES

The following resources are not discussed in this section because their management decisions would have negligible impacts on vegetation resources: Air Quality, Health and Safety, Non-WSA lands with wilderness characteristics, and Socioeconomics.

4.3.17.1. IMPACTS COMMON TO ALL ALTERNATIVES

Sagebrush habitat would be managed as required by the BLM Special Status Species Management – Manual 6840 (BLM 2001c), which requires the BLM to use the methods and procedures necessary to improve the condition of special status species and their habitats to the point where special status recognition is no longer warranted. In addition, BLM's National Sage Grouse Habitat Conservation Strategy 1.3.1 guidance (BLM 2004d) would be followed to ensure land use plans and plan amendments adequately address sage-grouse habitat conservation needs. Harts Draw, Beef Basin, Black Mesa, Alkali, Mustang, Cedar Point, Shay Mesa, and all areas with Gunnison sage-grouse habitat would be prioritized for treatment. These management actions would have beneficial impacts on native plant species in sagebrush vegetation communities because improved sage-grouse habitat necessitates the maintenance of large areas of native sagebrush communities (Crawford et al. 2004).

The Monticello FO would incorporate vegetation treatments from the Utah Record of Decision (ROD) for Vegetation Treatment on BLM Lands in Thirteen Western States EIS (BLM 1991b as amended). Restoration treatments would include biological, chemical, manual, mechanical, and prescribed burning. These treatments would have long-term, beneficial impacts on all native vegetation communities by reducing competition from noxious weeds and exotic, invasive plant species (BLM 1991b).

The spread of noxious, invasive, and non-native weed species would be controlled by implementing the principles in BLM weed management policies and action plans (see Table 3.56 Invasive and Noxious Weeds of San Juan County). In addition, restoration activities and stock animal feed would be required to use certified weed-free seed mixes, mulch, and feed. Restoration treatments to help slow and/or halt the spread of weed species in the Monticello PA

would reduce the adverse impacts of surface disturbances associated with improper livestock management, minerals development, motorized OHV travel in designated open areas, and other activities that result in disturbances to native vegetation. Greasewood would be treated in Comb Wash, Butler Wash, Montezuma, East Canyon, Indian Creek, South and North Cottonwood Wash, and Cross Canyon to improve ground cover, biodiversity, and water quality. This could have short-term, adverse impacts on native vegetation in the treatment areas from surface disturbances and loss of productivity, but would have long-term, beneficial impacts on the treated, native vegetation community as a whole by removing undesirable, non-native plant species, thereby allowing the establishment of a diverse, native vegetation community.

Under all alternatives, seed gathering and plant collection would be allowed in all areas meeting Utah's Rangeland Health Standards. This could have short-term, direct, adverse impacts on native vegetation due to pedestrian trampling, as well as minor potential for loss in reproductive success due to seed/plant removal.

4.3.17.2. ALTERNATIVES IMPACTS

4.3.17.2.1. IMPACTS OF CULTURAL RESOURCE DECISIONS ON VEGETATION

4.3.17.2.1.1. Alternative A

Under Alternative A, there would be no designated Cultural Special Management Areas (CSMAs) and the cultural areas identified in Table 4.131 would be managed according to 1991 RMP Prescriptions. Butler Wash East of Comb Ridge would be managed with no allocation limit and no size limit on private or commercial groups, with camping, OHV use, dogs, fires and grazing permitted within the area. Under this alternative, potential direct adverse impacts from increased trampling of native vegetation by visitors to cultural sites would be reduced or eliminated. However, there would be adverse impacts associated with surface disturbing vegetation treatments, and direct disturbance to vegetation and introduction of noxious and invasive weed species from recreationists, vehicles, and livestock. The level of cultural resource protection (that indirectly results in vegetation resource protection) varies by alternative. Because the extent and location of these surface disturbances are not known at this time, the quantitative differences in vegetation impacts between alternatives cannot be determined.

Under all alternatives, adverse impacts of cultural resource decisions on vegetation would be reduced due to the closure of the Grand Gulch National Historic District (37,388 acres) to private and/or commercial use for woodland products, mineral leasing, OHV use, and mechanized or mechanical surface disturbance (including vegetation treatments). This would decrease the number of native trees removed from this area. It would also decrease the amount of surface disturbance caused by foot/vehicle traffic in the area. Under Alternative A, the only surface disturbance restrictions would be in the Grand Gulch National Historic District. See Table 4.145 for the acreages of each vegetation type within the Grand Gulch National Historic District.

Table 4.145. Acreage of Vegetation Type by Cultural Area

Vegetation Type	Comb Ridge	Tank Bench	Beef Basin	McLoyd Canyon-Moon House	Grand Gulch National Historic District
Conifer/mountain shrub	15,884	0	20	0	13
Desert shrub	0	858	181	0	7,154
Invasive species and weeds	4	0	0	0	24
Pinyon-juniper woodland	17,576	1,564	15,796	1,408	26,902
Riparian and wetland	3,378	225	17	3	860
Sagebrush and perennial grassland	1,147	0	4,285	196	2,434
Total Vegetated Acres	**37,989**	**2,647**	**20,299**	**1,607**	**37,387**

[1] Acres of each vegetation type were determined using the Southwest ReGAP terrestrial ecological classification system (USGS 2004). Because vegetation types may overlap or be overestimated in the SWReGAP coverages, total acres of vegetation may exceed the total acres of the area being analyzed.

4.3.17.2.1.2. Alternative B

Under Alternative B, the qualitative impacts of cultural resource decisions on vegetation resources would be the same as those discussed under Alternative A. Under this alternative, Comb Ridge, Tank Bench, Beef Basin, and McLoyd Canyon-Moon House would be managed as CSMAs. The Comb Ridge CSMA (38,012 acres) would be closed to woodland product collection, closed to oil and gas surface occupancy and mineral entry, and would only be available for non-surface disturbing vegetation treatments. Camping would be limited to designated campgrounds and hiking and OHV use would be limited to designated trails. The Tank Bench CSMA (2,646 acres) would have the same surface disturbance restrictions as the Comb Ridge CSMA, but would be closed to OHV use. The Beef Basin CSMA (20,302 acres) and the McLoyd Canyon-Moon House CSMA (1,607 acres) would have the same surface disturbance restrictions as Comb Ridge CSMA with the exception of mineral leasing, which would be allowed subject to standard terms. Under all alternatives, the Grand Gulch National Historic District (37,388 acres) would be closed to all surface disturbances, with the exception of designated trails and camping areas.

There would be a considerable difference in impacts between Alternative B and the No Action Alternative due to the designation of four CSMAs and associated restrictions on surface disturbing activities. Adverse impacts to vegetation from surface disturbance under Alternative B would be considerably reduced from Alternative A due to restrictions on surface disturbances within 62,567 acres of designated CSMAs and the 37,388 acres Grand Gulch National Historic District.

4.3.17.2.1.3. Alternative C

Under Alternative C, the qualitative impacts of cultural resource decisions on vegetation resources would be the same as those discussed under Alternative B. The Comb Ridge CSMA would be managed the same as under Alternative B, except that woodland product collection and

surface disturbing vegetation treatments would be allowed. The Tank Bench CSMA would be managed the same as under Alternative B, except for the following: it would be open to oil and gas leasing and mineral entry under standard lease terms, hiking would be allowed off trails, and surface disturbing land activities would be permitted. The Beef Basin CSMA and the McLoyd Canyon-Moon House CSMA would be managed the same as under Alternative B. The Grand Gulch National Historic District would be managed the same as under Alternative B, but would allow non-motorized vegetation treatments.

There would be a considerable difference in impacts between Alternative C and the No Action Alternative due to the designation of four CSMAs and associated restrictions on surface disturbing activities. Adverse impacts to vegetation from surface disturbance under Alternative C would be greater than under Alternative B due to more acres of native vegetation in the CSMAs subject to adverse impacts from surface disturbance. Adverse impacts under Alternative C would be less than under Alternative A.

4.3.17.2.1.4. Alternative D

Under Alternative D, the qualitative impacts of cultural resource decisions on vegetation resources would be similar to those discussed under Alternative A, as Comb Ridge, Tank Bench, and Beef Basin would not be managed as CSMAs, but would be managed with similar management prescriptions as under Alternative C. These areas would be available for livestock use, surface disturbing vegetation treatments, and OHV use on designated routes. Tank Bench would be open to locatable mineral entry and disposal of mineral materials and geophysical work, campfires, and private and commercial use of woodland products. Beef Basin would be managed as closed to private or commercial use of woodland products. McLoyd Canyon-Moon House would be managed the same as under Alternative C, with the following exceptions: 24 visitors and two commercial groups would be allowed each day. The Grand Gulch National Historic District would be managed the same as under Alternative C; however, if the WSA is released by Congress, it would be open to oil and gas leasing with no surface occupancy and casual geophysical exploration.

Alternative D would have similar impacts as Alternative A due to the designation of only one CSMA and the Grand Gulch National Historic District, and allowances for surface disturbances associated with livestock grazing, vegetation treatments, OHV use, and mineral entry in the other cultural areas. Adverse impacts to vegetation from surface disturbance under Alternative D would be greater than under Alternatives B and C due to more acres of native vegetation subject to adverse impacts from surface disturbance.

4.3.17.2.1.5. Alternative E

Under Alternative E, impacts of cultural decisions on vegetation resources would be the same as those described under Alternative B with the exception that OHV use would be closed in non-WSA lands with wilderness characteristics and vegetation disturbances would be restricted to protect wilderness characteristics in these areas. This would result in long-term, beneficial impacts to vegetation, as well as adverse impacts from restrictions on vegetation treatments to improve vegetation communities and control the spread of invasive species. The Comb Ridge and Beef Basin CSMAs would allow maintenance for existing improvements to wildlife habitat, but no new improvements would be allowed. This would limit direct impacts associated with surface-disturbing improvements. However, it would also reduce long-term, indirect, beneficial

impacts from vegetation and wildlife habitat improvements. Due to the designation of four CSMAs and protections in place for non-WSA lands with wilderness characteristics, Alternative E would have considerably fewer direct adverse impacts than Alternative A. This alternative would also have fewer direct adverse impacts and indirect beneficial impacts to vegetation than any of the other management alternatives.

4.3.17.2.2. IMPACTS OF FIRE MANAGEMENT DECISIONS ON VEGETATION

4.3.17.2.2.1. Alternative A

Under Alternative A, the Reasonable and Prudent Measures and Terms and Conditions identified in consultation with the USFWS for the Utah Land Use Plan Amendment for Fire and Fuels Management would be implemented in fire-related actions (see Appendix B). Maintenance of existing healthy ecosystems is one of the criteria for establishing fire management priorities and would have beneficial impacts on vegetation resources in the Monticello FO. Wildland fire use would not be authorized in the following areas unless reasonable Resource Protection Measures were in place: areas that are known to be highly susceptible to post-fire cheatgrass or other weed invasion, important terrestrial and aquatic habitats, and non-fire adapted vegetation communities. These measures would have beneficial impacts on vegetation by reducing the spread of weeds and exotic, invasive species into native vegetation communities.

Under all alternatives, fuels management actions would include surface-disturbing treatments on 5,000 to 10,000 acres annually. These actions include: mechanical and manual treatments, prescribed fire, chemical or biological vegetation control, and aerial/ground seeding. These treatments would have long-term beneficial and short-term adverse impacts on vegetation communities in treated areas. Fuels treatments that thin vegetation and reduce or eliminate weeds benefit native vegetation communities by removing competition from weedy native and invasive species. Once competition from weedy or non-native species is removed, a diverse native community has the potential to establish itself in the area (Stevens and Monsen 2004). Adverse impacts associated with fuels management actions include trampling and crushing of vegetation, and thinning or removal of rare or ecologically-desirable species. Fuels management actions potentially result in a short-term, adverse reduction in native species diversity. However, in the long-term fuels treatments allow native and desirable non-native species to become established and promote more varied species composition and habitat structure (e.g., forests with multiple age classes and canopy openings for groundcover establishment).

4.3.17.2.2.2. Alternatives B, C, D and E

Under Alternatives B, C, D, and E, the impacts of fire management decisions on vegetation resources would be the same as those discussed under Alternative A.

4.3.17.2.3. IMPACTS OF LANDS AND REALTY DECISIONS ON VEGETATION

4.3.17.2.3.1. Alternative A

Lands and realty decisions include the following issues: access, easements, leases and permits, utility/transportation systems, exchanges, disposals, and withdrawals. The Monticello FO AMS Chapter 7 contains a complete list of common realty issues the Monticello FO can expect. Withdrawals and excluded areas under Alternative A would help preserve and protect sensitive

environmental resources and areas. Other land and realty management decisions that would protect vegetation resources include the acquisition and retention of any TES species habitat, quality riparian areas, and key productive ecosystems.

The Monticello FO AMS Chapter 7 contains a list of ACECs and SRMAs closed to ROWs in the Monticello FO. These closures would benefit vegetation in these areas. However, all areas not identified as avoidance or exclusion will be available for ROWs and could be subject to multiple-use terms on a case-by-case basis (BLM 2005c). ROW corridors are presently used for electric transmission facilities, pipelines 10 inches and larger, communication lines, federal and state highways, and major county road systems. The permanent installation of utility and communication infrastructure in ROWs could have direct, long-term, adverse impacts on native vegetation due to vegetation removal and trampling by workers and vehicles during construction activities.

Applications for filming permits for work on existing roads include the following criteria for approval: project would not impact sensitive species habitat, would not involve the use of exotic species, and would not adversely impact relict environments or riparian areas. Applications for filming permits for work in WSAs, WSR corridors, NRHP Eligible Sites, and Native American Sacred Sites would include the following additional criteria for approval: no significant livestock use and a maximum of 15 vehicles and 75 people in the sensitive area. Trampling and vegetation removal associated with filming operations could result in short- and long-term adverse impacts on vegetation resources. Adverse impacts would be reduced by these required avoidance and/or minimization criteria for sensitive habitats, and by restrictions on the use of exotic species.

In addition, the impacts of lands and realty decisions on vegetation resources would include the disposal of 5,911 acres of land as specified in the AMS, Table 7.3 (BLM 2005c). These data are not available in a spatially explicit format; therefore, acres of impacts by TES species habitats are not available for this analysis. Nevertheless, land disposal decisions could result in impacts to all vegetation types.

4.3.17.2.3.2. Alternative B

Under Alternative B, the impacts of lands and realty decisions on vegetation resources would include the qualitative impacts discussed in Alternative A, with the disposal of an additional 2,968 acres more than under Alternative A (an approximately 50% increase).

This alternative would include the authorization of ROWs for wind or solar energy development in the Monticello FO with the following exceptions: WSAs; VRM class I, II, and III areas; wild and scenic river corridors; ACECs; raptor and migratory bird habitat; and special status species habitat. Development associated with wind and solar energy could have direct, long-term, negative impacts on native vegetation due to removal associated with construction. Long-term, indirect, adverse impacts could result from the potential introduction of invasive plant species by construction equipment and building personnel. The magnitude of adverse impacts would be reduced by the development of surface disturbance restrictions in sensitive and high-value vegetation types. Overall, this alternative would have fewer adverse impacts on vegetation than Alternative A.

4.3.17.2.3.3. Alternative C

Under Alternative C, the impacts of lands and realty decisions on vegetation resources would be the same as under Alternative B, except there would be an increase in surface disturbance due to the allowance of ROWs in ACECs, VRM Class II and III areas, and non-federally listed sensitive species habitats. As a result, there would be an increase in the number of acres potentially adversely impacted by surface disturbance under this alternative. Overall, Alternative C would have fewer adverse impacts on vegetation than Alternatives A or D, but greater impacts than Alternatives B or E.

4.3.17.2.3.4. Alternative D

Under Alternative D, the impacts of lands and realty decisions on vegetation resources would be the same as under Alternative C, except there would be an increase in surface disturbance due to the allowance of ROWs in wild and scenic river corridors. As a result, there would be an increase in the number of acres potentially adversely impacted by surface disturbance under this alternative. Overall, Alternative D would have fewer adverse impacts on vegetation than Alternative A, but greater impacts than Alternatives B, C, or E.

4.3.17.2.3.5. Alternative E

Under Alternative E, the impacts of lands and realty decisions on vegetation resources would be the same as the impacts discussed under Alternative B, with the exception that authorization of ROWs for wind or solar energy development would not be permitted in non-WSA lands with wilderness characteristics. Alternative E would have less adverse impacts on vegetation than the other alternatives because fewer surface disturbances would be allowed due to protection of non-WSA lands with wilderness characteristics.

4.3.17.2.4. IMPACTS OF LIVESTOCK GRAZING DECISIONS ON VEGETATION

4.3.17.2.4.1. Alternative A

Under Alternative A, livestock grazing would be managed according to the Guidelines for Grazing Management to achieve the Standards for Rangeland Health (Appendix D). Grazing would continue to be excluded from 125,356 acres in the areas identified in the Summary Table of Alternatives (Table 2.1) (see also Table 4.28). The allotments and their seasons of use would be the same as in the San Juan RMP (BLM 1991) with the exceptions listed in the Summary Table of Alternatives. New allotments would be added in South Vega, Upper Mail Station, and Big Westwater. In areas where utilization levels have not been established the targeted level of use would be 50% to meet the objectives of this plan. In addition, 17,300 acres would be excluded from livestock use for wildlife objectives (i.e., managed for wildlife use) on parts of the slopes of Peter's Canyon and East Canyon, which would help maintain native vegetation in those areas. In total, approximately 9% of the Monticello FO planning area would be unavailable for livestock grazing under Alternative A (Map 10). Because the intensity and exact location of grazing activities are not known at this time, the quantitative differences in vegetation will instead be analyzed by comparing the acres of each vegetation type unavailable for grazing under each alternative (Table 4.146).

Table 4.146. Acreage of Each Vegetation Type Unavailable for Grazing by Alternative

Vegetation type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	785	800	800	785
Desert shrub	8,411	8,967	8,992	8,420
Invasive species and weeds	99	99	99	99
Pinyon-juniper woodland	121,317	129,641	129,641	121,504
Riparian/wetland	2,380	2,816	2,816	2,394
Sagebrush/perennial grass	5,362	5,434	5,434	5,362
Total	**138,354**	**147,757**	**147,782**	**138,564**

There is the potential for direct and indirect adverse impacts on vegetation resources associated with grazing-related surface disturbance in 91% of the Monticello PA. Livestock grazing, when done at proper levels, would not have adverse impacts on the native plant species in an area. However, when grazing occurs in sensitive riparian areas or at higher levels than the native vegetation can support, adverse impacts to native vegetation are inevitable. In all vegetation types in the Monticello PA, if native vegetation is grazed beyond the point of natural regeneration, non-native, weedy species such as cheatgrass are able to colonize an area and inhibit the future restoration of native species (Sparrow et al. 2003, Young and Evans 1973). Under all alternatives, adaptive management would be applied to livestock grazing in areas where the native vegetation appears to be overburdened, in order to mitigate adverse impacts to vegetation.

4.3.17.2.4.2. Alternatives B and E

Under Alternatives B and E, the impacts of livestock grazing decisions on vegetation resources would include those discussed in Alternative A, with additional impacts from the closure of Slickhorn Canyon (Perkins Brother's Allotment), Rone Bailey Mesa (Upper Mail Station Allotment), Dodge Canyon Allotment, Mule Canyon (including North and South Forks north of U-95), Arch Canyon, Fish and Owl Canyon, Road Canyon, Rogers Allotment, Portions of West Butler Wash Canyons, and Horsehead Canyon within the Montezuma Canyon allotment (Map 11). These closures would have either beneficial or adverse impacts on native vegetation depending on the success of revegetation and weed control efforts following the removal of grazing livestock. Removing livestock from an area without immediate implementation of a weed control plan could lead to the establishment of weedy plant species in place of less competitive natives (BLM 1991b, Monsen 2004). When done properly, as described in the Standards for Rangeland Management, grazing exclosures could be managed to encourage the dominance of native vegetation. In the long-term, Alternatives B and E would likely have fewer adverse impacts on native vegetation in the Monticello FO than Alternative A because of the closure of 9,403 additional acres to livestock grazing. Under Alternatives B and E, 6.6% more acres of the desert shrub vegetation type, 6.9% more pinyon-juniper woodland, 18.3% more

riparian/wetland, and 1.3% more sagebrush/perennial grassland would be closed to grazing than under Alternative A, with more potentially beneficial impacts as discussed above.

4.3.17.2.4.3. Alternative C

Under Alternative C, the impacts of livestock grazing decisions on vegetation resources would be the same as discussed for Alternatives B and E, with the exception that Mule Canyon south of U-95 would be unavailable for grazing, and the North and South Forks north of U-95 would be open (Map 12). As discussed above, these closures would have either beneficial or adverse impacts on native vegetation depending on the success of revegetation and weed control efforts following the removal of grazing livestock. In the long-term, Alternative C would likely have fewer adverse impacts on native vegetation in the Monticello FO than Alternative A due to the closure of 9,428 additional acres to livestock grazing. Under Alternative C, 6.9% more acres of the desert shrub vegetation type, 6.9% more pinyon-juniper woodland, 18.3% more riparian/wetland, and 1.3% more sagebrush/perennial grassland would be closed to grazing than under Alternative A, with only slightly greater acres of desert shrub.

4.3.17.2.4.4. Alternative D

Under Alternative D, the impacts of livestock grazing decisions on vegetation resources would include those discussed under Alternative A, with the additional closures of Slickhorn Canyon (Perkins Brother's Allotment), Rone Bailey Mesa (Upper Mail Station Allotment), Mule Canyon below U-95, Arch Canyon, Fish and Owl Canyon, Road Canyon, Rogers Allotment, and portions of West Butler Wash Canyons (Map 13). Due to the closure of 210 additional acres to livestock grazing, Alternative D is likely to have slightly less severe adverse impacts on native vegetation in the long-term than Alternative A. Under Alternative D, 0.1% more acres of the desert shrub vegetation type, 0.2% more pinyon-juniper woodland, and 0.6% more riparian/wetland would be closed to grazing than under Alternative A.

4.3.17.2.5. Impacts of Minerals Decisions on Vegetation

In Tables 4.147–4.149, the number of acres of each vegetation type in each leasing category is shown for each of the RFD areas. Acreage figures under the Standard Stipulations and Timing and Controlled Surface Use reflect the total BLM administered areas within the Monticello PA open to surface disturbing activities. These are not estimates of the total area disturbed within the Monticello PA, but a comparison by alternative of the amount of area open to potential development within BLM administered areas within the Monticello PA. All acreages provided in the vegetation sections are approximations.

Table 4.147. Alternative A–Acreage of Each Vegetation Type by Oil and Gas Leasing Stipulation In the Blanding Sub-basin RFD Area

Vegetation type	Surface use with standard conditions (acres)	Surface use limited by special conditions (acres)	NSO and closed to mineral entry (acres)	NSO and open to mineral entry (acres)	Closed to leasing and mineral entry (acres)
Conifer/mountain shrub	549	11	0	1	0
Desert shrub	81,663	17,530	2,167	1,120	5,744
Invasive species and weeds	584	224	0	31	2
Pinyon-juniper woodland	146,689	87,504	2,204	2,526	9,284
Riparian/wetland	6,949	2,266	532	83	410
Sagebrush/ perennial grass	31,096	18,454	3	311	97
Totals	**267,530**	**125,989**	**4,906**	**4,072**	**15,537**

Table 4.148. Alternative A–Acreage of Each Vegetation Type by Oil and Gas Leasing Stipulation In the Monument Upwarp RFD Area

Vegetation type	Surface use with standard conditions (acres)	Surface use limited by special conditions (acres)	NSO and closed to mineral entry (acres)	NSO and open to mineral entry (acres)	Closed to leasing and mineral entry (acres)
Conifer/mountain shrub	5,002	3,008	0	76	1,008
Desert shrub	21,459	120,633	2,179	53,429	52,554
Invasive species and weeds	30	545		250	228
Pinyon-juniper woodland	101,907	286,930	2,506	78,949	275,201
Riparian/wetland	1,386	1,377	357	964	2,433
Sagebrush/ perennial grass	12,997	25,681	0	7,595	27,847
Totals	**142,781**	**438,174**	**5,042**	**141,263**	**359,271**

Table 4.149. Alternative A–Acreage of Each Vegetation Type by Oil and Gas Leasing Stipulations In the Paradox Fault and Fold Belt RFD Area

Vegetation type	Surface use with standard conditions (acres)	Surface use limited by special conditions (acres)	NSO and closed to mineral entry (acres)	NSO and open to mineral entry (acres)	Closed to leasing and mineral entry (acres)
Conifer/mountain shrub	1,088	37	0	9	14
Desert shrub	45,187	12,159	0	2,098	3,839
Invasive species and weeds	1,366	170	0	1	0
Pinyon-juniper woodland	90,093	54,756	0	2,340	6,191
Riparian/wetland	2,145	1,185	0	294	317
Sagebrush/ perennial grass	21,091	20,506	0	174	71
Totals	**160,970**	**88,813**	**0**	**4,916**	**10,432**

4.3.17.2.5.1. Alternative A

Potential direct adverse impacts from oil and gas production and mineral materials entry and disposal would occur as various forms of surface disturbance. Of the three oil and gas RFD areas within the Monticello FO (see Map 48), vegetation in the Blanding Sub-basin RFD area is expected to be the most impacted by minerals decisions, because it has the highest predicted levels of oil and gas well development (42 wells over the life of the plan). In addition, there are nine wells expected in the Monument Upwarp area and 25 wells expected in the Paradox fault and fold belt over the life of the Monticello FO RMP. On average, a well pad disturbs 9.6 acres, so oil and gas development would result in the direct removal of native vegetation from approximately 701 acres (73 wells total) in the Monticello FO over the life of the plan. Site specific analysis will be necessary to determine the vegetation types impacted by oil and gas development.

In addition to the 1,399,454 acres managed for oil and gas leasing in the Monticello FO, there are 530,000 acres of managed coal resources in the San Juan Coal Field, 10,000 acres of tar sand resources in the White Canyon Special Tar Sand Area, two Known Potash Leasing Areas of unspecified size, and 16,320 acres in the Warm Springs canyon geothermal area. Site specific analysis will be necessary to determine the vegetation types impacted by coal, tar sand, and potash development.

Surface disturbance associated with well, pipeline, and road construction would result in both short- and long-term adverse impacts on vegetation, beyond the life of the well. In the short-term, loss of vegetation associated with surface disturbance would increase the potential for invasion of undesirable plant species, including noxious weeds (Piemeisel 1951). Surface disturbance would also have long-term impacts on vegetation resources. Following completion of oil and gas activities, native seeding and weed management would occur at each site. Initial

establishment of sagebrush and other native species following seeding is estimated to take three to four years. Successful establishment is dependent on the exclusion or reduction of livestock and control of weedy annuals on the restoration site during this time (Monsen and Stevens 2004). Revegetation is especially difficult in desert shrub vegetation because soils are shallow and highly saline and moisture availability is relatively low (Stevens and Monsen 2004). Introduction of undesirable plant species, notably cheatgrass, is likely in the sagebrush/perennial grass types due to the species' ability to out-compete native plant species in disturbed areas and to thrive in arid conditions (Morrow and Stahlman 1984, Piemeisel 1951).

Adverse impacts of minerals decisions on vegetation resources would be partially mitigated by the implementation of Management Common To All outlined in Table 2.1. This management would include no surface occupancy (NSO) in riparian vegetation, required revegetation of oil and gas well sites upon project completion, and land management that meets or moves towards meeting Utah's Standards for Rangeland Health (Appendix D).

Under this alternative, there would be 41 wells drilled in the Blanding Sub-basin over the life of the plan. This would result in approximately 393.6 acres of surface disturbance. This disturbance could occur in any of the vegetation types except for riparian.

Under this alternative, there would be 7 wells drilled in the Monument Upwarp over the life of the plan. This would result in approximately 67.2 acres of surface disturbance. This disturbance could occur in any of the vegetation types except for riparian.

Under this alternative, there would be 25 wells drilled in the Paradox Fault and Fold Belt over the life of the plan. This would result in approximately 240.0 acres of surface disturbance. This disturbance could occur in any of the vegetation types except for riparian.

Weed Dispersal Associated with Roads

Under all alternatives, new roads would be created to access oil and gas wells in the three RFD areas. In addition, traffic on existing roads is likely to increase due to construction and operation of new and existing oil and gas facilities in the Monticello FO. The number of acres of roadside vegetation that may be invaded by weeds introduced during road construction and traffic was calculated using data from the literature (Gelbard and Belnap 2003). The minimum number of miles of road required to connect future well pads to existing roads was calculated. This number was then converted to meters and multiplied by 100 meters, which is the width of potential weed infestation due to road disturbance. The resulting number of acres of roadside vegetation subject to the introduction and/or spread of noxious weeds and invasive species is provided in Table 4.150.

Table 4.150. Acres of Roadside Vegetation Subject to Weed Invasion

Vegetation Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	1,010	0	977	1,014
Desert shrub	34,272	29,069	32,768	35,056
Invasive species and weeds	459	428	463	468
Pinyon-juniper woodland	59,451	46,126	55,156	59,682
Riparian/wetland	2,384	1,898	2,252	2,541
Sagebrush/perennial grass	24,182	19,465	21,689	24,254
Total	**121,758**	**96,986**	**113,305**	**123,015**

Lands Available for Mineral Material Disposal

Under Alternative A, 584,270 acres of land in the Monticello FO are available for disposal of mineral materials subject to standard terms and conditions, or approximately 33% of the 1,784,724 acres in the Monticello FO. There are currently 821,070 acres (approximately 46% of Monticello FO lands) subject to special conditions under Alternative A. Currently, there are 373,850 acres (approximately 21% of Monticello FO lands) closed to disposal of mineral materials.

Lands Available for Mineral Entry

Under Alternative A, 1,652,743 acres of land in the Monticello FO are open to mineral entry, or approximately 93% of the 1,784,724 acres in the Monticello FO. This area is potentially subject to the impacts described above. There are currently 132,380 acres (approximately 7% of Monticello FO lands) withdrawn from mineral entry. These acres would not be subject to the risks of surface disturbance associated with open pit mining activities.

Geophysical Activity

Under all alternatives, geophysical activity would be permitted in the Monticello FO. Under Alternative A, approximately 886 acres of vegetation would be temporarily impacted by geophysical exploration. Impacts associated with exploration on existing roads would include crushing of individual plants and the potential spread of invasive and weedy plant species along existing roadways in the Monticello FO. There would be short-term, negative impacts associated with removal and/or displacement of native vegetation. Areas disturbed by geophysical activity would be completely reclaimed within 10 years. It is not known exactly where the geophysical activity would take place; therefore, the acreage of disturbance by vegetation type is not available. Site-specific NEPA analysis will take place on a project-by-project basis to quantify the impacts by vegetation type. Table 4.151 presents the predicted acres of surface disturbance associated with geophysical exploration by RFD area.

Table 4.151. Acres of Surface Disturbance Associated with Geophysical Exploration by RFD Area

RFD Area	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Blanding	271	249	271	271	237
Monument	120	137	143	149	53
Paradox	495	408	489	504	301
Total Acres	**886**	**794**	**904**	**924**	**591**

4.3.17.2.5.2. Alternative B

Under Alternative B, the qualitative impacts of minerals decisions on vegetation resources would be the same as those discussed under Alternative A because the impacts from minerals development would be the same. The major differences in impacts between this alternative and the No Action Alternative would be 1,367,015 acres available for management of oil and gas leasing (2.3% fewer acres than under Alternative A), and 365,170 acres available for mineral material disposal with standard stipulations (38% fewer acres than under Alternative A). Acres available for oil and gas leasing by vegetation type in each of the RFD areas are shown in Tables 4.152–4.154. The acres and location of predicted surface disturbance are similar for each alternative.

Under this alternative, there would be 38 wells drilled in the Blanding Sub-basin over the life of the plan. This would result in approximately 364.8 acres of surface disturbance, which could occur in any of the vegetation types except for riparian. This is 3 (7%) fewer wells and 28.8 (7%) fewer acres of disturbance than would occur under Alternative A.

Table 4.152. Alternative B–Acreage of Each Vegetation Type by Oil and Gas Leasing Category in the Blanding Sub-basin RFD

Vegetation Type	Standard lease terms	Controlled surface use	Controlled surface use and timing limitations	Timing limitations	No surface occupancy	Closed
Conifer/mountain shrub	519	0	0	43	0	0
Desert shrub	70,846	0	752	13,817	16,843	5,019
Invasive species and weeds	367	0	32	432	4	2
Pinyon-juniper woodland	59,056	71	2,660	159,258	17,518	9,579
Riparian/wetland	2,997	0	0	2,444	4,573	284
Sagebrush/ perennial grass	14,142	21	141	35,133	402	96
Totals	**147,927**	**92**	**3,585**	**211,127**	**39,340**	**14,980**

Table 4.153. Alternative B–Acreage of Each Vegetation Type by Oil and Gas Leasing Category in the Monument Upwarp RFD

Vegetation Type	Standard lease terms	Controlled surface use	Controlled surface use and timing limitations	Timing limitations	No surface occupancy	Closed
Conifer/mountain shrub	4,879	2	0	3,030	56	1,126
Desert shrub	85,051	315	9,617	75,456	5,224	74,623
Invasive species and weeds	94	0	7	671	53	227
Pinyon-juniper woodland	92,198	10,721	9,373	325,073	25,242	282,993
Riparian/wetland	680	27	75	1,727	1,318	2,836
Sagebrush/ perennial grass	8,285	579	270	33,259	3,760	27,967
Totals	**191,187**	**11,644**	**19,342**	**439,216**	**35,653**	**389,772**

Table 4.154. Alternative B–Acreage of Each Vegetation Type by Oil and Gas Leasing Category in the Paradox Fault and Fold Belt RFD

Vegetation Type	Standard lease terms	Controlled surface use	Controlled surface use and timing limitations	Timing limitations	No surface occupancy	Closed
Conifer/mountain shrub	611	73	0	438	11	14
Desert shrub	1,954	24,693	1	6,600	25,955	4,080
Invasive species and weeds	495	16	0	868	125	0
Pinyon-juniper woodland	14,092	24,454	29	86,580	21,365	6,708
Riparian/wetland	96	1,286	7	405	1,686	470
Sagebrush/ perennial grass	6,863	4,534	0	30,037	295	71
Totals	**24,111**	**55,056**	**37**	**124,928**	**49,437**	**11,343**

Under this alternative, there would be 8 wells drilled in the Monument Upwarp over the life of the plan. This would result in approximately 76.8 acres of surface disturbance, which could occur in any of the vegetation types except for riparian. This is 1 (14%) more well and 9.6 (147%) more acres of disturbance than would occur under Alternative A.

Under this alternative, there would be 20 wells drilled in the Paradox Fault and Fold Belt over the life of the plan, resulting in approximately 192.0 acres of surface disturbance, which could

occur in any of the vegetation types except for riparian. This is 5 (20%) fewer wells and 48 (20%) fewer acres of disturbance than would occur under Alternative A. Across the three RFD areas, there would be 7 (9.6%) fewer wells and 67.2 (9.6%) fewer acres of disturbance under Alternative B than would occur under Alternative A.

Weed Dispersal Associated with Roads

Under Alternative B, there would be fewer acres of all vegetation types subject to invasion by noxious weeds and invasive species than under Alternative A due to a reduction in new roads for oil and gas activity. Alternative B would have fewer negative impacts to vegetation than Alternative A, because there would be fewer acres subject to weed infestation. Table 4.155 provides the percent difference in acres of roadside vegetation subject to weed infestation between Alternatives A and B by vegetation type.

Table 4.155. Percent Difference in Acres of Roadside Vegetation Subject to Weed Infestation

Vegetation Type	Percent Difference Compared with Alternative A
Conifer and mountain shrub	15% less
Desert shrub	15% less
Invasive species and noxious weeds	7% less
Pinyon-juniper woodland	12% less
Riparian and wetland	10% less
Sagebrush and perennial grassland	20% less
Total	**20% less**

Lands Available for Mineral Material Disposal

Under Alternative B, 365,170 acres of land in the Monticello FO would be available for disposal of mineral materials subject to standard terms and conditions. That is 219,100 acres (37%) fewer than are currently subject to standard terms and conditions for mineral materials disposal under Alternative A.

There would be 876,736 acres subject to special conditions. That is 55,666 acres (7%) more than are currently subject to special conditions for disposal of mineral materials under Alternative A.

There would be 542,402 acres closed to disposal of mineral materials. That is 168,552 acres (45%) more than would be closed to disposal under Alternative A.

Lands Available for Mineral Entry

Under Alternative B, 1,521,656 acres of land in the Monticello FO would be open to mineral entry. That is 8% fewer acres than would be open under Alternative A.

There would be 263,467 acres recommended to be withdrawn from mineral entry. That is 131,087 acres (99%) more than would be withdrawn from mineral entry under Alternative A.

Geophysical Activity

Under Alternative B, the qualitative impacts of geophysical activity on vegetation resources would be the same as those discussed under Alternative A. There would be approximately 794 acres of surface disturbance associated with geophysical exploration under this alternative. This is approximately 10% fewer acres of disturbance than would be expected under Alternative A, which could result in slightly reduced impacts overall due to the decreased acreage open to exploration.

4.3.17.2.5.3. Alternative C

Under Alternative C, the qualitative impacts of minerals decisions on vegetation resources would be the same as those discussed under Alternative A. The major difference in impacts between this alternative and the No Action Alternative is the reduction in acres available for management of oil and gas leasing and mineral material disposal with standard stipulations. Acres available for oil and gas leasing by vegetation type in each of the RFD areas are provided in Tables 4.156–4.158.

Under both Alternatives A and C, there would be 41 wells drilled in the Blanding Sub-basin over the life of the plan. This would result in approximately 393.6 acres of surface disturbance, which could occur in any of the vegetation types except for riparian.

Under this alternative, there would be 9 wells drilled in the Monument Upwarp over the life of the plan. This would result in approximately 86.4 acres of surface disturbance, which could occur in any of the vegetation types except for riparian. This is 2 (29%) more wells and 19.2 (29%) more acres of disturbance than would occur under Alternative A.

Table 4.156. Alternative C–Acreage of Each Vegetation Type by Oil and Gas Leasing Category In the Blanding Sub-basin RFD

Vegetation Type	Standard lease terms	Controlled surface use	Controlled surface use and timing limitations	Timing limitations	No surface occupancy	Closed
Conifer/mountain shrub	544	0	0	18	0	0
Desert shrub	90,330	6	1,341	7,571	2,227	5,803
Invasive species and weeds	490	0	32	313	0	2
Pinyon-juniper woodland	128,580	72	3,041	103,630	3,132	9,686
Riparian/wetland	5,841	2	90	1,799	2,158	409
Sagebrush/ perennial grass	26,746	21	230	22,615	227	96
Totals	**252,531**	**101**	**4,734**	**135,946**	**7,744**	**15,996**

Table 4.157. Alternative C–Acreage of Each Vegetation Type by Oil and Gas Leasing Category In the Monument Upwarp RFD

Vegetation Type	Standard lease terms	Controlled surface use	Controlled surface use and timing limitations	Timing limitations	No surface occupancy	Closed
Conifer/mountain shrub	7,101	43	15	808	0	1,126
Desert shrub	87,707	166	12,831	73,966	21,811	53,806
Invasive species and weeds	94	0	14	671	46	227
Pinyon-juniper woodland	179,233	4,434	35,318	242,232	2,773	281,611
Riparian/wetland	1,711	27	293	1,571	306	2,755
Sagebrush/ perennial grass	14,465	134	3,536	27,971	61	27,954
Totals	**290,311**	**4,804**	**52,007**	**347,219**	**24,997**	**367,479**

Table 4.158. Alternative C–Acreage of Each Vegetation Type by Oil and Gas Leasing Category In the Paradox Fault and Fold Belt RFD

Vegetation Type	Standard lease terms	Controlled surface use	Controlled surface use and timing limitations	Timing limitations	No surface occupancy	Closed
Conifer/mountain shrub	995	61	13	54	11	14
Desert shrub	12,655	20,392	18,312	4,804	3,040	4,080
Invasive species and weeds	1,148	16	86	245	8	0
Pinyon-juniper woodland	52,674	20,348	21,710	49,591	2,197	6,708
Riparian/wetland	636	1,073	1,112	154	505	470
Sagebrush/ perennial grass	11,807	4,233	349	25,200	141	71
Totals	**79,915**	**46,123**	**41,582**	**80,048**	**5,902**	**11,343**

Under this alternative, there would be 24 wells drilled in the Paradox Fault and Fold Belt over the life of the plan. This would result in approximately 230.4 acres of surface disturbance, which could occur in any of the vegetation types except for riparian. This is 1 (4%) fewer wells and 9.6 (4%) fewer acres of disturbance than would occur under Alternative A. Across the three RFD areas, there would be 1 (1.4%) more well and 9.6 (1.4%) more acres of disturbance under Alternative C than would occur under Alternative A.

Weed Dispersal Associated with Roads

Under Alternative C, there would be fewer acres of all vegetation types subject to invasion by noxious weeds and invasive species than under Alternative A due to a reduction in new roads for oil and gas activity. Alternative C would have fewer negative impacts to vegetation than Alternative A because there would be fewer acres subject to weed infestation. Table 4.159 provides the percent difference in acres of roadside vegetation subject to weed infestation between Alternatives A and C by vegetation type.

Table 4.159. Percent Difference in Acres of Roadside Vegetation Subject to Weed Infestation

Vegetation Type	Percent Difference Compared with Alternative A
Conifer and mountain shrub	3% less
Desert shrub	4% less
Invasive species and noxious weeds	1% more
Pinyon-juniper woodland	7% less
Riparian and wetland	6% more
Sagebrush and perennial grassland	10% more
Total	**7% less**

Lands Available for Mineral Material Disposal

Under Alternative C, 629,472 acres of land in the Monticello FO would be available for disposal of mineral materials subject to standard terms and conditions. That is 45,202 acres (8%) more than are currently subject to standard terms and conditions for mineral materials disposal under Alternative A.

There would be 729,567 acres subject to special conditions. That is 91,503 fewer acres (11%) than are currently subject to special conditions for disposal of mineral materials under Alternative A.

There would be 435,338 acres closed to disposal of mineral materials. That is 61,488 acres (16%) more than currently closed to disposal under Alternative A.

Lands Available for Mineral Entry

Under Alternative C, 1,637,688 acres of land in the Monticello FO would be open to mineral entry. That is 15,055 fewer acres (1%) than are currently open under Alternative A.

There would be 147,435 acres recommended to be withdrawn from mineral entry. That is 15,055 acres (11%) more than are currently withdrawn from mineral entry under Alternative A.

Geophysical Activity

Under Alternative C, the qualitative impacts of geophysical activity on vegetation resources would be the same as those discussed under Alternative A. There would be approximately 904 acres of surface disturbance associated with geophysical exploration under this alternative. This

is approximately 2% more acres of disturbance than would be expected under Alternative A, which would result in a slightly greater impacts overall, due to the increased acreage open to exploration.

4.3.17.2.5.4. Alternative D

Under Alternative D, the qualitative impacts of minerals decisions on vegetation resources would be the same as those discussed under Alternative A. The major difference in impacts between this alternative and the No Action Alternative is a reduction in acres available for management of oil and gas leasing and mineral materials disposal with standard stipulations. Acres available for oil and gas leasing by vegetation type in each of the RFD areas are provided in Tables 4.160–4.162.

Under Alternatives A, C, and D, there would be 41 wells drilled in the Blanding Sub-basin over the life of the plan. This would result in approximately 393.6 acres of surface disturbance, which could occur in any of the vegetation types except for riparian.

Under Alternatives C and D, there would be 9 wells drilled in the Monument Upwarp over the life of the plan. This would result in approximately 86.4 acres of surface disturbance, which could occur in any of the vegetation types except for riparian. This is 2 (29%) more wells and 19.2 (29%) more acres of disturbance than would occur under Alternative A.

Under Alternatives A and D, there would be 25 wells drilled in the Paradox Fault and Fold Belt over the life of the plan. This would result in approximately 240.0 acres of surface disturbance. This disturbance could occur in any of the vegetation types except for riparian. Across the three RFD areas, there would be 2 (29%) more wells and 19.2 (29%) more acres of disturbance than under Alternative A, and more wells and disturbance than would occur under any of the other management alternatives.

Table 4.160. Alternative D–Acreage of Each Vegetation Type by Oil and Gas Leasing Stipulations In the Blanding Sub-basin RFD Area

Vegetation Type	Standard lease terms	Controlled surface use	Controlled surface use and timing limitations	Timing limitations	No surface occupancy	Closed
Conifer/mountain shrub	0	0	0	0	555	7
Desert shrub	5,721	0	0	1,726	94,363	5,468
Invasive species and weeds	2	0	0	0	604	231
Pinyon-juniper woodland	9,271	0	0	3,614	165,414	69,842
Riparian/wetland	409	0	0	2,158	6,596	1,136
Sagebrush/ perennial grass	96	0	0	247	32,585	17,008
Totals	**15,499**	**0**	**0**	**7,745**	**300,117**	**93,692**

Table 4.161. Alternative D–Acreage of Each Vegetation Type by Oil and Gas Leasing Category In the Monument Upwarp RFD

Vegetation Type	Standard lease terms	Controlled surface use	Controlled surface use and timing limitations	Timing limitations	No surface occupancy	Closed
Conifer/mountain shrub	7,597	0	0	459	0	1,037
Desert shrub	145,976	0	0	49,886	1,895	52,530
Invasive species and weeds	606	0	0	220	0	227
Pinyon-juniper woodland	312,464	0	0	153,795	2,550	276,791
Riparian/wetland	3,354	0	0	371	504	2,432
Sagebrush/ perennial grass	30,300	0	0	15,990	0	27,830
Totals	**500,297**	**0**	**0**	**220,721**	**4,949**	**360,847**

Table 4.162. Alternative D–Acreage of Each Vegetation Type by Oil and Gas Leasing Category In the Paradox Fault and Fold Belt RFD

Vegetation Type	Standard lease terms	Controlled surface use	Controlled surface use and timing limitations	Timing limitations	No surface occupancy	Closed
Conifer/mountain shrub	1,105	24	0	5	0	14
Desert shrub	35,128	0	0	24,315	0	3,840
Invasive species and weeds	1,245	2	0	256	0	0
Pinyon-juniper woodland	90,119	440	0	56,476	0	6,191
Riparian/wetland	1,812	1	0	1,819	0	317
Sagebrush/ perennial grass	21,233	2,096	0	18,401	0	71
Totals	**150,642**	**2,563**	**0**	**101,272**	**0**	**10,433**

Weed Dispersal Associated with Roads

Under Alternative D, there would be more acres subject to invasion by noxious weeds and invasive species than under Alternative A due to an increase in new roads for oil and gas activity. Alternative D would have greater negative impacts to vegetation than Alternative A because there would be more acres subject to weed infestation. Table 4.163 provides the percent difference in acres of roadside vegetation subject to weed infestation between Alternatives A and D by vegetation type.

Table 4.163. Percent Difference in Acres of Roadside Vegetation Subject to Weed Infestation

Vegetation Type	Percent Difference Compared with Alternative A
Conifer and mountain shrub	0%
Desert shrub	2% more
Invasive species and noxious weeds	2% more
Pinyon-juniper woodland	0%
Riparian and wetland	7% more
Sagebrush and perennial grassland	0%
Total	**1% more**

Lands Available for Mineral Material Disposal

Under Alternative D, 962,283 acres of land in the Monticello FO would be available for disposal of mineral materials subject to standard terms and conditions. That is 378,013 acres (65%) more than are currently subject to standard terms and conditions for mineral materials disposal under Alternative A.

Under this alternative, there would be 420,998 acres subject to special conditions. This is 400,072 fewer acres (49%) than would be subject to special conditions for disposal of mineral materials under Alternative A.

Under this alternative, there would be 401,027 acres closed to disposal of mineral materials. That is 27,177 acres (7%) more than would be closed to disposal under Alternative A.

Lands Available for Mineral Entry

Under Alternative D, 1,737,999 acres of land in the Monticello FO would be open to mineral entry. That is 85,256 acres (5%) more than would be open to mineral entry under Alternative A.

Under Alternative D, it would be recommended that 47,124 acres be withdrawn from mineral entry. That is 85,256 fewer acres (64%) than would be withdrawn under Alternative A.

Geophysical Activity

Under Alternative D, the qualitative impacts of geophysical activity on vegetation resources would be the same as those discussed under Alternative A. There would be approximately 924 acres of surface disturbance associated with geophysical exploration under this alternative. This

is approximately 38 acres (4%) more disturbance than would occur under Alternative A, which would result in a slightly greater impact overall due to the increased acreage open to exploration.

4.3.17.2.5.5. Alternative E

Under Alternative E, the qualitative impacts of minerals decisions on vegetation resources would be the same as those discussed under Alternative A. The major difference in impacts between this alternative and the No Action Alternative would be the reduction in acres available for management of oil and gas leasing and mineral materials disposal due to minerals leasing restrictions within the 582,357 acres of non-WSA lands with wilderness characteristics. These lands would be closed to minerals leasing and mineral materials disposal, closed to off-route OHV use, closed to new road construction to protect non-WSA lands with wilderness characteristics, and surface disturbance impacts would be limited to VRM Class objectives. These restrictions on minerals-related surface disturbance would have long-term, beneficial impacts on vegetation resources within the planning area. Nevertheless, RFD predictions of oil and gas development within the planning area under Alternative E would be approximately 74% of the RFD-predicted level of development under Alternative A (see below). Acres available for oil and gas leasing by vegetation type in each of the RFD areas are provided in Tables 4.164–4.166. The acres and location of predicted surface disturbance is similar for each alternative.

Under this alternative, there would be 36 wells drilled in the Blanding Sub-basin over the life of the plan. This would result in approximately 345 acres of surface disturbance, which could occur in any of the vegetation types except for riparian. This is 5 (12%) fewer wells and 48.6 (12%) fewer acres of disturbance than would occur under Alternative A.

Under this alternative, there would be 3 wells drilled in the Monument Upwarp over the life of the plan. This would result in approximately 30 acres of surface disturbance, which could occur in any of the vegetation types except for riparian. This is 4 (57%) fewer wells and 37.2 (55%) fewer acres of disturbance than would occur under Alternative A.

Table 4.164. Alternative E–Acreage of Each Vegetation Type by Oil and Gas Leasing Stipulations In the Blanding Sub-basin RFD Area

Vegetation Type	Standard lease terms	Controlled surface use	Controlled surface use and timing limitations	Timing limitations	No surface occupancy	Closed
Conifer/mountain shrub	519	0	0	43	0	0
Desert shrub	59,650	0	752	13,813	9,744	23,319
Invasive species and weeds	366	0	32	432	1	6
Pinyon-juniper woodland	52,377	71	2,660	159,248	7,097	26,688
Riparian/wetland	2,935	0	0	2,444	3,140	1,780
Sagebrush/ perennial grass	13,816	21	141	35,133	312	512
Totals	**129,663**	**92**	**3,585**	**211,113**	**20,294**	**52,305**

Table 4.165. Alternative E–Acreage of Each Vegetation Type by Oil and Gas Leasing Stipulation In the Monument Upwarp RFD Area

Vegetation Type	Standard lease terms	Controlled surface use	Controlled surface use and timing limitations	Timing limitations	No surface occupancy	Closed
Conifer/mountain shrub	4,652	2	0	1,680	43	2,716
Desert shrub	18,125	302	2,021	31,560	1,272	197,006
Invasive species and weeds	5	0	1	86	9	951
Pinyon-juniper woodland	32,825	914	2,783	135,607	4,923	568,548
Riparian/wetland	327	1	39	787	694	4,814
Sagebrush/ perennial grass	4,428	323	119	14,532	850	53,867
Totals	**60,362**	**1,542**	**4,963**	**184,252**	**7,791**	**827,902**

Table 4.166. Alternative E–Acreage of Each Vegetation Type by Oil and Gas Leasing Stipulation In the Paradox Fault and Fold Belt RFD Area

Vegetation Type	Standard lease terms	Controlled surface use	Controlled surface use and timing limitations	Timing limitations	No surface occupancy	Closed
Conifer/mountain shrub	611	53	0	425	0	59
Desert shrub	1,787	11,068	0	5,942	12,225	32,261
Invasive species and weeds	495	9	0	868	89	42
Pinyon-juniper woodland	11,570	8,071	13	69,380	11,598	52,625
Riparian/wetland	33	982	2	278	487	2,167
Sagebrush/ perennial grass	6,841	3,116	0	29,038	123	2,682
Totals	**21,337**	**23,299**	**15**	**105,931**	**24,522**	**89,836**

Under this alternative, there would be 15 wells drilled in the Paradox Fault and Fold Belt over the life of the plan. This would result in approximately 143 acres of surface disturbance, which could occur in any of the vegetation types except for riparian. This is 10 (40%) fewer wells and 97 (40%) fewer acres of disturbance than would occur under Alternative A. Compared to the Alternative A RFD areas, this represents a 26% reduction in expected oil and gas development

over the lifetime of the Plan and the lowest level of disturbance that would occur under any of the management alternatives.

Lands Available for Mineral Materials Disposal

Under this alternative, areas with non-WSA lands with wilderness characteristics would be closed to disposal of mineral materials, which would encompass approximately 1,025,378 acres (58% of the planning area). Under Alternative E, 37% more acreage would be closed to disposal than under Alternative A.

Lands Available for Mineral Entry

Non-WSA lands with wilderness characteristics (582,360 acres) would be recommended for withdrawal from mineral entry.

Under Alternative E, 1,521,656 acres of land in the Monticello FO would be open to mineral entry. That is 8% fewer acres than are currently open under Alternative A. There would be 263,467 acres recommended to be withdrawn from mineral entry, which is 131,087 acres (50%) more than would be withdrawn from mineral entry under Alternative A.

Geophysical Activity

Non-WSA lands with wilderness characteristics would be closed for geophysical exploration.

Under Alternative E, the qualitative impacts of geophysical activity on vegetation resources would be the same as those discussed under Alternative A. There would be approximately 591 acres of surface disturbance associated with geophysical exploration under this alternative. That is approximately 33% fewer acres of disturbance than would be expected under Alternative A, which could result in reduced impacts to vegetation resources from the decreased acreage open to this form of minerals exploration.

4.3.17.2.6. Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Vegetation

4.3.17.2.6.1. Alternatives A–D

Under Alternatives A to D, the Monticello FO would not manage the planning area for the preservation of non-WSA lands with wilderness characteristics.

4.3.17.2.6.2. Alternative E

Under Alternative E, approximately 582,357 acres of non-WSA lands with wilderness characteristics would be managed to preserve their wilderness values. The impacts on vegetation resources would be beneficial in the long-term because surface disturbance related impacts to vegetation communities would be limited. There would be short-term and long-term indirect impacts to vegetation resources from preservation of non-WSA lands with wilderness characteristics because of prohibitions on vegetation treatments, fire treatments, and woodland harvesting that would maintain the risks of wildland fire and the spread of invasive species.

4.3.17.2.7. Impacts of Paleontological Resources Decisions on Vegetation

4.3.17.2.7.1. Alternative A

Under Alternative A, paleontology decisions that could impact vegetation resources include increased visitor use associated with fossil collection, which could have short-term adverse impacts on vegetation due to trampling. It is BLM policy that only non-mechanized tools are allowed for use by fossil hunters and that any surface disturbances caused by fossil collecting activities have negligible impacts on planning area resources. These requirements would minimize the adverse impacts on vegetation caused by paleontology-related surface disturbances.

4.3.17.2.7.2. Alternatives B, C, D and E

Because the BLM's fossil collecting policy and resource protection stipulations would be applicable to all of the proposed alternatives, the impacts of paleontology management decisions on vegetation resources under the action alternatives would be the same as those discussed under Alternative A.

4.3.17.2.8. Impacts of Recreation Decisions on Vegetation

4.3.17.2.8.1. Alternative A

Under Alternative A, all developed recreation sites would be recommended for withdrawal from mineral entry, closed to disposal of mineral materials, and open for oil and gas leasing subject to NSO. In addition, grazing would be unavailable in developed sites and collection of woodland products would not be allowed. These requirements would decrease the intensity of long-term impacts on vegetation in the project area by decreasing the amount of surface disturbance in the SRMAs compared to other areas in the Monticello FO. There would, however, still be surface disturbance associated with trampling and crushing of vegetation by humans, horses, and vehicles. In addition, there is potential for introduction of weed seeds by visitors bringing clothing and equipment to the area from around the country. This disturbance could lead to the introduction of invasive plant species as discussed in previous sections. The adverse impacts of recreation decisions would be partially mitigated by the required reclamation of disturbed areas to meet Utah's Rangeland Health Standards (Appendix D).

The Cedar Mesa Cultural SRMA (375,734 acres) would require pets to be leashed, camping only at campsites, and a maximum of 196 overnight visitors per day. This would reduce adverse impacts from surface disturbance associated with visitors. The White Canyon SRMA (2,828 acres) would have no limit on group size, camping location, or vehicle use. This could result in short- and long-term, adverse impacts to vegetation from surface disturbance. Table 4.167 lists the acreage of each vegetation type included in the Cedar Mesa Cultural SRMA and White Canyon SRMA. The size of these SRMAs would be the same under all management alternatives.

Table 4.167. Acreage of Each Vegetation Type in the Cedar Mesa Cultural and White Canyon SRMAs Under All Alternatives

Vegetation Type	Cedar Mesa Cultural SRMA	White Canyon SRMA
Conifer/mountain shrub	213	0
Desert shrub	105,904	289
Invasive species and weeds	111	1
Pinyon-juniper woodland	230,453	2,521
Riparian/wetland	4,061	17
Sagebrush/ perennial grassland	32,482	0
Total	**373,224**	**2,828**

Under Alternative A, the Dark Canyon SRMA (30,820 acres) and the Indian Creek SRMA (89,271 acres) would be managed as part of a larger Canyon Basins SRMA (214,390 acres). There would be no limit on group size or vehicle use, but camping would be prohibited within the Indian Creek riparian corridor and limited to designated sites outside the corridor. These restrictions would lessen the adverse impacts of visitor traffic on native vegetation as explained in the above sections. However, this management would result in short- and long-term, adverse impacts to vegetation from surface disturbance. The size of the Dark Canyon and Indian Creek SRMA would not differ under Alternatives B, C, and D. In Tables 4.168 and 4.169, the acreage of each vegetation type included in each SRMA is listed for each alternative.

Under Alternative A, the San Juan River SRMA (15,100 acres) would allow 40,000 user days per year and vehicle camping would not be restricted. These stipulations allow for surface disturbance, which could have long-term, adverse impacts on vegetation in the SRMA as discussed in previous sections. In Table 4.170, the total acreage of each type of vegetation for the San Juan River SRMA is listed for each alternative.

Table 4.168. Acreage of Each Vegetation Type in the Dark Canyon SRMA for All Alternatives

Vegetation Type	Alternative A (Canyon Basins SRMA)	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	2,254	391	391	391
Desert shrub	43,765	908	908	908
Invasive species and weeds	56	3	3	3
Pinyon-juniper woodland	190,473	28,587	28,587	28,587
Riparian/wetland	2,931	351	351	351
Sagebrush/ perennial grass	17,562	577	577	577
Total	**257,041**	**30,817**	**30,817**	**30,817**

Table 4.169. Acreage of Each Vegetation Type in the Indian Creek SRMA for All Alternatives

Vegetation Type	Alternative A (Canyon Basins SRMA)	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	2,254	198	198	198
Desert shrub	43,765	40,818	40,818	40,818
Invasive species and weeds	56	26	26	26
Pinyon-juniper woodland	190,473	42,278	42,278	42,278
Riparian/wetland	2,931	2,195	2,195	2,195
Sagebrush/ perennial grass	17,562	3,741	3,741	3,741
Total	**257,041**	**89,256**	**89,256**	**89,256**

Table 4.170. Acreage of Each Vegetation Type in the San Juan River SRMA for each Alternative

Vegetation Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	0	0	0	0
Desert shrub	3,733	3,268	3,082	1,650
Invasive species and weeds	0	0	0	0
Pinyon-juniper woodland	4,134	4,117	3,979	2,604
Riparian/wetland	2,508	2,117	2,097	1,640
Sagebrush/ perennial grass	3	3	3	3
Total	**10,378**	**9,505**	**9,161**	**5,897**

4.3.17.2.8.2. Alternative B

Under Alternative B, the impacts of recreation management decisions on vegetation resources would include following impacts in addition to the qualitative impacts discussed under Alternative A.

Under Alternative B, the San Juan River SRMA would include 12.5% less of the desert shrub vegetation type, 0.4% less pinyon-juniper woodland, and 15.6% less riparian/wetland vegetation than under Alternative A. There would be 30,000 user days permitted per year, which is 25% fewer visitors allowed per year than under Alternative A. Vehicle camping would be restricted to designated areas. These stipulations would allow for less surface disturbance than Alternative A, but there would still be long-term, adverse impacts on vegetation in the SRMA, as discussed in previous sections.

The Cedar Mesa Cultural SRMA would be available for livestock use and vegetation treatments, pets would not be allowed in canyons requiring permits, hiking and overnight camping permits would be limited to 25 visitors per day, and the area would be managed as VRM III and IV.

These actions would result in a decreased level of surface disturbance compared with Alternative A, depending on the level of disturbance resulting from livestock use and vegetation treatments. Under Alternative B, the Dark Canyon SRMA would limit group sizes to 10 and 12 people (private and commercial, respectively), would allow 15 private visitors per day, camping would be allowed in designated areas only, and collection of woodland products, including deadwood for campfires, would be prohibited. Visitor use would result in short- and long-term, adverse impacts on vegetation due to surface disturbance, but to a lesser extent than under Alternative A.

Dispersed camping would not be allowed in the Indian Creek riparian corridor and would be limited to designated sites elsewhere. This would result in short- and long-term, adverse impacts on vegetation from surface disturbance associated with visitors, but to a lesser extent than under Alternative A because of limited visitor and camping permits and other restrictions.

The White Canyon SRMA would limit use through a backcountry permit system. This would result in short- and long-term, adverse impacts on vegetation due to surface disturbance, but to a lesser degree than under Alternative A due to resource protection measures.

4.3.17.2.8.3. Alternative C

Under Alternative C, the impacts of recreation management decisions on vegetation resources would include the following impacts in addition to the qualitative impacts discussed under Alternative A.

Under Alternative C, the San Juan River SRMA (see Table 4.170) would include 17.5% less of the desert shrub vegetation type, 3.8% less pinyon-juniper woodland, and 16.4% less riparian/wetland vegetation than under Alternative A. There would be 40,000 user days per year permitted, which is the same level of visitation allowed under Alternative A. Vehicle camping would be restricted to designated areas. These stipulations would allow for less surface disturbance than Alternative A, but there would still be long-term, adverse impacts on vegetation in the SRMA as discussed in previous sections.

Under Alternative C, the Cedar Mesa Cultural SRMA would be managed the same as under Alternative B with the following exceptions: commercial and private use of woodland products would be allowed and campfires would only be allowed on mesa tops. This would result in an increased level of surface disturbance compared with Alternatives A and B, depending on the level of disturbance resulting from livestock use and vegetation treatments.

Under Alternative C, the Dark Canyon SRMA would be managed the same as Alternative B, except there group size would be limited to 15 people and 20 private visitors per day, which is 25% more than would be permitted under Alternative B. Camping would be allowed in designated areas only if and where necessary, and leashed pets would be allowed. This would result in reduced short- and long-term, adverse impacts on vegetation due to surface disturbance compared to Alternative A, but greater impacts than under Alternative B.

In the Indian Creek SRMA, dispersed camping would be allowed in the Indian Creek Corridor and in designated dispersed camping zones (see Summary Table of Alternatives). Because of these camping restrictions, this alternative would have fewer short- and long-term, adverse impacts on vegetation due to surface disturbance associated with visitors than under Alternative A.

Under Alternative C, the impacts in on vegetation in the White Canyon SRMA would be the same as under Alternative B.

4.3.17.2.8.4. Alternative D

Under Alternative D, the impacts of recreation management decisions on vegetation resources would include following impacts in addition to the qualitative impacts discussed under Alternative A.

Under Alternative D, the San Juan River SRMA would include 55.8% less of the desert shrub vegetation type, 37.0% less pinyon-juniper woodland, and 34.6% less riparian/wetland vegetation than under Alternative A. There would be 45,000 user days per year permitted, which is an increase of 5,000 user days from Alternative A. Vehicle camping would not be restricted within the SRMA except for the bench above Sand Island Recreation Area, which would be closed to camping, and camping would be closed within one-half mile of designated campsites area wide. These stipulations would allow for a slightly reduced amount of surface disturbance as would occur under Alternative A, including long-term, adverse impacts on vegetation in the SRMA as discussed in previous sections.

Under Alternative D, the Cedar Mesa Cultural SRMA would be managed the same as under Alternative C with the following exception: a total of 216 overnight visitors per day would be permitted, which is 20 (10%) more overnight visitors than under Alternative A. This could result in an increased level of surface disturbance compared with Alternatives A, B, and C, depending on the level of disturbance resulting from livestock use and vegetation treatments.

Under Alternative D, the Dark Canyon SRMA would have no limit on the number of private visitors per day and dispersed camping would be allowed in some areas. This would result in short- and long-term, adverse impacts on vegetation due to surface disturbance, but to a lesser extent than under Alternative A.

Under Alternative D, management of the Indian Creek SRMA would be the same as under Alternative C. The White Canyon SRMA would be managed the same as under Alternative C, except that campfires would be allowed and there would be no permit system. There would be fewer short- and long-term, adverse impacts on vegetation due to surface disturbance than under Alternative A.

4.3.17.2.8.5. Alternative E

Under Alternative E, the impacts of recreation management decisions on native vegetation would include the following impacts in addition to those discussed under Alternative B.

Non-WSA lands with wilderness characteristics within proposed SRMAs would be closed to mineral leasing, closed to new road construction, managed under VRM I objectives, closed to woodland harvesting, closed to OHV use, closed to disposal of mineral materials, and proposed for withdrawal from mineral entry. Lands without wilderness characteristics would be managed as VRM III and IV. These stipulations would result in less surface disturbance than under the other four alternatives, but there would still be potential for long-term, adverse impacts on native vegetation within the SRMAs as discussed in previous sections.

In the Cedar Mesa Cultural SRMA, there would be special conditions on livestock use on non-WSA lands with wilderness characteristics. In addition, no new vegetation treatments or wildlife

habitat improvements would be allowed in non-WSA lands with wilderness characteristics. Finally, non-WSA lands with wilderness characteristics would be managed as VRM class I. These additional protections would result in less surface disturbance in this SRMA compared with the other four alternatives.

Vegetation resources within all of the proposed SRMAs would be impacted by the above mentioned stipulations to protect non-WSA lands with wilderness characteristics. The non-WSA lands with wilderness characteristics affected within each SRMA would be: San Juan SRMA (4,124 acres or 40% of the SRMA); Cedar Mesa Cultural SRMA (109,700 acres or 29% of the SRMA); Dark Canyon (2,522 acres or 8% of the SRMA); Indian Creek SRMA (47,393 acres or 53% of the SRMA); and White Canyon SRMA (2,092 acres or 74% of the SRMA).

Overall, Alternative E would have fewer adverse impacts on native vegetation in SRMAs than Alternative A and the other action alternatives because of increased protections to limit surface disturbances in non-WSA lands with wilderness characteristics.

4.3.17.2.9. Impacts of Riparian Decisions on Vegetation

4.3.17.2.9.1. Alternative A

Under Alternative A, riparian areas would be managed as NSO for oil and gas leasing. They would, however, be open to mineral entry and disposal of mineral materials, but not in active floodplains or within 100 m of riparian areas. Woodland product collection would be prohibited. In addition, riparian areas would be grazed according to the Guidelines for Grazing Management to achieve the Standards for Rangeland Health, which require proper riparian functioning condition (Appendix D). The BLM would avoid degradation of habitats that could result in the loss of riparian vegetation. The reduction in surface disturbance associated with these restrictions would help decrease the establishment of noxious weeds and invasive plant species in riparian areas in the Monticello FO. Because livestock grazing would be allowed, there would continue to be indirect, potentially adverse impacts from surface disturbance of riparian soils and vegetation associated with cattle hooves and grazing (Dobson 1973, Kauffman et al. 1983). Reduced surface disturbance in riparian vegetation allows the establishment of native vegetation, which facilitates proper riparian functioning. Vegetation treatments, including the use of mechanized or motorized equipment, would be allowed in riparian areas. These treatments would have both beneficial and adverse impacts on vegetation in riparian vegetation. Beneficial impacts would include reduction of weed populations and the restoration of diverse native vegetation. Adverse impacts would include crushing and inadvertent removal of native vegetation during the treatment process.

4.3.17.2.9.2. Alternatives B and C

Under Alternatives B, C, and E, the impacts of riparian management decisions on vegetation resources would include the following impacts in addition to those discussed in Alternative A. OHV routes in selected riparian areas would be closed in Functioning At Risk riparian areas if site-specific analysis indicates that OHV use is contributing to riparian degradation. Some riparian areas would be unavailable for livestock grazing, while others would be subject to seasonal restrictions and forage utilization limits if they are found to be Functioning At Risk. These restrictions would reduce the number of acres of native vegetation subject to potentially adverse impacts from surface disturbance in sensitive riparian areas. These alternatives would be more beneficial to vegetation resources when compared to Alternative A.

4.3.17.2.9.3. Alternative D

Under Alternative D, the impacts on vegetation resources from riparian decisions would be the same as those discussed under Alternative A because the management decisions would be the same.

4.3.17.2.9.4. Alternative E

Under Alternative E, the impacts of riparian management decisions on vegetation resources would include the following impacts in addition to those discussed under Alternative B. Non-WSA lands with wilderness characteristics would be managed as closed to mineral leasing, closed to OHV use, proposed for withdrawal from mineral entry, ROW exclusion areas, closed to private and commercial woodland harvest, and managed as VRM I. These restrictions would reduce the number of acres of native vegetation subject to potentially adverse impacts from surface disturbance in sensitive riparian areas. Alternative E would be more beneficial to vegetation resources when compared to any of the management alternatives.

4.3.17.2.10. Impacts of Soils and Watershed Decisions on Vegetation

4.3.17.2.10.1. Alternative A

Under Alternative A, soils and watershed decisions would comply with maintenance of riparian preferred future condition and Guidelines for Grazing Management to achieve the Standards for Rangeland Health. In addition, activities in the Monticello FO would be managed to minimize and mitigate damage to soils, and activities located in areas with sensitive soils (i.e., saline, gypsiferous, or highly erodible) would be subject to site-specific NEPA (see Table 4.81 and 4.82 in Section 4.3.13, Soils and Water Resources). These restrictions would decrease the number of acres in the Monticello FO subject to adverse impacts on vegetation resources associated with surface-disturbing activities. There would not be any slope restrictions on allowable disturbance under this alternative.

4.3.17.2.10.2. Alternatives B and E

Under Alternatives B and E, the impacts of soils and watershed management decisions on vegetation resources would include the following in addition to impacts discussed under Alternative A. Surface-disturbing activities would not be permitted on slopes greater than 40%. This would exclude 87,456 acres (approximately 5%) of land in the Monticello FO from potential development, which would eliminate adverse impacts from surface disturbance on vegetation growing on slopes greater than 40%. As a result, actions associated with this alternative would have fewer adverse impacts on vegetation resources than Alternatives A, C, and D. If surface-disturbing activities cannot be avoided on slopes between 21% and 40%, a plan including an erosion control strategy and a BLM-approved survey and design would be required. The acres of each vegetation type located in areas where the slopes are greater than 40% or 21% to 40% are provided in Table 4.171.

Table 4.171. Acres of Each Vegetation Type by Slope Steepness Category

Vegetation Type	Acres of slopes >40%	Acres of slopes 21–40%
Conifer/mountain shrub	1,323	2,662
Desert shrub	6,391	27,473
Invasive species and weeds	43	213
Pinyon-juniper woodland	77,332	180,954
Riparian/wetland	683	1,461
Sagebrush/ perennial grassland	1,684	5,533
Total	**87,456**	**218,296**

4.3.17.2.10.3. Alternative C

Under Alternative C, the impacts of soils and watershed management decisions on vegetation resources would include the following impacts in addition to those discussed under Alternative A. Surface disturbing activities would not be permitted on slopes greater than 40% unless it is determined that it would cause undue or unnecessary degradation to pursue other placement alternatives. Therefore, surface disturbance allowed under this alternative could cause direct and indirect adverse impacts on native vegetation on up to 87,456 acres of steep slopes in the Monticello FO. If surface-disturbing activities cannot be avoided on slopes between 21% and 40%, a plan including an erosion control strategy and a BLM-approved survey and design would be required. Therefore, the actions associated with this alternative would have fewer adverse impacts on vegetation resources than Alternatives A and D, but greater adverse impacts than Alternative B.

4.3.17.2.10.4. Alternative D

Under Alternative D, the impacts of soils and watershed management decisions on vegetation resources would require a plan including an erosion control strategy and a BLM-approved survey and design for development of land with slopes greater than 40%. The required erosion and design plan would help mitigate the adverse impacts of surface disturbance on vegetation resources located in and downslope of steep development areas. Therefore, this alternative would have fewer adverse impacts on vegetation resources than Alternative A, but greater adverse impacts than Alternatives B and C.

4.3.17.2.11. Impacts of Special Designations Decisions on Vegetation

Under all alternatives, Wilderness Study Areas (WSAs) would be managed according to the Interim Management Policy and Guidelines for Lands Under Wilderness Review. All WSAs would be managed under VRM Class I objectives, which would indirectly minimize the adverse impacts of surface disturbing activities on vegetation resources by preserving high scenic quality and prohibiting surface disturbances and structures that would degrade VRM I scenic quality (see Section 4.3.18, Visual Resources).

4.3.17.2.11.1. Alternative A

Alkali Ridge (39,202 acres)

Under Alternative A, this ACEC would be open for mineral leasing with special conditions, open for geophysical work, available for mineral materials disposal, and open to mineral entry. It would also be available for woodland product collection, surface disturbing land treatments, range and wildlife habitat improvements, livestock grazing, and OHV use on existing roads and trails. The allowance of these surface disturbing activities in the ACEC would have both beneficial and adverse impacts on vegetation resources. Land and vegetation treatments would have adverse impacts on vegetation in the short-term due to trampling or removal of individual plants. In the long-term, however, these treatments would help to reestablish native vegetation communities in the ACEC. As discussed in Section 4.3.17.1, Impacts Common to All Alternatives, other surface disturbing activities allowed in the ACEC would have adverse impacts on vegetation resources. The acres of each vegetation type in Alkali Ridge by alternative are presented in Table 4.172.

Table 4.172. Acreage of Each Vegetation Type in Alkali Ridge by Alternative

Vegetation Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	1	1	1	N/A
Desert shrub	864	864	864	N/A
Invasive species and weeds	24	24	24	N/A
Pinyon-juniper woodland	31,766	31,760	31,760	N/A
Riparian/wetland	357	357	357	N/A
Sagebrush/perennial grass	5,153	5,153	5,153	N/A
Total	**38,165**	**38,159**	**38,159**	**N/A**

Bridger Jack Mesa (6,260 acres)

Bridger Jack Mesa ACEC, which is managed for near relict vegetation value, would be open for mineral leasing with NSO, geophysical work, and mineral entry, and closed to mineral disposal, livestock grazing, OHV use, woodland product collection, and land and vegetation treatments. Surface disturbing activities would adversely impact vegetation resources due to crushing or removal of individual plants and soil disturbance and compaction. The restricted surface disturbing activities listed above would help to mitigate adverse impacts from authorized surface disturbance. The acres of each vegetation type in Bridger Jack Mesa by alternative are presented in Table 4.173.

Table 4.173. Acreage of Each Vegetation Type in Bridger Jack Mesa by Alternative

Vegetation Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	134	133	N/A	N/A
Desert shrub	9	8	N/A	N/A
Invasive species and weeds	0	0	N/A	N/A
Pinyon-juniper woodland	5,969	5,934	N/A	N/A
Riparian/wetland	3	3	N/A	N/A
Sagebrush/perennial grass	147	71	N/A	N/A
Total	**6,262[1]**	**6,149**	**N/A**	**N/A**

[1] Acres of each vegetation type were determined using the Southwest ReGAP terrestrial ecological classification system (USGS 2004). Because vegetation types may overlap or be overestimated in the SWReGAP coverages, total acres of vegetation may exceed the total acres of the area being analyzed.

Butler Wash North (17,463 acres)

This ACEC would be managed with the same restrictions as Bridger Jack Mesa; therefore, impacts would be the same. The acres of each vegetation type in Butler Wash North by alternative are presented in Table 4.174.

Table 4.174. Acreage of Each Vegetation Type in Butler Wash North by Alternative

Vegetation Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	46	46	N/A	N/A
Desert shrub	61	61	N/A	N/A
Invasive species and weeds	0	0	N/A	N/A
Pinyon-juniper woodland	16,602	16,506	N/A	N/A
Riparian/wetland	30	28	N/A	N/A
Sagebrush/perennial grass	725	725	N/A	N/A
Total	**17,464[1]**	**17,366**	**N/A**	**N/A**

[1] Acres of each vegetation type were determined using the Southwest ReGAP terrestrial ecological classification system (USGS 2004). Because vegetation types may overlap or be overestimated in the SWReGAP coverages, total acres of vegetation may exceed the total acres of the area being analyzed.

Cedar Mesa (295,337 acres)

This ACEC would be managed with the same restrictions as Alkali Ridge; therefore, impacts would be the same. The acres of each vegetation type in Cedar Mesa by alternative are presented in Table 4.175.

Table 4.175. Acreage of Each Vegetation Type in Cedar Mesa by Alternative

Vegetation Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	211	212	N/A	N/A
Desert shrub	79,672	55,874	N/A	N/A
Invasive species and weeds	95	109	N/A	N/A
Pinyon-juniper woodland	183,115	212,775	N/A	N/A
Riparian/wetland	3,615	3,588	N/A	N/A
Sagebrush/perennial grass	26,949	31,679	N/A	N/A
Total	**293,657**	**304,237**	**N/A**	**N/A**

Dark Canyon (61,659 acres)

This ACEC would be managed with the same restrictions as Bridger Jack Mesa, except that mineral leasing would not be permitted. Therefore, surface disturbance impacts on vegetation resources would be slightly less than for Bridger Jack Mesa ACEC. The acres of each vegetation type in Dark Canyon by alternative are presented in Table 4.176.

Table 4.176. Acreage of Each Vegetation Type in Dark Canyon by Alternative

Vegetation Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	543	543	N/A	N/A
Desert shrub	1,892	1,892	N/A	N/A
Invasive species and weeds	9	9	N/A	N/A
Pinyon-juniper woodland	56,966	56,966	N/A	N/A
Riparian/wetland	354	354	N/A	N/A
Sagebrush/perennial grass	1,896	1,896	N/A	N/A
Total	**61,660[1]**	**61,660[1]**	**N/A**	**N/A**

[1] Acres of each vegetation type were determined using the Southwest ReGAP terrestrial ecological classification system (USGS 2004). Because vegetation types may overlap or be overestimated in the SWReGAP coverages, total acres of vegetation may exceed the total acres of the area being analyzed.

Hovenweep (1,796 acres)

Hovenweep ACEC would be open for mineral leasing (NSO), geophysical work, mineral entry, livestock grazing, OHV use on roads and trails, and vegetation treatments in most areas. It would be closed to mineral materials disposal and vegetation treatments in the 880 acre visual protective zone. The surface disturbing activities allowed in this ACEC would have adverse impacts on vegetation resources as discussed in Section 4.3.17.1, Impacts Common to All Alternatives. Restrictions on mineral materials disposal and vegetation treatments would have beneficial impacts on vegetation resources in this ACEC, and would help mitigate adverse impacts from authorized surface disturbing activities. The acres of each vegetation type in Hovenweep by alternative are presented in Table 4.177.

Table 4.177. Acreage of Each Vegetation Type in Hovenweep by Alternative

Vegetation Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	0	0	0	N/A
Desert shrub	305	392	392	N/A
Invasive species and weeds	2	2	2	N/A
Pinyon-juniper woodland	486	813	813	N/A
Riparian/wetland	4	4	4	N/A
Sagebrush/perennial grass	998	1,198	1,198	N/A
Total	**1,795**	**2,409**	**2,409**	N/A

Indian Creek (8,511 acres)

This ACEC would be managed with the same restrictions as Bridger Jack Mesa with one exception: livestock use would be allowed. Therefore, surface disturbance impacts on vegetation resources would be greater than in the Bridger Jack Mesa ACEC. The acres of each vegetation type in Indian Creek by alternative are presented in Table 4.178.

Table 4.178. Acreage of Each Vegetation Type in Indian Creek by Alternative

Vegetation Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	0	0	0	N/A
Desert shrub	4,710	4,710	4,710	N/A
Invasive species and weeds	0	0	0	N/A
Pinyon-juniper woodland	3,222	3,222	3,222	N/A
Riparian/wetland	577	577	577	N/A
Sagebrush/perennial grass	0	0	0	N/A
Total	**8,509**	**8,509**	**8,509**	N/A

Lockhart Basin (0 acres)

This area is not managed as an ACEC under Alternative A. The acres of each vegetation type in Lockhart Basin by alternative are presented in Table 4.179.

Table 4.179. Acreage of Each Vegetation Type in Lockhart Basin by Alternative

Vegetation Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	N/A	0	N/A	N/A
Desert shrub	N/A	25,317	N/A	N/A
Invasive species and weeds	N/A	125	N/A	N/A
Pinyon-juniper woodland	N/A	20,340	N/A	N/A
Riparian/wetland	N/A	1,556	N/A	N/A

Table 4.179. Acreage of Each Vegetation Type in Lockhart Basin by Alternative

Vegetation Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Sagebrush/perennial grass	N/A	154	N/A	N/A
Total	N/A	**47,492**	N/A	N/A

Lavender Mesa (649 acres)

This ACEC would be managed with the same restrictions as Bridger Jack Mesa; therefore, impacts would be the same. The acres of each vegetation type in Lavender Mesa by alternative are presented in Table 4.180.

Table 4.180. Acreage of Each Vegetation Type in Lavender Mesa by Alternative

Vegetation Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	11	11	0	N/A
Desert shrub	0	0	11	N/A
Invasive species and weeds	0	0	0	N/A
Pinyon-juniper woodland	499	499	499	N/A
Riparian/wetland	0	0	0	N/A
Sagebrush/perennial grass	139	139	139	N/A
Total	**649**	**649**	**649**	N/A

Shay Canyon (3,561 acres)

This ACEC would be managed with the same restrictions as Alkali Ridge with one exception: woodland product collection would not be allowed. This would reduce the adverse impacts of permitting surface disturbing activities in the ACEC. The acres of each vegetation type in Shay Canyon by alternative are presented in Table 4.181.

Table 4.181. Acreage of Each Vegetation Type in Shay Canyon by Alternative

Vegetation Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	11	0	0	N/A
Desert shrub	1	0	0	N/A
Invasive species and weeds	0	0	0	N/A
Pinyon-juniper woodland	3,057	98	98	N/A
Riparian/wetland	247	20	20	N/A
Sagebrush/perennial grass	245	2	2	N/A
Total	**3,561**	**120**	**120**	N/A

San Juan River (0 acres)

Under Alternative A, this area is managed as a SRMA. The acres of each vegetation type in San Juan River by alternative are presented in Table 4.182.

Table 4.182. Acreage of Each Vegetation Type in San Juan River by Alternative

Vegetation Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	N/A	0	0	N/A
Desert shrub	N/A	1,650	1,650	N/A
Invasive species and weeds	N/A	0	0	N/A
Pinyon-juniper woodland	N/A	2,604	2,604	N/A
Riparian/wetland	N/A	1,640	1,640	N/A
Sagebrush/perennial grass	N/A	3	3	N/A
Total	N/A	**5,897**	**5,897**	N/A

Valley of the Gods (0 acres)

This area is not managed as an ACEC under Alternative A. The acres of each vegetation type in Valley of the Gods by alternative are presented in Table 4.183.

Table 4.183. Acreage of Each Vegetation Type in Valley of the Gods by Alternative

Vegetation Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	N/A	0	0	N/A
Desert shrub	N/A	21,383	21,383	N/A
Invasive species and weeds	N/A	0	0	N/A
Pinyon-juniper woodland	N/A	1,395	1,395	N/A
Riparian/wetland	N/A	81	81	N/A
Sagebrush/perennial grass	N/A	0	0	N/A
Total	N/A	**22,859**	**22,859**	N/A

4.3.17.2.11.2. Alternative B

Alkali Ridge (39,196 acres)

Under Alternative B, this ACEC would be 4 acres (0.01%) smaller than under Alternative A. It would be open for mineral leasing with standard stipulations and livestock grazing, but it would not be open to woodland product collection or surface disturbing land treatments. The adverse impacts of this alternative on vegetation resources would be less than those under Alternative A because of the reduction in allowable surface disturbing activities.

Bridger Jack Mesa (6,219 acres)

Under Alternative B, this ACEC would be 41 acres (0.7%) smaller than under Alternative A. As a result, the impacts of management decisions pertaining to surface disturbance would be approximately the same as those discussed for Alternative A.

Butler Wash North (17,365 acres)

Under Alternative B, this ACEC would be 98 acres (0.7%) smaller than under Alternative A. There would be 1 less acre of desert shrub vegetation, 94 fewer acres of pinyon-juniper woodland vegetation, and 2 fewer acres of riparian vegetation than under Alternative A. Because the acreage is slightly reduced between Alternatives A and B, the impacts of management decisions pertaining to surface disturbance would be slightly greater than those discussed for Alternative A.

Cedar Mesa (306,743 acres)

Under Alternative B, this ACEC would be 11,406 acres (3.9%) larger than under Alternative A. There would be 1 additional acre of conifer/mountain shrub vegetation, 23,799 fewer acres of desert shrub vegetation, 14 additional acres of invasive species and weeds vegetation, 26,660 additional acres of pinyon-juniper woodland vegetation, and 4,731 additional acres of riparian vegetation than under Alternative A. This ACEC would be managed with the same restrictions as under Alternative A with the following exceptions: it would be closed to dispersed camping and collection of woodland products. These surface disturbance restrictions, plus the increased size of the ACEC under this alternative, would decrease the magnitude and extent of adverse impacts on vegetation resources compared to Alternative A. One exception would be the loss of 23,799 acres of desert shrub vegetation, which would lead to an increased risk of surface disturbing, adverse impacts on native vegetation in this vegetation type compared to Alternative A.

Dark Canyon (61,659 acres)

This ACEC would be the same size and be managed with the same restrictions as under Alternative A with the following exceptions: vegetation treatments with minimal surface disturbance would be allowed. The allowance of vegetation treatments would have beneficial impacts on native vegetation in the ACEC.

Hovenweep (2,412 acres)

Under this alternative, this ACEC would be 616 acres (34%) larger than under Alternative A. There would be 87 more acres of desert shrub vegetation, 327 more acres of pinyon-juniper woodland vegetation, and 200 more acres of riparian vegetation than under Alternative A. This ACEC would be managed with the same restrictions as under Alternative A except that vegetation treatments would not be allowed. This would reduce beneficial impacts on native vegetation by failing to improve vegetation resources in the ACEC. The larger size of the ACEC, however, would provide protection for more acres of native vegetation than under Alternative A. Overall, this alternative would have fewer negative impacts on vegetation resources than Alternative A.

Indian Creek (8,510 acres)

Under Alternative B, this ACEC would be approximately the same size as under Alternative A. The ACEC would be managed with the same restrictions as under Alternative A except that

dispersed camping would not be allowed. This would help mitigate adverse impacts of camping on native vegetation in the ACEC. Overall, this Alternative would have fewer negative impacts on vegetation resources in Indian Creek than Alternative A because of the decreased level of surface disturbance associated with the prohibition of dispersed camping.

Lockhart Basin (47,783 acres)

This ACEC would be open for mineral leasing with NSO, geophysical work, and livestock grazing. It would be closed to mineral disposal and woodland product collection. These restrictions on surface disturbing activities would reduce adverse impacts on vegetation resources in this ACEC. Because this area would not be designated as an ACEC under Alternative A, Alternative B would have fewer adverse impacts on vegetation resources because of restrictions to surface disturbing activities with ACEC designation.

Lavender Mesa (649 acres)

Under Alternative B, this ACEC would be the same size and managed with the same restrictions as under Alternative A except that vegetation treatments with minimal surface disturbance would be allowed. Overall, the allowance of vegetation treatments would have beneficial impacts on native vegetation in the ACEC because treatments would reduce the cover of weedy species and restore native plant species diversity.

Shay Canyon (119 acres)

Under Alternative B**,** this ACEC would be 3,442 acres (97%) smaller than under Alternative A. There would be 11 fewer acres of conifer/mountain shrub habitat, 1 less acre of desert shrub habitat, 2,959 fewer acres of pinyon-juniper woodland vegetation, 227 fewer acres of riparian vegetation, and 243 fewer acres of sagebrush/perennial grassland vegetation than under Alternative A. This ACEC would be managed with the same restrictions as under Alternative A with the following exceptions: no surface disturbing vegetation treatments, NSO oil and gas management, grazing on trails only, and closed to mineral materials disposal. These restrictions on surface disturbing activities would reduce adverse impacts on vegetation resources and would help mitigate adverse impacts from authorized surface disturbing activities. Overall, this alternative would adversely impact more acres of vegetation resources in Shay Canyon than would occur under Alternative A.

San Juan River (7,540 acres)

Under this alternative**,** the San Juan River area would be managed as an ACEC and would be open for mineral leasing with NSO, seasonal livestock use, vegetation treatments, and OHV use on roads and trails. The surface disturbing activities allowed in the ACEC would have adverse impacts on vegetation resources as discussed under Alternative A. San Juan River would be closed to mineral disposal, mineral entry, and woodland product collection. Restrictions on surface disturbance would reduce adverse impacts on vegetation resources and would help mitigate adverse impacts from authorized surface disturbing activities. Although this ACEC would be smaller than the San Juan River SRMA proposed under Alternative A, there would be fewer adverse impacts on vegetation resources resulting from increased restrictions on surface disturbing activities associated with ACEC designation.

Valley of the Gods (22,863 acres)

Under this alternative**,** the Valley of the Gods area would be managed as an ACEC. It would be managed as VRM I, closed for mineral leasing and disposal of mineral materials, available for livestock use and vegetation treatments, and closed to woodland product use. These surface disturbing activities would have adverse impacts on vegetation resources as discussed under Alternative A. Restrictions on surface disturbance would reduce adverse impacts on vegetation resources and would help mitigate adverse impacts from authorized surface disturbing activities. Although this ACEC would be smaller than the special emphasis area within the Cedar Mesa ACEC proposed under Alternative A, there would be fewer adverse impacts on vegetation resources resulting from increased restrictions on surface disturbing activities under this alternative.

Summary

Overall, there would be fewer adverse impacts on vegetation resources in ACECs under Alternative B than under Alternative A. This is because of the increase in the number of acres designated as ACECs and a reduction in allowable surface disturbing activities.

4.3.17.2.11.3. Alternative C

Alkali Ridge, Hovenweep, Indian Creek, Shay Canyon, and Valley of the Gods

Under this alternative, these ACECs would be the same size as under Alternative B and the impacts of management decisions pertaining to surface disturbance would be the same as those discussed for Alternative B.

Bridger Jack Mesa, Butler Wash North, Dark Canyon, and Lockhart Basin

Under Alternative C**,** these areas would not be managed as ACECs. Therefore, the management decisions under Alternatives A and B would have fewer adverse impacts on fewer acres of native vegetation than under this alternative.

Cedar Mesa (306,742 acres)

Under Alternative C**,** this area would not be managed as an ACEC. Cedar Mesa would be managed as a C-SRMA, which provides fewer protective measures for soil and vegetation. Therefore, the management decisions under Alternatives A and B would have fewer adverse impacts on fewer acres of native vegetation than under this alternative.

Lavender Mesa (649 acres)

Under this alternative**,** these ACECs would be the same size as under Alternative A, and would be managed with the same restrictions. Therefore, impacts under this alternative would be the same as those discussed in Alternative A.

San Juan River (7,590 acres)

Under Alternative C, the San Juan River ACEC would be 50 acres (0.7%) larger than under Alternatives B and E. Impacts of management decisions pertaining to surface disturbance would be the same as those discussed for Alternative B.

Summary

Overall, there would be greater adverse impacts on vegetation resources in the ACECs and other areas under Alternative C than under Alternative A. This is because of the decrease in the number of acres designated as ACECs and the increase in allowable surface disturbing activities compared to Alternative A.

4.3.17.2.11.4. Alternative D

Alkali Ridge, Bridger Jack Mesa, Butler Wash North, Cedar Mesa, Dark Canyon, Hovenweep, Indian Creek, Lockhart Basin, Lavender Mesa, Shay Canyon, San Juan River, and Valley of the Gods

Under this alternative**,** these areas would not be managed as ACECs. Therefore, management decisions under Alternatives A, B, and C would have fewer adverse impacts on fewer acres of native vegetation than under Alternative D.

Overall, there would be greater adverse impacts on vegetation resources in ACECs and other areas under this alternative than under Alternative A. This is because of the decrease in the number of acres designated as ACECs and the increase in allowable surface disturbing activities compared to Alternative A.

4.3.17.2.11.5. Alternative E

Under Alternative E, the impacts of special designations management decisions on native vegetation would be the same those discussed under Alternative B with the following exceptions. Non-WSA lands with wilderness characteristics would be managed to preserve their wilderness values. Preservation stipulations would include management under VRM I objectives, no minerals leasing, no off-route OHV travel, no new road construction, no mineral materials disposal, and no firewood gathering or harvesting. These stipulations would have additional long-term, beneficial impacts on vegetation resources by restricting surface disturbances to a greater degree than those discussed under Alternative B. The areas of vegetation resources within the proposed ACECs that would be beneficially affected include: 0.1% of Bridger Jack Mesa, 0.2% of Butler Wash, 20% of Cedar Mesa, 0.5% of Dark Canyon, 46% of Indian Creek, 100% of Lavender Mesa, 45% of Lockhart Basin, 28% of San Juan River, 83% of Shay Canyon, and 91% of the Valley of the Gods.

Management of these non-WSA lands with wilderness characteristics would decrease surface disturbance within the above ACECs, which would provide more beneficial protection to vegetation resources when compared to Alternative A and the other action alternatives.

4.3.17.2.12. Impacts of Special Status Species Decisions on Vegetation

4.3.17.2.12.1. Alternative A

Compliance with the Endangered Species Act and BLM Manual 6840 requires avoiding and/or minimizing surface disturbing activities in Threatened and Endangered species habitat. In addition, both the BLM's Guidance for the Management of Sagebrush Plant Communities for Sage-grouse Conservation and BLM's National Sage-grouse Habitat Conservation Strategy would be implemented in suitable habitat in the Monticello FO (4,546 acres of sagebrush vegetation). An additional 320 acres of suitable Gunnison sage-grouse habitat would be managed

as a conservation easement to protect and enhance their habitat. Adherence to these plans would have beneficial impacts on vegetation resources in the Monticello FO.

There would be no ground disturbing activities allowed within a 0.5 mile radius of known bald eagle or Mexican spotted owl (MSO) nests, which would have long-term beneficial impacts on sagebrush vegetation in those buffer zones. MSO Protected Activity Centers (PACs) would be protected as outlined in the MSO Recovery Plan (USFWS 1995). MSO Designated Critical Habitat and suitable habitat would be avoided or use restrictions would be implemented. Within suitable habitat, these would include staying on designated routes or revegetating access routes created by a project, which would help mitigate the adverse impacts of surface disturbance associated with road construction and/or use on vegetation.

In Southwestern willow flycatcher, yellow-billed cuckoo, and endangered Colorado River fishes riparian habitat, there would be no surface disturbing activities within 300 feet of riparian habitat, which would have long-term beneficial impacts on riparian vegetation in those buffer zones. If oil and gas operations require stream crossing, Utah Oil and Gas Pipeline Crossing Guidance would be followed to help mitigate negative impacts on vegetation and wildlife associated with pipeline crossing (Appendix F).

If California condors nest in the Monticello FO, there would be no surface disturbing activities allowed within 1 mile of the nest, which would have long-term beneficial impacts on vegetation in those buffer zones.

4.3.17.2.12.2. Alternative B

Under Alternative B, the impacts of special status species management decisions on vegetation resources would include the following management in addition to that discussed under Alternative A. For Gunnison sage-grouse, year-round critical habitat would be designated on 4,524 acres of the sagebrush vegetation on BLM land in the Monticello FO (see Map 66). In lek habitat (2.0 mile radius of an active strutting ground), there would be no surface disturbing activities allowed, with the exception of seasonal grazing. These restrictions would help mitigate the adverse impacts of seasonal grazing on vegetation resources in lek habitat. Within 6 miles of lek habitat, sagebrush treatments, oil and gas leasing with standard stipulations, and year-round grazing would be allowed (except seasonally in Sage Flat, Upper East Canyon, Sage Grouse, and Dry Farm). Sagebrush treatments would mitigate the adverse impacts of surface disturbing activities on vegetation resources within the 6 mile lek habitat buffer.

Under this alternative, MSO and flannelmouth sucker habitat in Arch Canyon would be closed to OHV use and have a maximum group size of 10 people per day. These restrictions would reduce the surface disturbance in Arch Canyon associated with human visitation more than under Alternative A.

4.3.17.2.12.3. Alternative C

Under Alternative C, the impacts of special status species management decisions on vegetation resources would be the same as those discussed under Alternative B, except lek habitat would be defined as within 0.60 miles of an active strutting ground. Grazing would be permitted year-round. Construction of power lines would be permitted within year-round Gunnison sage-grouse habitat. The potential increase in grazing in and around sage-grouse leks and other potential

surface disturbing activities within year-round habitats would result in greater adverse impacts on vegetation resources than under Alternative B but fewer impacts than under Alternative A.

Under this alternative, MSO and flannelmouth sucker habitat in Arch Canyon would have OHV use limited to designated routes to the end of the State Section (closed from there to the end of the National Forest boundary), and have a maximum group size of 12 people per day. These restrictions would reduce surface disturbance in Arch Canyon associated with human visitation more than under Alternative A.

4.3.17.2.12.4. Alternative D

Under Alternative D, special status species management decisions on vegetation resources would include the following impacts in addition to those discussed in Alternative A. For Gunnison sage-grouse, year-round critical habitat would be designated on 2,877 acres of BLM land in the Monticello FO (see Map 68). In lek habitat (within 0.25 miles of an active strutting ground), there would be no surface disturbing activities allowed, with the exception of seasonal grazing. These restrictions would help mitigate the adverse impacts of seasonal grazing on vegetation resources in lek habitat. Within 6 miles of lek habitat, sagebrush treatments, fence construction, oil and gas leasing with standard stipulations, and year-round grazing would be allowed (except seasonally in Sage Flat, Upper East Canyon, Sage Grouse, and Dry Farm). Sagebrush treatments would help mitigate the adverse impacts of surface disturbing activities on vegetation resources within the 6 mile lek habitat buffer. The reduced area of protected habitats and allowances for surface disturbing activities would result in greater adverse impacts on vegetation resources under Alternative D than would occur under any of the other alternatives.

Under this alternative, MSO and flannelmouth sucker habitat in Arch Canyon would have OHV use limited to designated routes and have a maximum group size of 12 people per day. These restrictions would reduce surface disturbance in Arch Canyon associated with human visitation more than under Alternative A but less than Alternatives B and C.

4.3.17.2.12.5. Alternative E

Under Alternative E, the impacts of special status species management decisions on vegetation resources would be the same as discussed under Alternative B with the following additions. Non-WSA lands with wilderness characteristics would be managed as closed to mineral leasing, closed to OHV use, proposed for withdrawal from mineral entry, ROW exclusion area, closed to disposal of mineral materials, closed to private and commercial woodland harvest, and managed as VRM I. Management of these non-WSA lands with wilderness characteristics would decrease surface disturbance to vegetation within these areas, and would thereby provide more beneficial protection to vegetation resources than any of the other management alternatives.

4.3.17.2.13. Impacts of Travel Decisions on Vegetation

4.3.17.2.13.1. Alternative A

Under Alternative A, any new trail designations would consider sensitive species habitat, which would reduce surface disturbing activities in critical native vegetation. In addition, National Scenic Byways and Backways would be designated in the Monticello FO. These roads already

exist, so there is not likely to be an appreciable impact on vegetation resources resulting from these designations.

A number of trails would be managed for non-mechanized travel (see Summary Table of Alternatives). Because these trails are already established, there is not likely to be an appreciable impact on vegetation resources resulting from trail maintenance. There would also be trails and areas open to OHV use under all alternatives. OHV use can cause an increased level of surface disturbance because of the weight of the machines and speed of travel. This surface disturbance would have short- and long-term direct and indirect impacts on vegetation resources in the Monticello FO, as discussed in previous sections.

Under Alternative A, travel management decisions on vegetation resources would include the following additional impacts: There are a total of 1,940,740 acres open to OHV use under this alternative, which is more than under any of the other alternatives.

This alternative would have 276,430 acres closed to OHV use, which is more than Alternative D, but less than Alternatives B, C, and E. These closures would reduce adverse impacts on native vegetation in these protected areas by eliminating surface disturbance associated with OHV use. A list of closed areas is located in the Summary Table of Alternatives. Closed areas include some ACECs and vegetation study areas. This action helps protect ecologically important vegetation communities from surface disturbance and weed introduction associated with OHV use. In Tables 4.184–4.186, the acreage closed to OHV, acreage of limited OHV use, and acres open to OHV use are listed by vegetation type for each alternative.

Table 4.184. Acreage Closed to OHV Use for All Alternatives

Vegetation Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	856	1,074	1,074	0
Desert shrub	53,097	69,957	67,238	0
Invasive species and weeds	159	236	235	0
Pinyon-juniper woodland	218,188	317,500	315,524	0
Riparian/wetland	3,524	3,977	3,676	0
Sagebrush/perennial grass	12,256	30,838	30,802	0
Total	**288,080[1]**	**423,582**	**418,549**	**0**

[1] Acres of each vegetation type were determined using the Southwest ReGAP terrestrial ecological classification system (USGS 2004). Because vegetation types may overlap or be overestimated in the SWReGAP coverages, total acres of vegetation may exceed the total acres of the area being analyzed.

Table 4.185. Acreage of Limited OHV Use for All Alternatives

Vegetation Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	3,236	9,728	9,728	10,802
Desert shrub	218,564	350,720	351,592	418,829
Invasive species and weeds	1,284	3,154	3,154	3,390
Pinyon-juniper woodland	572,435	828,766	830,534	1,145,957
Riparian/wetland	6,302	16,458	16,623	20,300
Sagebrush/perennial grass	88,073	134,739	134,770	165,571
Total	**889,894**	**1,343,565**	**1,346,401**	**1,764,849**

Table 4.186. Acres Open to OHV Use for All Alternatives

Vegetation Type	Alternative A	Alternatives B and E	Alternative C	Alternative D
Conifer/mountain shrub	6,709	0	0	0
Desert shrub	150,188	0	1,847	1,847
Invasive species and weeds	1,986	0	0	0
Pinyon-juniper woodland	356,773	0	321	321
Riparian/wetland	10,870	0	135	135
Sagebrush/perennial grass	65,782	0	6	6
Total	**592,308**	**0**	**2,309**	**2,309**

4.3.17.2.13.2. Alternatives B and E

Under Alternatives B and E, the impacts of travel management decisions on vegetation resources would include the following in addition to the qualitative impacts discussed in Alternative A. There are no acres open to OHV use under these alternatives, which is 100% less (592,308 acres) than under Alternative A.

In total, there are 453,671 more acres of OHV use limited to designated routes under Alternative B than under Alternative A. Under Alternatives B and E, 210% more conifer/mountain shrub vegetation, 60% more desert shrub, 146% more invasive weed vegetation, 45% more pinyon-juniper woodland, 161% more riparian/wetland vegetation, and 53% more sagebrush/perennial grassland vegetation would have OHV use limited to designated routes.

Alternatives B and E have 423,582 acres closed to OHV use, which is 135,502 acres (47%) more than under Alternative A. Table 4.187 provides the percent difference in acres closed to OHV use in each vegetation type between Alternatives A and B/E.

Table 4.187. Percent Difference Acres Closed to OHV Use between Alternatives A and B/E

Vegetation Type	Percent difference Compared with Alternative A
Conifer and mountain shrub	25%
Desert shrub	32%
Invasive species and noxious weeds	48%
Pinyon-juniper woodland	46%
Riparian and wetland	13%
Sagebrush and perennial grassland	152%

These closures and limitations would decrease the adverse impacts of this alternative on native vegetation by reducing surface disturbance associated with OHV use. A list of closed areas is located in the Summary Table of Alternatives. Closed areas include vegetation study areas, some SRMAs, some CSMAs, and some WSAs. These closures would protect more acres of ecologically important vegetation communities from the surface disturbance and weed spread associated with OHV use than Alternative A. The impacts of management decisions under these alternatives are comparable to the impacts of Alternative C. There are fewer acres of native vegetation subject to adverse surface disturbing impacts under these alternatives than under Alternative D.

4.3.17.2.13.3. Alternative C

Under Alternative C, the impacts of travel management decisions on vegetation resources would include the following impacts in addition to the qualitative impacts discussed in Alternative A. There are a total of 2,309 acres open to OHV use under this alternative, which is 589,999 acres less than under Alternative A. Under Alternative C, approximately 99% to 100% less of each vegetation type would be open to OHV use than under Alternative A.

In total, there are 456,507 more acres of OHV use limited to designated routes under Alternative C than under Alternative A. When quantified by vegetation type, this difference breaks down as follows: 201% more conifer/mountain shrub vegetation, 61% more desert shrub, 146% more invasive weed vegetation, 45% more pinyon-juniper woodland, 164% more riparian/wetland and 53% more sagebrush/perennial grassland vegetation would have OHV use limited to designated routes.

This alternative would have 418,549 acres closed to OHV use, which is 130,469 acres (45%) more than under Alternative A. Table 4.188 provides the percent difference in acres closed to OHV use in each vegetation type between Alternative A and C.

Table 4.188. Percent Difference Acres Closed to OHV Use between Alternatives A and C

Vegetation Type	Percent Difference Compared with Alternative A
Conifer and mountain shrub	25%
Desert shrub	27%
Invasive species and noxious weeds	48%
Pinyon-juniper woodland	45%
Riparian and wetland	4%
Sagebrush and perennial grassland	151%

These closures would decrease the adverse impacts of this alternative on native vegetation by eliminating surface disturbance associated with OHV use. A list of closed areas is located in the Summary Table of Alternatives. Closed areas include vegetation study areas, some SRMAs, some CSMAs, and some WSAs. These closures would protect more acres of ecologically important vegetation communities from the surface disturbance and weed introduction associated with OHV use than Alternative A. Impacts under this alternative are comparable to impacts under Alternatives B and E. There are fewer acres of native vegetation subject to adverse surface disturbing impacts under this alternative than under Alternative D.

4.3.17.2.13.4. Alternative D

Under Alternative D, the impacts of travel management decisions on vegetation resources would include the following in addition to the qualitative impacts discussed in Alternative A. There are a total of 2,309 acres open to OHV use under this alternative, which is 589,999 acres less than under Alternative A.

In total, there are 874,955 more acres of OHV use limited to designated routes under Alternative D than under Alternative A. When quantified by vegetation type, this difference breaks down as follows: 234% more conifer/mountain shrub vegetation, 92% more desert shrub vegetation, 164% more invasive weed vegetation, 100% more pinyon-juniper woodland, 222% more riparian/wetland vegetation, and 88% more sagebrush/perennial grassland vegetation would have OHV use limited to designated routes.

This alternative has no acres closed to OHV use, which is 288,080 acres less than under Alternative A. Because of the lack of closures, adverse impacts associated with this alternative would be greater than under Alternatives A, B, C, and D.

4.3.17.2.14. Impacts of Vegetation Decisions on Vegetation

4.3.17.2.14.1. Alternative A

Under Alternative A, the impacts of vegetation management decisions on vegetation resources would be the same as those discussed in Section 4.3.17.1 Impacts Common to All Alternatives. There would be 232,130 acres open to vegetation treatments each year under this alternative. This is significantly greater than under any of the other alternatives. Due to the cost of vegetation

treatments, it is likely that only a small portion of this area would be treated in a given year. The numbers of acres of vegetation treatments in each vegetation type for each alternative are provided in Table 4.189.

Table 4.189. Acres of Vegetation Treatment per Year by Vegetation Type for Each Alternative

Vegetation Type	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Sagebrush		1,000	1,500	2,000	1,000
Weed treatments		3,000	3,000	3,000	3,000
Pinyon-juniper woodland		2,000	3,000	4,000	2,000
Riparian		500	100	100	500
Greasewood		100	200	200	100
Unspecified	15,475	1,000	1,500	2,000	1,000
Total	**15,475**	**7,600**	**9,300**	**11,300**	**7,600**

4.3.17.2.14.2. Alternative B

Under Alternative B, the impacts of vegetation management decisions on vegetation resources would include the following impacts in addition to those discussed in Section 4.3.17.1 Impacts Common to All Alternatives. There would be 7,600 acres of vegetation treatments per year under this alternative, including an estimated 1,000 acres/year of existing unspecified land treatments, which is 51% fewer acres of treatment per year than under Alternative A. This alternative would have fewer long-term, beneficial impacts on vegetation resources than Alternative A due to considerably fewer acres of vegetation treatments. The adverse impacts of trampling and crushing of vegetation associated with treatment would be substantially reduced under this alternative compared with Alternative A.

4.3.17.2.14.3. Alternative C

Under Alternative C, the impacts of vegetation management decisions on vegetation resources would include the following impacts in addition to those discussed in Section 4.3.17.1 Impacts Common to All Alternatives. There would be 9,300 acres of vegetation treatments per year under this alternative, including an estimated 1,500 acres/year of existing unspecified land treatments, which is 40% fewer acres of treatment per year than under Alternative A. Compared to Alternative B, there would be 500 additional acres of sagebrush treatment, 1,000 additional acres of pinyon-juniper woodland treatment, 400 fewer acres of riparian vegetation treatment, and 100 additional acres of greasewood (desert shrub) vegetation treatment (see Table 4.189). Overall, this alternative would provide greater long-term beneficial impacts for sagebrush, pinyon-juniper woodland, and greasewood vegetation types than Alternative B. It would provide fewer long-term beneficial impacts for riparian vegetation than under Alternative B and for all vegetation types under Alternative A. However, this alternative would limit potentially severe short-term adverse impacts associated with vegetation treatments.

4.3.17.2.14.4. Alternative D

Under Alternative D, the impacts of vegetation management decisions on vegetation resources would include the following impacts in addition to those discussed in Section 4.3.17.1 Impacts Common to All Alternatives. There would be 11,300 acres of vegetation treatments per year under this alternative, including an estimated 2,000 acres/year of existing unspecified land treatments, which is 27% fewer acres of treatment per year than under Alternative A. Compared to Alternative B, there would be 1,000 additional acres of sagebrush treatment, 2,000 additional acres of pinyon-juniper woodland treatment, 400 fewer acres of riparian treatment, and 100 additional acres of greasewood (desert shrub) treatment under this alternative (see Table 4.189). Overall, this alternative would provide greater long-term beneficial impacts for sagebrush, pinyon-juniper woodland, and greasewood (desert shrub) vegetation than Alternatives B and E, as well as for sagebrush and pinyon-juniper woodland vegetation than Alternative C. It would provide fewer long-term beneficial impacts for riparian habitat than would occur under Alternative B. This alternative would have fewer potentially severe short-term adverse impacts associated with vegetation treatments than would occur under Alternative A.

4.3.17.2.14.5. Alternative E

Under Alternative E, the impacts of vegetation management decisions on vegetation resources would be the same as discussed under Alternative B with the following additions. Non-WSA lands with wilderness characteristics would be managed to decrease surface disturbance to vegetation within these areas, and would thereby provide more beneficial protection to vegetation resources than any of the other management alternatives.

4.3.17.2.15. Impacts of Visual Resource Decisions on Vegetation

4.3.17.2.15.1. Alternative A

Under Alternative A, lands in the Monticello FO would be managed as one of four visual resource management classes (see VRM Section 3.18). All WSAs and Wild and Scenic River segments would be managed as VRM I or II. Very limited and limited management activities, respectively, would be allowed in areas designated as VRM classes I or II. Short-term vegetation treatments and other surface disturbing activities designed to enhance native vegetation would be allowed in VRM classes I or II areas. These types of disturbances could have minor, short-term, adverse impacts on native vegetation in the Monticello FO.

In areas designated as VRM classes III or IV, changes to the landscape could be moderate or major, respectively. Most types of vegetation treatments and other surface disturbing activities would be allowed in VRM classes III or IV areas. These types of disturbances could have long-term adverse impacts on native vegetation in the Monticello PA, but long-term benefits in restoration of native and other desired vegetation communities. Alternative A, the No Action Alternative, also describes the acreages assessed under the Monticello FO VRM inventory, which represents the level of scenic quality within the planning area.

Of the five alternatives, Alternative A would have the smallest area subject to VRM class I, but the largest area subject to VRM class II restrictions (see Map 55 for VRM locations). Tables 4.190–4.193 show the acres of each vegetation type in VRM Classes I, II, III, and IV for each alternative.

Table 4.190. Acreage of Each Vegetation Type in VRM Class I by Alternative

Vegetation Type	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Conifer/Mountain shrub	767	1,156	1,144	14	2,778
Desert shrub	97,493	115,751	88,711	62,131	266,378
Invasive species and weeds	187	360	230	229	1,088
Pinyon-juniper woodland	252,374	342,926	302,084	295,521	659,983
Riparian/Wetland	4,749	5,888	4,320	3,159	9,500
Sagebrush/Perennial grass	14,714	30,985	28,126	28,110	57,162
Total	**370,284**	**497,066**	**424,615**	**389,164**	**996,889**

Table 4.191. Acreage of Each Vegetation Type in VRM Class II by Alternative

Vegetation Type	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Conifer/Mountain shrub	1,629	1,376	104	0	622
Desert shrub	86,234	54,896	47,496	2,681	23,150
Invasive species and weeds	569	449	171	0	214
Pinyon-juniper woodland	238,942	176,060	83,447	3,304	76,553
Riparian/Wetland	7,485	5,342	4,259	2,137	4,204
Sagebrush/Perennial grass	15,274	11,267	6,186	0	5,505
Total	**350,133**	**249,390**	**141,663**	**8,122**	**110,248**

Table 4.192. Acreage of Each Vegetation Type in VRM Class III by Alternative

Vegetation Type	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Conifer/Mountain shrub	392	503	1,787	1,892	470
Desert shrub	92,977	109,609	132,231	204,910	53,913
Invasive species and weeds	761	743	1,084	1,258	665
Pinyon-juniper woodland	250,688	245,913	321,699	409,884	152,560
Riparian/Wetland	5,400	6,530	7,730	11,365	4,618
Sagebrush/Perennial grass	62,667	57,055	51,657	57,601	46,860
Total	**412,885**	**420,353**	**516,188**	**686,910**	**259,086**

Table 4.193. Acreage of Each Vegetation Type in VRM Class IV by Alternative

Vegetation Type	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Conifer/Mountain shrub	7,888	7,764	7,765	7,766	6,929
Desert shrub	143,623	140,930	152,747	151,574	76,899
Invasive species and weeds	1,872	1,893	1,962	1,961	1,421
Pinyon-juniper woodland	402,812	381,012	438,681	437,266	256,424
Riparian/Wetland	2,729	2,645	4,095	3,722	2,081
Sagebrush/Perennial grass	71,160	66,355	79,679	79,947	55,984
Total	**630,084**	**600,599**	**684,929**	**682,236**	**399,738**

4.3.17.2.15.2. Alternative B

Under Alternative B, the impacts of visual resource management decisions on vegetation resources would be more beneficial than under Alternative A in the long-term, as more vegetation acreage would be managed as VRM I and protected from surface disturbances in order to preserve scenic qualities. Alternative B would protect more vegetation resources than any of the other alternatives except Alternative E, which would manage nearly twice as many acres as VRM class I (see Table 4.190).

4.3.17.2.15.3. Alternative C

Under Alternative C, the impacts of visual resource management decisions on vegetation resources would include the qualitative impacts discussed in Alternative A, as well as the following additions: some ACECs would also be managed as VRM class I or II. Of the five alternatives, Alternative C would have the second smallest area subject to both VRM class I and II restrictions. It would have the second largest area subject to VRM class III restrictions, and the largest area subject to class IV restrictions (see Map 57 for VRM locations). Because more acres would be classified as VRM I, this alternative would do more to reduce negative impacts on vegetation resources than Alternative A, and would have greater impacts than Alternatives B and E.

4.3.17.2.15.4. Alternative D

Under Alternative D, the impacts of visual resource management decisions on vegetation resources would include the qualitative impacts discussed in Alternative A. Of the five alternatives, Alternative D would have the second smallest area subject to VRM class I restrictions and the smallest area subject to VRM class II restrictions. It would have the largest area subject to VRM class III restrictions and the second largest area subject to class IV restrictions (see Map 58 for VRM locations). Because more acres would be classified as VRM I, this alternative would do more to reduce negative impacts on vegetation resources than Alternative A.

4.3.17.2.15.5. Alternative E

Under Alternative E, approximately 582,357 additional acres would be managed as VRM I to protect non-WSA lands with wilderness characteristics. As shown in Table 4.156, 996,889 acres of vegetation resources would receive protection from surface disturbances under this alternative (56% of the planning area or 270% more VRM I area than under Alternative A). Compared to Alternative A, this alternative would have greater beneficial impacts because more area would be protected from the adverse impacts of minerals development, access road construction, OHV use, and woodland harvesting; however, these areas would also be protected from vegetation treatments and fire treatments, which would have adverse impacts on vegetation resources because of increased risks of wildland fire from fuel loading and invasive species encroachment. Overall, this alternative would have greater direct beneficial impacts from protection of non-WSA lands and greater indirect adverse impacts from exclusion of vegetation treatments than any of the alternatives.

4.3.17.2.16. Impacts of Wildlife and Fisheries Decisions on Vegetation

4.3.17.2.16.1. Alternative A

In occupied priority migratory bird habitat, no surface disturbance would be allowed from May 1–July 30. Maintenance and improvement of lowland riparian habitats, wetlands, and low and high desert scrub communities would be prioritized in the Monticello FO. In addition, the spread of invasive plant species would be prevented in these four vegetation types. These three requirements would benefit both migratory birds and native vegetation communities. These actions would have long-term beneficial impacts on native vegetation in lowland riparian, wetland, and desert scrub communities in the Monticello FO.

Bighorn sheep habitat on the five mesa tops (56,740 acres) would be prioritized for habitat improvement because of potential loss of habitat caused by surface disturbance in these areas. On-site mitigation would be required for projects that disturb or remove forage and browse species used by desert bighorn sheep. These requirements would help mitigate the adverse impacts of surface disturbing activities on vegetation resources critical to bighorn sheep survival.

There would be 17,300 acres allotted as wildlife habitat on slopes of Peter's Canyon and East Canyon under all alternatives.

Under Alternative A, specific restrictions would be in place for wildlife habitat during parts of the year. This alternative would have the least amount of wildlife habitat subject to special wildlife conditions of any of the management alternatives.

Tables 4.194–4.197 provide acreage comparisons of wildlife habitat subject to special conditions in each vegetation type for each alternative.

Table 4.194. Alternative A–Acres of Wildlife Habitat by Vegetation Type Subject to Special Conditions

Vegetation Type	Bighorn Sheep	Pronghorn	Deer	Elk
Conifer/mountain shrub	356	0	226	0
Desert shrub	66,103	2,548	6,041	0
Invasive species and weeds	346	0	387	0
Pinyon-juniper woodland	168,890	2,880	139,178	0
Riparian/wetland	435	0	1,244	0
Sagebrush/perennial grass	11,808	8,526	33,013	0
Total	**247,938**	**13,954**	**180,089**	**0**

4.3.17.2.16.2. Alternatives B and E

Under Alternatives B and E, the impacts of wildlife and fisheries management decisions on vegetation resources would include those discussed in Alternative A, as well as the restrictions in place for wildlife habitat during parts of the year. Seasonal wildlife protection areas would have special conditions for all land use activities with the exception of woodland harvest. These special conditions include: no oil and gas leasing activities, no geophysical work, and no OHV use. These seasonal wildlife protection area designations, however, can be overturned by the Field Manager if it can be shown that legal rights would be curtailed, animals are not present in the specific project location, or the activity can by conducted so as not to adversely affect wildlife species. In addition, maintenance and operation activities for mineral production and hunting would be allowed during seasonal restrictions. Therefore, these restrictions would offer only minor mitigation potential for the adverse impacts of surface disturbing activities on vegetation resources allowed in wildlife habitat. Under these alternatives, there would be 205,070 (83%) more acres subject to bighorn sheep special wildlife conditions, 15,401 (110%) more acres of protected pronghorn habitat, 594,165 (330%) more acres of protected deer habitat, and 184,248 more acres of elk habitat subject to special conditions than under Alternative A (see Table 4.195).

Table 4.195. Alternatives B and E–Acres of Wildlife Habitat by Vegetation Type Subject to Special Conditions

Vegetation Type	Bighorn Sheep	Pronghorn	Deer	Elk
Conifer/mountain shrub	211	1	4,379	9,168
Desert shrub	139,069	4,359	32,058	1,882
Invasive species and weeds	996	17	1,377	702
Pinyon-juniper	289,494	10,434	636,489	155,866
Riparian/wetland	3,627	14	7,011	1,380
Sagebrush/perennial grass	19,611	14,530	92,940	15,250
Total	**453,008**	**29,355**	**774,254**	**184,248**

4.3.17.2.16.3. Alternative C

Under Alternative C, the impacts of wildlife and fisheries management decisions on vegetation resources would include those discussed in Alternative A, as well as the restrictions in place for wildlife habitat during parts of the year. Seasonal wildlife protection areas would have the same special conditions as under Alternative A, with the exception of OHV restrictions in which the number of OHV users may be limited. Under this alternative, there would be 52,218 (21%) more acres subject to bighorn sheep special wildlife conditions, 15,401 (110%) more acres of protected pronghorn habitat, 80,242 (45%) more protected deer habitat, and 93,104 more acres of elk habitat subject to special conditions than under Alternative A (see Table 4.196). Because of these differences, this alternative would provide greater protection for vegetation resources in the wildlife protection areas of the Monticello FO than Alternative A, but would be more likely to adversely affect vegetation resources than Alternatives B and E.

Table 4.196. Alternative C–Acres of Wildlife Habitat by Vegetation Type Subject to Special Conditions

Vegetation Type	Bighorn Sheep	Pronghorn	Deer	Elk
Conifer/mountain shrub	125	1	825	6,915
Desert shrub	95,466	4,359	6,085	774
Invasive species and weeds	777	17	452	693
Pinyon-juniper woodland	186,181	10,434	206,807	74,103
Riparian/wetland	1,427	14	1,581	319
Sagebrush/perennial grass	16,180	14,530	44,581	10,300
Total	**300,156**	**29,355**	**260,331**	**93,104**

4.3.17.2.16.4. Alternative D

Under Alternative D, the impacts of wildlife and fisheries management decisions on vegetation resources would include those discussed in Alternative A, as well as the restrictions in place for wildlife habitat during parts of the year. Seasonal wildlife protection areas would have the same special conditions as under Alternative A with the exception of OHV restrictions. Under this alternative, OHV use would only be allowed on designated routes. Additionally, there would be 65,179 (26%) fewer acres subject to bighorn sheep special wildlife conditions, the same number of acres of protected pronghorn habitat, 30,826 (17%) fewer acres of protected deer habitat, and 60,103 more acres of elk habitat subject to special conditions than under Alternative A (see Table 4.197). Because of these differences, this alternative would be more likely to adversely affect vegetation resources in the wildlife protection areas of the Monticello FO than Alternatives B, C, and E, but less likely to adversely impact vegetation resources than Alternative A.

Table 4.197. Alternative D–Acres of Wildlife Habitat by Vegetation Type Subject to Special Conditions

Vegetation Type	Bighorn sheep	Pronghorn	Deer	Elk
Conifer/mountain shrub	111	0	185	6,155
Desert shrub	54,511	2,548	3,711	116
Invasive species and weeds	256	0	358	0
Pinyon-juniper	117,798	2,880	114,742	47,845
Riparian/wetland	895	0	1,092	313
Sagebrush/perennial grass	9,188	8,526	29,175	5,674
Total	**182,759**	**13,954**	**149,263**	**60,103**

4.3.17.2.17. Impacts of Woodlands Decisions on Vegetation

4.3.17.2.17.1. Alternative A

The Healthy Forest Initiative and the Healthy Forest Restoration Act of 2003 would be implemented under all alternatives. In addition, numerous sites would be excluded from wood product use except for limited on-site collection of deadwood for campfires (see Summary Table of Alternatives). These actions would help mitigate the adverse impacts of woodland product use on vegetation resources in areas of the Monticello FO open to wood harvesting. Short-term, adverse impacts include trampling and removal of native trees. Long-term, indirect impacts include the potential introduction of weedy, non-native species during wood harvesting operations. Under this alternative, all 1,147,407 acres of the pinyon-juniper woodland vegetation type would be open to woodland harvest.

4.3.17.2.17.2. Alternative B

Under Alternative B, the impacts of woodlands management decisions on vegetation resources would include those discussed in Alternative A. There would be 504,666 acres of pinyon-juniper woodland vegetation open to woodland product harvest, which is 56% fewer acres open to harvest than under Alternative A. In addition, limitations on off-road travel and seasonal restrictions on wood collection would help mitigate the adverse impacts of woodland product collection and harvest on vegetation resources.

4.3.17.2.17.3. Alternatives C and D

Under Alternatives C and D, the impacts of woodlands management decisions on vegetation resources would include those discussed in Alternative A. There would be 597,086 acres of pinyon-juniper woodland vegetation open to woodland product harvest, which is 48% fewer acres open to harvest than under Alternative A. There would not be any seasonal restrictions on wood collection, as would occur under Alternative B.

4.3.17.2.17.4. Alternative E

Under Alternative E, the impacts of woodlands management decisions on vegetation resources would be the same as those outlined under Alternative B with the following differences: Under

this alternative, non-WSA lands with wilderness characteristics would not be available for woodland product use. This would close all pinyon-juniper woodland areas with non-WSA wilderness characteristics to surface disturbing activities associated with woodland harvest. Compared to Alternative A, this alternative would have fewer adverse impacts to native vegetation resources because more area would be protected.

4.3.17.3. Summary of Impacts

Table 2.2 of Chapter 2 contains a summary of impacts of management decisions on vegetation resources.

4.3.17.4. Mitigation Measures

The protective measures for vegetation described in the management common to all sections in Chapter 2 and Appendices A and I would serve to avoid and/or minimize impacts to native vegetation resources in the Monticello FO.

4.3.17.5. Unavoidable Adverse Impacts

There will be unavoidable adverse impacts to vegetation resources in the Monticello FO resulting from surface disturbing activities associated with the resource management decisions detailed in the RMP and this EIS. Adverse impacts include temporary damage to individual native plants due to trampling and grazing by wildlife and livestock, trampling and weed introduction by human visitors (motorized and non-motorized) and vegetation treatment crews, and permanent removal of native plants due to clearing activities such as oil well pad installation and woodland harvest.

4.3.17.6. Short-term Use versus Long-term Productivity

Impacts to vegetation occurring in the MFO's arid to semi-arid climate could affect long-term productivity due to the limited annual growth of many of the plants found in this ecosystem. Recovery periods of up to 50 years may be required to return desert vegetation communities to their original vegetation cover and species composition following disturbance (Guo 2004). A period of 75 to 100 years may be required for reestablishment of mature pinyon-juniper woodlands. The recovery of cryptobiotic soil communities and associated vegetation is extremely slow (up to 250 years) following soil disturbance (BLM 2001b). Changes in other vegetation community compositions, and the resulting productivity and forage value, may also take decades.

As discussed throughout this section, some of the short-term multiple uses of the Monticello FO would adversely impact the short- and long-term productivity of native vegetation. These uses include oil and gas development, improper livestock grazing, camping, off-road vehicle travel, and woodland harvest. These activities, however, provide economic benefits, and would be partially mitigated by the protective measures discussed in the Management Common to All sections for each management decision. Effective implementation of these protective measures would prevent these uses from substantially impacting the long-term productivity of vegetation resources in the planning area.

4.3.17.7. IRREVERSIBLE AND IRRETRIEVABLE IMPACTS

The protective measures detailed in the Summary Table of Alternatives and Chapter 2 require that disturbed areas be reclaimed following completion of the management action (i.e., well pad deconstruction, reseeding, and weed eradication in disturbed areas). Because vegetation resources would be restored or rehabilitated after proposed disturbance and/or development, there would be no anticipated irreversible impacts on native vegetation resources associated with the management decisions proposed for the Monticello FO. There would, however, be irretrievable impacts associated with surface disturbing activities proposed throughout the planning area. Native vegetation removed or disturbed when roads or trails are cut, oil pads installed, or other surface disturbance is implemented, is an irretrievable loss until successful restoration takes place. The acreage of this irretrievable disturbance would be identical to that described above for unavoidable adverse impacts.

4.3.18. VISUAL RESOURCES

The assumptions for analyzing the impacts to visual resources are 1) that the greater the size and/or severity of surface disturbance and/or degree of air quality degradation, the greater the impact there would be to scenic quality, and 2) that all Monticello PA resources with management decisions that would permit surface disturbances or degrade air quality would have adverse impacts on visual resources to some degree. Surface disturbances would introduce new, potentially noticeable, visual elements onto the landscape or intensify existing visual elements that would alter the line, form, color, and/or texture that characterize the existing landscape. Changes in air quality, either from smoke, dust, or other pollutants, could potentially reduce or degrade scenic quality by obscuring distant views in the short-term or long term.

Visual Resource Management (VRM) class designations are defined in Section 3.18.2. While reviewing the analysis of impacts, it should be noted that under VRM Class I visual resource objectives, landscape scenic quality would be maintained in its pristine, undeveloped, and natural state, permitting very minor changes to the landscape that should not be noticeable. Visual objectives under VRM Class II would also retain scenic quality within the natural landscape, but would allow minor man-made changes to the landscape, though these changes should not be noticeable to the casual viewer. The VRM Class III objectives would allow a moderate degree of man-made change to the landscape that would be visible, but the changes and contrasts with the natural should not dominate the natural landscape. Under VRM Class IV, major modifications of the natural landscape would be permitted and allowed to dominate the natural landscape. So, based on the above range of allowed changes to scenic quality, the visual resources analysis of impacts assumes that areas designated for management under VRM Class I objectives would receive the highest level of visual resource protection, that areas designated and managed under VRM Class II objectives would receive a high level of visual resources protection, and that VRM Class III and IV-designated areas would receive less visual resources protection. Thus, the analysis logically assumes that areas managed under VRM classes III and IV would allow more surface-disturbing impacts and potentially have greater adverse impacts on visual resources than those areas managed under VRM Class I and II objectives.

The BLM's VRM class objectives (see Section 3.18.2 and above) were used in analyzing surface disturbance and air quality impacts on visual resources. These objectives provide a consistent basis for determining how much a particular action would affect scenic quality, as well as

determining the level of disturbance an area could support while still meeting designated visual resource objectives.

Before VRM classes were designated under the proposed RMP, a visual resource inventory was conducted in order to assess current scenic quality and viewer sensitivity to viewscapes within the Monticello PA. This inventory process assists the Monticello FO in considering visual values in the RMP process. The inventory does not provide management direction and would not be used to limit or constrain surface-disturbing activities within the planning area. For the Monticello PA, the acreage results of the visual resource inventory are the same as the VRM class designation acreages under the current RMP (i.e., Alternative A). That is, there have been no substantial changes in viewer sensitivity or scenic quality since VRM class designations were assigned during the 1991 RMP process.

The determination and assignment of VRM class designations are based on the management decisions made during the RMP process. Once the RMP is completed and the VRM class designations are approved, the VRM class objectives are applicable to all land management actions; that is, once a VRM class designation has been assigned to an area, resource management and planning decisions that could impact visual quality are required to consider and to comply with the designated VRM class objectives of that area. Thus, analyses of the impacts of management decisions for other resources on visual resources were not discussed in this visual resources section because all potential impacts to visual resources that would be produced by the RMP management decisions would be required to comply with the designated and approved VRM class objectives.

It should be noted that, during the RMP process, other proposed land management objectives and management decisions affect the assignment of VRM class designations. For example, WSAs would be managed as VRM Class I in order to maintain their pristine and undeveloped landscapes, and their suitability for designation by Congress as wilderness; areas considered eligible for recommendation under the NWSRS would be managed as VRM Class I, II, or III depending on the resources considered for protection (wild, scenic, or recreation, respectively); areas with high mineral resources potential may be designated as VRM Class III or IV to allow surface-disturbing minerals exploration and development. Therefore, the VRM class designations that are proposed under the RMP are the result of a synthesis and balance of other proposed resource and land management actions (e.g., livestock grazing, minerals, recreation, special designations) with the visual resource inventory of scenic quality, visual resource values, and viewer sensitivity within the Monticello PA.

In this analysis of impacts of proposed management decisions on visual resources, a "macro" and "micro" approach was taken to analyze impacts to visual resources. At the macro scale, the acres of proposed VRM classes under the action alternatives were compared to Alternative A to determine the increase or decrease of acres proposed for protection of scenic quality under VRM Classes I and II. At the micro scale of analysis, representative visually sensitive areas with high scenic quality were selected within the Monticello PA and were analyzed for the impacts of the proposed management decisions on visual resources and scenic quality. These were areas where the proposed DRMP/DEIS alternatives varied in their VRM class designations, and they include Lockhart Basin, Indian Creek, and Valley of the Gods. The analytical methodology of determining the impacts to these areas was a comparison of the area's visual resource inventory

class (Alternative A) with the proposed VRM class designation for the area under each action alternative (Alternatives B–E).

Table 4.198 below shows the proposed VRM acreages managed under each VRM class designation for each of the alternatives, and the combined acreages of VRM classes III and IV.

Table 4.198. VRM Class Designation Acreages by Alternative

VRM Class	Alternative A (Visual Resource Inventory)	Alternative B	Alternative C	Alternative D	Alternative E
VRM Class I	371,575	497,668	425,179	390,424	998,370
VRM Class II	355,112	250,641	132,001	8,838	111,478
VRM Class III	416,806	426,350	531,920	692,741	264,369
VRM Class IV	637,875	608,463	693,995	691,119	407,459
Subtotal Classes III and IV	1,054,681	1,034,813	1,225,915	1,383,860	671,828
Total*	**1,781,368**	**1,783,122**	**1,783,095**	**1,783,122**	**1,781,676**

Source: BLM 2007d.

*Acreage figures may vary by alternative due to the changes in GIS technology and variances in GIS shapefiles.

4.3.18.1. Impacts Common to All Alternatives

Under all alternatives, VRM class objectives would be applicable to all land management decisions within the Monticello PA. Specifically, all VRM Class I areas would apply NSO stipulations, Controlled Surface Use stipulations would include requirements to meet VRM Class II objectives, eligible Wild and Scenic River segments would be managed as VRM Class I or VRM Class II, and all WSAs and lands with non-WSA wilderness characteristics would be managed as VRM Class I. These specific management actions would be generally beneficial because they would maintain and/or protect scenic quality to the extent allowable under the designated VRM class objectives.

4.3.18.2. Alternatives Impacts

4.3.18.2.1. Alternative A

As mentioned above, the Monticello FO visual resource inventory resulted in visual inventory classes that are the same as the current VRM class designations under Alternative A. Under this alternative, 371,575 acres (21% of the planning area) would be designated for the highest level of visual resource protection under VRM Class I, 355,112 (20% of the planning area) would be designated for a high level of protection under VRM Class II, and 1,054,681 acres (the remaining 59% of the area) would be designated for lower levels of visual resource management under VRM Class III and IV objectives.

4.3.18.2.2. ALTERNATIVE B

Alternative B would designate 497,668 acres for management under VRM Class I objectives (28% of the planning area would be managed for pristine, very high quality natural landscapes), 250,641 acres would be designated for management under VRM Class II objectives (14% of the planning area would be managed for high-quality, natural landscapes). Approximately 1,034,813 acres (the remaining 58% of the planning area) would be designated for management under VRM Class III and Class IV objectives that would permit moderate to major changes to the landscape. Compared to Alternative A, this alternative would designate 126,093 more acres as VRM Class I, 104,471 fewer acres as VRM Class II (a decrease of 6%), and 19,868 fewer acres as VRM Class III and IV (a decrease of 1%). This would have more direct, beneficial, long-term impacts on scenic resources and fewer potentially adverse surface-disturbance-related impacts on the resource than Alternative A because 7% more acreage under VRM I objectives would be managed for higher levels of visual resource protection and preservation than indicated by the visual resource inventory. Also, this alternative would designate fewer acres for management under VRM Class III and IV objectives, a 1% reduction in acreage managed for visual resource modification than indicated by the visual resource inventory.

4.3.18.2.3. ALTERNATIVE C

Under Alternative C, 425,179 acres would be designated and managed under VRM Class I objectives to maintain 24% of the planning area as undeveloped, pristine landscape, and 132,001 acres would be designated and managed under VRM Class II objectives (with 7% of the Monticello PA managed for high-quality landscapes).Visual resource designation and management under VRM Class III and IV objectives would include 1,225,915 acres (69% of the planning area permitted for moderate to high levels of visual resource impacts). Compared to the Alternative A, this alternative would manage 53,604 more acres for the highest level of visual resource preservation under VRM Class I than indicated by the visual resource inventory (an increase of 3%), and 223,111 fewer acres of high-visual quality protection under VRM Class II objectives (a decrease of 13%). Management under VRM Class III and VRM Class IV objectives for this alternative would increase the number of acres under these management classes by 171,234 (a 10% increase, when compared to the visual resource inventory). This would result in greater adverse impacts to visual resources than Alternative A because, while there would be long-term, beneficial impacts on visual resources by managing more acres at the highest level of resource protection under VRM Class I than indicated by the visual resource inventory, fewer acres within the planning area would be managed to preserve high-quality scenic landscapes under VRM Class II and more acres within the Monticello PA would be managed to permit surface disturbances, development, and man-made alterations of the existing landscape under VRM Class III and VRM Class IV than indicated by the visual resource inventory.

4.3.18.2.4. ALTERNATIVE D

Alternative D would designate and manage 390,424 acres under VRM Class I objectives (22% of the Monticello PA) and 8,838 acres under VRM Class II objectives (0.5% of the planning area), and 1,383,860 acres (the remaining 77.5% of the planning area) under VRM Class III and IV objectives. Compared to Alternative A, Alternative D would manage 18,849 more acres (an increase of 1%) under VRM Class I objectives for preservation of pristine, very high quality visual resources, but 346,274 fewer acres would be managed under VRM Class II objectives (a

reduction in acreage of 19.5% for landscapes inventoried as having high scenic quality), and manage 329,179 more acres under VRM Class III and IV objectives (an increase of 18.5%) than indicated by the visual resource inventory. Under this alternative, there would be long-term, adverse impacts to visual resources because more acres would be managed at lower levels of resource protection and fewer acres within the planning area would be managed at the higher levels of visual resource protection and preservation under this alternative than under Alternative A.

4.3.18.2.5. ALTERNATIVE E

Under Alternative E, approximately 998,370 acres would be designated and managed under VRM Class I objectives in order to preserve scenic quality and visual resources, including 582,357 acres of non-WSA lands with wilderness characteristics. This would result in 56% of the planning area being managed as VRM Class I (an increase in VRM Class I-designated and managed acreage of 268% when compared to Alternative A). Approximately 111,478 acres would be designated and managed under VRM Class II objectives (a decrease of 69% when compared to Alternative A), and a combined acreage of 671,828 under VRM Class III and IV objectives (a 36% decrease when compared to Alternative A). Under Alternative E, over 62% of the planning area would receive the highest levels of visual resource protection under VRM Class I and II objectives, with long-term, beneficial impacts to the resource and more beneficial, long-term, preservation-related impacts to scenic quality than under Alternative A.

4.3.18.3. VISUALLY SENSITIVE AREAS

4.3.18.3.1. LOCKHART BASIN

The area proposed as the Lockhart Basin ACEC was visually inventoried as VRM Class II and is currently designated as VRM Class III, with an objective of partially retaining the existing character of the landscape, permitting a moderate level of change to the landscape that does not dominate the view of the casual observer.

Management decisions under Alternative A would have visual resource-related impacts on the area because surface-disturbing activities and viewscape changes would be allowed. Under this alternative, the RFD of mineral resources, based on geophysical surveys of the Paradox Fold and Fault Belt that includes Lockhart Basin, predicts that an average of 25 natural gas exploration wells could be drilled within the belt during the lifetime of the RMP. If natural gas exploration and/or other mineral resource development projects were conducted within Lockhart Basin, then the VRM objectives that permit moderate levels of change to the landscape would have long-term, adverse impacts to visual resources from surface disturbance and visual resource degradation for those viewing Lockhart Basin within the Monticello PA. The impacts would include short-term surface-disturbance-related impacts to visual resources caused by drilling rigs, seismic exploration lines, and natural gas or oil exploration well pads. Long-term impacts would include increased visual contrasts caused by soil and vegetation surface disturbances, and visual contrasts from pipelines, well pad access roads, exploration and/or production well pads, natural gas extraction and compression infrastructure and facilities, and minerals-related vehicle traffic.

When viewed from the points of view looking down into the basin (from Island in the Sky in Canyonlands National Park, from Dead Horse Point in Dead Horse Point State Park, and from the Canyon Rims SRMA in the Moab FO planning area), the potentially adverse short-term and

long-term impacts to visual resources from minerals-related surface disturbances would be the same as when viewed from within the Basin, but to a greater degree. The impacts to scenic quality would be greater because of: 1) the likelihood that standard BLM visual resource impacts mitigation and minerals BMPs (e.g., camouflaged and/or low profile structures, edge feathering, topographically hidden disturbances or visual intrusions, reclamation of well drilling pads and roads) would not be effective when viewed from above the Basin; 2) the angle of view looking down into the Basin would likely show more adverse, surface-disturbance impacts and visual contrasts than when viewed from ground-level within the Basin; and 3) the high level of scenic quality within Lockhart Basin (as determined by the visual resource inventory), when viewed from the surrounding elevated points of view, would likely heighten the potential surface-disturbance-related contrasts created by minerals development.

Under Alternatives B and E, Lockhart Basin would be managed as a 47,783-acre ACEC for protection of scenic values under VRM Class I designation, with the objective of preserving the existing character of the landscape. A very low level of visual change would be permitted under this VRM management objective, and the level of change would be to a degree that would not attract casual viewer attention. The impacts on scenic quality under these alternatives would be beneficial in the long-term because surface-disturbing activities, visual intrusions, and potential visual contrasts would be greatly restricted or prohibited. Any proposed natural gas well drilling and minerals resource development within the Paradox Fold and Fault Belt area would likely not impact the Lockhart Basin because of the VRM restrictions placed on potential changes to the existing scenic quality of the area. From points of view within the Basin and above the Basin, the impacts on visual resources would be negligible to minor. Compared to Alternative A, these similar alternatives would be more beneficial to visual resources within Lockhart Basin because of the increased protection of visual resources (comparable to visual resource inventory Class I even though the area was visually inventoried as having a Class II level of scenic quality).

It should be noted that under Alternative E, approximately 21,298 acres of area managed under VRM Class I objectives as non-WSA lands with wilderness characteristics would lie within the proposed ACEC boundary, but because the area would be protected as VRM Class I under Special Designation Area management decisions for both alternatives, the impacts to visual resources would the same.

Management decisions under Alternative C would not designate Lockhart Basin as an ACEC for protection of scenic values. This alternative would designate the area that abuts the Moab FO planning area as VRM Class II (10,573 acres or approximately 22% of the basin) and the rest of the basin as VRM Class III. The VRM Class II management objectives would retain the existing character of the landscape, permitting a low level of change to the landscape that should not attract the attention of the casual observer. The impacts on visual resources in the area managed under VRM II would be beneficial in the short-term and long-term because visual resource objectives would maintain scenic quality at levels consistent with the area's inventoried scenic quality and viewer sensitivity. The impacts to visual resources in the area designated as VRM Class III would be similar to those described under Alternative A.

Under this alternative (Alternative C), the area would be open for mineral leasing, subject to Standard and Timing and Controlled Surface Use lease stipulations. An estimated 24 natural gas exploration wells could be drilled within the Paradox Fold and Fault Bent during the lifetime of the RMP. If natural gas exploration and/or development activities were conducted within

Lockhart Basin, then there would be the likelihood of short-term and long-term surface-disturbance and visual intrusion-related impacts to visual resources within the designated VRM Class III areas of the basin the same as those described under Alternative A. The designated VRM Class II areas would require more impacts mitigation in order to meet the VRM Class II objectives, so the impacts to visual resources would be minor. For those viewing the Basin from within the Monticello PA and at points looking down into the basin, the impacts within the designated VRM Class III area would be the same as those discussed under Alternative A because the VRM objectives would be the same. For viewers looking into the designated VRM Class II area of the Basin from the Monticello PA perspective, there would be minor impacts to visual resources from minerals-related surface disturbances because a small degree of visual contrasts and visual degradation would be permitted. For those viewers looking down into the Basin from elevated points of view within the VRM Class II area, the short-term and long-term, adverse impacts to scenic quality (as discussed under Alternative A) would be reduced because of the reduced level of permitted disturbances to scenic quality, but the impacts would be visible to the viewers for the same reasons as discussed under Alternative A: the angle of view would more clearly expose surface disturbances and contrasts, and mitigation would not likely be effective at reducing visual contrasts and intrusions. Compared to Alternative A, this alternative would be similarly adverse to visual resources in the VRM Class III area because the proposed VRM Class III objectives would allow scenic quality within the Basin to be degraded to a greater level than indicated by the visual inventory's VRM Class II rating. The area designated as VRM Class II would be more beneficial to visual resources because it would be managed for greater scenic quality protection, consistent with the visual resource inventory.

Alternative D would not designate Lockhart Basin as an ACEC. The area would be designated as VRM Class III, with the same impacts as those discussed under Alternative A because the management decisions are similar. Under this alternative, the area would be open for mineral leasing, subject to Standard and Timing and Controlled Surface Use lease stipulations. An estimated 25 natural gas exploration wells could be drilled within the Paradox Fold and Fault Bent during the lifetime of the RMP, with short-term and long-term impacts on visual resources as discussed under Alternative A.

4.3.18.3.2. INDIAN CREEK

Under Alternative A, the Indian Creek ACEC was visually inventoried and is currently designated as VRM Class I, with visual resource impacts similar to those discussed under Lockhart Basin Alternative B: the visual resource class objectives of preserving the existing character (and high scenic quality) of the landscape would limit impacts to visual resources to a very low level. Alternatives B, C, and E would also manage the proposed ACEC as VRM I, with negligible impacts to visual resources, comparable to Alternative A. Note that for Alternative E, approximately 3,887 acres designated as non-WSA lands with wilderness characteristics would be managed under VRM Class I objectives; however, the impacts to visual resources would not change as the proposed ACEC would be managed under VRM Class I management objectives through Alternative E special designation management decisions.

Management decisions under Alternative D would not designate Indian Creek as an ACEC. The area would be designated as VRM Class III, allowing moderate changes to the characteristic landscape from activities that attract attention but do not dominate the landscape, and with the objective of partially retaining the landscape's existing character. Portions of the area would be

open to mineral leasing under Timing stipulations, with minerals RFD in the Paradox Fold and Fault Belt the same as discussed under Alternative D for Lockhart Basin. The potential short-term and long-term impacts to visual resources would be similar to those discussed under Lockhart Basin, except that there would be no distinction between points of view looking down versus across the area of disturbance.

Compared to Alternative A, there would be more adverse, long-term impacts to visual resources under Alternative D within the Indian Creek area because a 1) a higher degree of surface disturbances and visual contrasts would be allowed under VRM Class III management objectives, and 2) the proposed VRM Class III objectives would permit scenic quality to be degraded to a greater level than indicated by the visual resource inventory Class I level for the area.

4.3.18.3.3. VALLEY OF THE GODS

Under Alternative A, the area proposed as the Valley of the Gods ACEC was visually inventoried and is designated as VRM Class I, with surface disturbance impacts required to be compatible with the very low degree of visual resource change allowed under this class objective. Valley of the Gods lies within the Monument Upward mineral resources survey area, and the predicted RFD average number of natural gas exploration wells within this survey area for this alternative during the lifetime of the proposed RMP would be 9 wells. Visual resource values are high in this area, and the Open minerals leasing category would require NSO stipulations. Any exceptions to these stipulations would require that visual mitigation measures reduce impacts to meet the current VRM I Class objectives. Thus, the impacts to visual resource values under this alternative would be negligible. The impacts under Alternatives B, C, and E would be the same as those discussed for Alternative A because the VRM Class I objectives would also be applied under these alternatives.

As noted above for Lockhart Basin regarding lands with non-WSA wilderness characteristics, the Valley of the Gods under Alternative E would contain approximately 20,743 acres of non-WSA lands with wilderness characteristics. However, as previously discussed, Special Designation Area management decisions would apply VRM Class I objectives to the area under Alternative E, so management of these VRM Class I non-WSA wilderness characteristics areas would not affect visual resource management because VRM Class I objectives would be applied to all of the proposed ACEC.

Under Alternative D, the Valley of the Gods area would not be designated as an ACEC and the VRM Class III designation and management objectives would be applied, as described under Lockhart Basin Alternatives C and D above. Under this alternative, the area would be open to mineral leasing with standard stipulations; however, as discussed above, the average predicted RFD of mineral resources would be 9 natural gas exploration wells within the Monument Upwarp minerals survey area for the lifetime of the proposed RMP. If mineral resource development was conducted within the Valley of the Gods area, the short-term and long-term impacts from mineral development would be similar to those discussed for Lockhart Basin Alternatives C and D, with the exception that there would be no distinction between points of view looking down versus across the area of disturbance.

4.3.18.4. SUMMARY OF IMPACTS

The visual resources analysis assumed that VRM Class I and II areas would receive the highest level of visual resources protection, and that VRM Class III and IV areas would receive less visual resources protection. So, VRM classes III and IV would allow more surface-disturbing impacts and potentially have greater adverse impacts on visual resources than those areas managed under VRM classes I and II. Table 2.2 of Chapter 2 shows the impacts to visual resources in terms of acreages affected for each alternative.

The impacts to visual resources within selected visually sensitive areas within the Monticello PA would be as follows.

4.3.18.4.1. LOCKHART BASIN

Under Alternative A the visual impacts from potential surface disturbances and visual intrusions would be moderately adverse in the long-term when viewed within and from areas surrounding the basin because of the current VRM Class III designation and management objectives for the area that would permit visible surface disturbances to and degradation of visual resources that have been inventoried as having VRM Class II scenic quality. Alternatives B and E would permit minor to negligible changes to visual quality under proposed VRM Class I designation and management objectives, thus retaining the existing scenic quality when viewed from within and from surrounding points of view. Alternatives C and D would designate and manage the area under VRM Class III objectives, which would allow moderate change to the characteristic landscape, with permitted changes to visual resources from potential oil and gas activities. The impacts to visual quality under Alternatives C and D would be the most adverse, when compared to Alternatives A, B, and E by permitting substantial visual quality degradation within an area of high scenic quality.

4.3.18.4.2. INDIAN CREEK

Under Alternative A, the visual resource class objectives of preserving the existing character (and high scenic quality) of the landscape would limit impacts to visual resources to a very low level. Alternatives B, C, and E would also designate the proposed ACEC as VRM Class I, with negligible to very minor impacts to visual resources, comparable to Alternative A. Alternative D would designate the area as VRM Class III Class, with management objectives that would allow moderate changes to the characteristic landscape, with a greater degree of permitted degradation of visual resources than the other alternatives.

4.3.18.4.3. VALLEY OF THE GODS

Under Alternative A, this highly scenic ACEC was visually inventoried and is designated as VRM Class I, with surface disturbance impacts required to be compatible with the very low degree of permitted visual resource change. Alternatives B, C, and E would have impacts similar to those for Alternative A because the VRM Class I designation and resource objectives would be applied under these alternatives. Alternative D would not designate the area as an ACEC and VRM Class III designation and class objectives would be applied, with permitted impacts to and potential degradation of the area's visual resources.

4.3.18.5. Mitigation Measures

Based on visual resource mitigation techniques described in BLM Manual H-8431-1, mitigation to minimize visual impacts resulting from facility development would include (but are not limited to):

- modifying facility design to reduce profile or height;
- applying appropriate coloring to facilities and structures as camouflage;
- planning and placement of roads and facilities to take advantage of local landscape features to hide these man-made features; and
- using local topography to hide surface-disturbing impacts or reduce visual contrasts.

All surface-disturbing activities would be subject to the VRM class objectives of the area where surface-disturbing activities would be proposed. The VRM visual contrast rating system would be used to assess the potential site-specific impacts of project surface disturbances, and to guide facility placement and facility design to mitigate the impacts to visual resources.

4.3.18.6. Unavoidable Adverse Impacts

Woodland harvesting, vegetation treatments for control of exotic species and fire management, the development of energy and communication sites, cross-country (open) OHV travel, and minerals resources exploration and development would likely cause short-term and long-term, unavoidable, adverse impacts on visual resources that would not be completely mitigated by camouflage coloring, facility placement or design, topographic screening of construction-related surface disturbance impacts or structures, or other site-specific visual resources mitigation techniques.

4.3.18.7. Short-term Use versus Long-term Productivity

Disturbance due to vegetation treatments for fire management, facility/campground construction, range improvements, mineral development and exotic species control would have short-term impacts on visual resources. However, some of these activities, such as vegetation treatments, exotic species control, and fire management would also have long-term, beneficial impacts on visual resources and scenic quality by reducing the potential for visual quality degradation from wildland fire, or by producing variations in vegetation communities that would create a more diverse (and a potentially more visually interesting) landscape. Accordingly, these short-term resource uses would not result in a loss in the long-term productivity of visual resources in the planning area.

The short-term impacts of exploratory well pad and associated access road construction would also likely cause a long-term loss or degradation of scenic quality in those areas where vegetation re-growth and establishment is slow or difficult. Additionally, the bulk of this development and its associated impacts to visual resources would remain during the life of the plan. However, the relatively small amount of predicted oil and gas drilling is unlikely to result in a loss of the long-term productivity of visual resources in the Monticello PA.

4.3.18.8. Irreversible and Irretrievable Impacts

Irreversible impacts to visual resources would be produced if visual resource-related cultural resources, such as pictographs, petroglyphs, and prehistoric and historic structures were damaged

or destroyed by other resource use activities (e.g., minerals exploration and development, recreation, OHV cross-country travel, fire management). However, substantial impacts of this type are unlikely due to the protection afforded these resources by Section 106 of the National Historic Preservation Act. Irretrievable impacts to visual resources would also be produced by surface disturbances such as mineral development, access road construction, facility construction, fire management, and vegetation treatments. This irretrievable loss would be most apparent in those areas of particular visual sensitivity noted above and under those alternatives that propose lower visual protections for those areas. The visual resources impacted by such developments would be irretrievably lost until those areas are rehabilitated or restored. However, because they can be restored, these impacts would not be irreversible.

4.3.19. WILDLIFE AND FISHERIES

This chapter provides the scientific and analytic basis for the comparisons of alternatives. The probable consequences of each alternative on wildlife resources are discussed in this section, beginning with impacts common to all alternatives and proceeding to a discussion of each alternative's impact on wildlife and fisheries resources. All acreages and percentages reported in this Wildlife and Fisheries section are approximations.

Table 4.199 summarizes where wildlife species are found in the Monticello PA by habitat type. These representative species were chosen for their high public interest, such as deer and elk, or because they represent an important ecological group, such as Neotropical birds. The Wildlife and Fisheries section in Chapter 3 (Section 3.20) explains the connection between specific habitat types and associated wildlife in more detail. The quantitative analyses in this section reflect impacts by habitat type, since the wildlife species in the PA are too numerous to analyze for individual species.

Table 4.199. Grouping of Wildlife Species by Native Habitat Type

Vegetation/ Habitat Type	Wildlife Associations
Aquatic*	Amphibians, fish.
Cliff/Rock*	Raptors, desert bighorn sheep, reptiles.
Conifer/Mountain shrub	Mule deer, elk, mountain lion, black bear (primarily old growth), neotropical birds, upland game birds, reptiles.
Desert scrub	Pronghorn, desert bighorn sheep, elk (winter), raptors, neotropical birds, upland game birds, reptiles.
Pinyon-juniper	Mule deer, elk, pronghorn, mountain lion, neotropical birds, upland game birds, reptiles.
Riparian/Wetland*	Mule deer, elk, mountain lion, neotropical birds, upland game birds, amphibian and fish species, reptiles.
Sagebrush/Perennial grass	Mule deer, elk, mountain lion, neotropical birds, upland game birds, reptiles.

* Aquatic and Cliff / Rock habitats are not generally discussed in subsequent analyses. Most impacts to wildlife species are terrestrially-based, and there are only a few acres of cliff/rock habitat in the Monticello PA.

4.3.19.1. Impacts Common to All Alternatives

Under all alternatives, the BLM would continue to cooperate with the UDWR to benefit native and naturalized fish and wildlife species in the long term by introducing, transplanting, augmenting, or reintroducing the species to historic or suitable ranges. Wildlife would benefit from guzzler installation and/or spring development in areas lacking proper water distribution or natural water sources. Habitat objectives would be considered in all reclamation activities, and priority given to meeting Standards for Healthy Rangelands (BLM 1997). The BLM would continue to allot 17,300 acres to wildlife, which would include parts of the slopes of Peter's Canyon and East Canyon. In addition, BLM would adhere to fence standards to allow wildlife movement when fences are being developed or maintained and adhere to BLM Habitat Management Guidelines for the American Pronghorn Antelope (BLM 1981 as revised). Predator management would continue to be coordinated with APHIS-Wildlife Services and UDWR under the existing MOU with APHIS-Wildlife Services.

In seasonal wildlife protection areas wildlife would benefit from special conditions regulating use during certain seasons. These special conditions would not affect maintenance and operation activities for mineral production or hunting during recognized hunting seasons.

Most of the acreages listed describe areas to be protected with timing stipulations. These protections will benefit the four big game species for which the protections are designed by reducing surface disturbance and other human-related disturbances; they will also benefit other wildlife species such as birds, small mammals, and reptiles that use the same habitats.

Under all alternatives, protections for deer and elk habitat occur primarily in sagebrush/perennial grass and pinyon-juniper woodlands, while those in pronghorn habitat occur primarily in desert shrubland. Land protected for desert bighorn is dominated by both desert shrub and pinyon-juniper woodland. Therefore, wildlife species that occur in sagebrush perennial grass, pinyon-juniper, and desert shrub habitats (see Table 4.199 at the beginning of this section) would be likely to benefit most from the special protection of big game habitats.

The BLM would pursue appropriate NRHP designation of eligible sites under current policy and guidelines as management decisions for cultural resources under all alternatives. New field inventories would be identified based upon probability for unrecorded significant cultural resources. In all land and resource use authorizations, the BLM would comply with Section 106 of the NHPA, the Native American Graves Protection and Repatriation Act (NAGPRA), and other federal and state laws specific to cultural resource management. In so doing BLM would consult with the State Historic Preservation Officer (SHPO), Tribes, and other interested parties. Any impacts to NRHP-eligible cultural resources would be mitigated. Sites, structures, objects, and traditional use areas that are important to Tribes would be protected to maintain the viewshed, intrinsic values, and the auditory, visual, and esthetic settings of the resources. Finally, since McLoyd Canyon-Moon House CSMA and Grand Gulch National Historic District are within WSAs these areas would be managed under the IMP though management prescriptions for cultural resource protection vary between alternatives. All these management decisions would have long-term beneficial impacts on wildlife since they generally result in avoidance or mitigation of surface-disturbing activities in potential habitat. Impacts common to all alternatives

related to the Cedar Mesa Cultural SRMA are discussed in Section 4.3.19.2.6 Impacts of Recreation Decisions on Wildlife and Fisheries.

The following lands and realty decisions would impact wildlife and fisheries in the Monticello PA: access, easements, leases and permits, utility/transportation systems, exchanges, disposals, and withdrawals. The Monticello FO AMS Chapter 7 contains a complete list of common realty issues the Monticello FO can expect (BLM 2005c). Under all alternatives, lands adjacent to Recapture Lake and land for two water treatment facilities and two airports would be identified for disposal in the Monticello PA. Total acreage of the land disposal would be approximately 8,879 acres. Because of the proposed uses of the areas identified for disposal, there is the potential for adverse impacts on wildlife resources on these lands due to loss of habitat. These adverse impacts would be reduced by required revegetation and/or minimization of surface disturbance in sensitive habitats. In addition, this disposal would lead to the potential acquisition of sensitive species habitat and relict vegetation areas as part of the exchange program, which would decrease the magnitude of the adverse impacts associated with the loss of native habitat in the Monticello PA. The implementation of the lands and realty program would have both short- and long-term adverse impacts on wildlife resources in the Monticello PA due to the surface-disturbing activities associated with land and realty decisions. Some adverse impacts would be reduced because of the many withdrawals and excluded areas that help preserve and protect sensitive environmental resources and areas. Other protection measures that would help to reduce the adverse impacts of this program on wildlife resources would include the acquisition and retention of any TES habitat, quality riparian areas, and key productive ecosystems.

Applications for lands and realty-related filming permits would have to meet the following criteria for approval: no impact to sensitive species habitat, no use of exotic species, no use of pyrotechnics or explosives, no more than temporary impacts to land, air, and water, and no adverse impact on relict environments or riparian areas. Applications for filming permits for acitivities in WSAs, WSR corridors, NRHP-eligible sites, and Native American sacred sites would have to meet additional criteria for approval (no significant use of livestock and a maximum of 15 vehicles and 75 people in the sensitive area). The increased human traffic, with attendant trampling of habitat and vegetation removal associated with filming operations could result in short- and long-term adverse impacts on vegetation resources and consequently, wildlife habitat. Filming operations also result in noise and visual disturbance to wildlife from the presence of humans. Adverse impacts would be reduced by adherence to the minimum impact criteria listed above.

For all alternatives' impacts from lands and realty decisions, Monticello FO AMS Chapter 7 contains a list of ACECs and SRMAs closed to ROWs in the Monticello PA. These closures would benefit wildlife by reducing human traffic and habitat disturbance. However, all areas not identified as avoidance or exclusion would be available for ROWs and could be subject to multiple-use terms on a case-by-case determination (BLM 2005c). The use of ROWs for utility and communication infrastructure could have direct, short- and long-term adverse impacts on wildlife due to loss of habitat, habitat fragmentation, and short-term human disturbance during construction activities.

Under all alternatives, livestock grazing would be managed according to the Guidelines for Grazing Management to achieve the Standards for Rangeland Health, which would benefit wildlife by maintaining or restoring the proper functioning condition (PFC) of riparian and

wetland wildlife habitat, maintaining desired species (including native and special status species) at a level appropriate to the site and conditions, and maintaining or improving aquatic habitat by ensuring that all state and federal water quality standards are met. Grazing would continue to be unavailable on 125,356 acres (specific areas identified in Table 2.1) and 17,300 acres in Peter's Canyon and East Canyon would continue to be allotted to wildlife. Management decisions common to all alternatives would make livestock grazing unavailable on certain allotments, directly benefiting big game by making more forage available. Alternatives that make fewer areas unavailable to livestock grazing would expose big game to the adverse impacts of competition for forage and cover. Livestock grazing in riparian areas could have adverse impacts on riparian-associated wildlife species (see Table 4.199). Direct adverse impacts would include competition with wildlife for forage, and possible trampling of individual animals or nests. Indirect adverse impacts of livestock use of riparian areas include an increased susceptibility to invasion by noxious weeds, which reduce the value of forage, and reduction of cover species for sensitive wildlife (Popolizio et al. 1994; Kauffman et al. 1983; Sarr et al. 1996). Bird species that rely on native riparian trees for nesting and roosting sites and protection from predators would be adversely affected by the replacement of native vegetation with introduced species (Saab et al. 1995). Fish, amphibian, and other aquatic species would be adversely impacted if improper livestock grazing caused erosion in saline soils. This would contribute to increased salinity in surface waters in the Monticello PA, which could modify species composition within an ecosystem (Galindo-Bect and Glenn 1999; Hart et al. 1998) and cause mortality of freshwater species (Nelson and Flickinger 1992). Sedimentation can have similarly adverse impacts. Soil compaction due to grazing in riparian areas would result in less rainwater infiltration into soils and more overland flow. The result would be large, short-lived flows rather than small, perennial flows (Trimble and Mendel 1995). This would reduce the duration of seasonal water availability for a wide range of wildlife species.

Under all alternatives adverse long-term impacts from minerals decisions on wildlife and their habitats would include habitat loss and fragmentation and subsequent occupation of areas for oil and gas well pads, open pit mines, and associated roads and infrastructure. These long-term impacts would also result in wildlife avoidance of these areas, reducing their value as habitat. Many species of wildlife avoid areas with high or inconsistent levels of noise, roads with frequent automobile/truck traffic, areas that are brightly lit at night, and areas surrounding human-built structures. Adverse short-term impacts include degradation resulting from the removal of vegetation (surface disturbance) and wildlife avoidance of disturbed areas. Surface disturbance would also increase the potential for invasion of undesirable plant species, including noxious weeds (Piemeisel 1951). The loss of native vegetation would result in long-term adverse impacts on wildlife by decreasing the amount of available habitat and degrading existing habitat. Wildlife species that use pinyon-juniper habitat would likely be the most heavily impacted by surface disturbance and related impacts due to oil and gas well development since pinyon-juniper habitat is the most common habitat type in the Monticello PA. Wildlife species that use desert scrub would likely be the next most heavily impacted by surface disturbance related impacts since desert scrub is the next most common habitat type in the Monticello PA (see Table 4.200).

Table 4.200. Percentages of Vegetation/Habitat Types that Occur in the Monticello PA

Vegetation Types	Monticello PA
Agriculture	0.3%
Conifer and Mountain Shrub	0.6%
Desert Scrub	23.6%
Developed	0.0%*
Disturbed	0.4%
Invasive Species / Noxious Weeds	0.2%
Pinyon-Juniper	64.3%
Riparian / Wetland	1.2%
Sagebrush / Perennial Grasslands	9.3%
Water	0.1%
Total	**100.0%**

*Values have been rounded to the nearest tenth of a percent. A value of 0.0% does not necessarily indicate that there are no acres of that vegetation type on the land – only that they are less than 0.1% of the total acres.

Adverse impacts of minerals decisions on wildlife resources would be reduced by the implementation of BMPs outlined in Section 2.1 and Appendix O. These include NSO stipulations in riparian habitat, required revegetation of oil and gas well sites upon project completion, and land management decisions that meet or move toward meeting Utah's Standards for Rangeland Health. In addition, the implementation of BMPs for the benefit of wildlife and their habitats (e.g., centralization of drill rigs and storage tanks, reduction of the number of access roads, and interim and final reclamation practices) would also reduce some of the short- and long-term adverse impacts listed above. Interim reclamation occurs during the operational phase of a project and consists of revegetating all areas surrounding wells and roads that are not actively used during oil or gas production. Final reclamation occurs when a well has been decommissioned and includes the practices of recontouring soil surfaces to match surrounding landforms, replacing topsoil, and reseeding with native plant species. The number of years required for successful final reclamation would depend on the habitat type; grasslands recover more quickly than sagebrush or desert shrub, which recover more quickly than forested areas such as pinyon-juniper or conifer habitat. A commonly used average value and goal for reclamation across the project is 10 years. Following the successful reclamation of a well site or road, the long-term adverse impacts to wildlife species would be largely eliminated.

The amount of land that is open to oil and gas leasing or other mineral use is not necessarily indicative of the number of acres that will be directly disturbed. Areas managed under Standard or Timing and/or Controlled Surface Use stipulations allow minerals development, but all of those acres would not be subjected to surface disturbance. Areas categorized as NSO or Closed exclude all surface-disturbing minerals development. Riparian and wetland habitat, lands with a slope greater than 40%, and VRM Class I areas have been excluded from analysis because they have been assigned the leasing category of NSO, which excludes them from all surface disturbance. The impacts of minerals decisions are analyzed for the entire Monticello PA rather than for each individual RFD area for the purposes of comparison. Impacts may be concentrated in particular RFD areas, however. Depending on the distribution of wildlife habitat across

particular RFD areas with high levels of disturbance, the amount of particular habitats disturbed may not match the composition of vegetation in the Monticello PA. The Blanding Sub-basin and Paradox Fold and Fault Belt RFD areas are projected to experience the greatest minerals development-related disturbances, and therefore impacts to wildlife and their habitat. These RFD areas contain predominantly pinyon-juniper habitat with desert scrub habitat as the second most common habitat. Of the three oil and gas development areas within the Monticello PA, wildlife habitat in the Blanding Sub-basin RFD area is expected to be most intensely impacted by minerals decisions because it has the highest predicted levels of oil and gas well development (41 wells over the life of the RMP under Alternative A). Site-specific analysis would be necessary to determine the exact impacts to wildlife from oil and gas development.

Under all alternatives the primary impacts of recreation on wildlife would include surface disturbance of wildlife habitat by vehicles and non-motorized recreationists, the introduction and spread of noxious weeds, and direct mortality through wildlife collisions with motor vehicles, and crushing of eggs or nests. In addition, many wildlife species (birds in particular) are sensitive to traffic and other human-caused noise. Traffic noise has been shown to directly interfere with bird vocal communication, which affects territorial behavior and mating success (Reijnen and Foppen 1994). Increased road traffic also increases the risk of direct mortality of wildlife species due to vehicle impacts; carrion-eating raptors and mule deer attempting to cross roads are especially vulnerable. Where designated, Special Recreation Management Areas (SRMAs) would reduce adverse impacts on wildlife by restricting recreation and reducing dispersed recreational activities in some habitat areas. In general, the impact of recreation decisions on wildlife and fisheries are expected to be minimal since areas used by recreationists are generally previously disturbed and recreationists are limited to and have a tendency to use established routes. Also, adverse impacts of recreation decisions would be partially mitigated by the required reclamation of disturbed areas to meet the Utah Standards for Public Land Health and Guidelines for Recreation Management and protective measures outlined for federally listed species under Impacts Common to All Alternatives. In addition, careful recreation management through decisions on woodland harvesting and gathering, permit number limits, camping and travel controls, implementation of fees, alternation of when use takes place, group size limits, pet regulations, designated camping sites, and other similar decisions would help to mitigate some impacts.

Though the Comprehensive Travel Plan and OHV Area Designations are discussed under Recreation (Table 2.1) the impacts of recreation decisions on wildlife and fisheries resources are discussed in Section 4.3.19.2.11 Impacts of Travel Management Decisions on Wildlife and Fisheries. The impacts of general policy for issuance and management of Special Recreation Permits (SRPs) are not discussed as these impacts would be negligible. The impacts of recreation decisions dealing with the ERMA also are not discussed. Assuming that recreationists in the ERMA use established routes and either camp in previously disturbed areas only or stay within 150–300 feet of these routes (as specified under each alternative) the difference between alternatives in terms of the impacts of recreation decisions on wildlife and fisheries would be negligible. The impacts of recreation decisions regarding SRMAs are discussed below.

Under all alternatives, riparian areas would be managed as NSO for oil and gas leasing. They would be open to mineral entry and disposal of mineral materials, but not in active floodplains or within 100 meters of riparian areas. Woodland product collection would be prohibited in all riparian areas. In addition, the Utah Standards for Rangeland Health and Guidelines for Grazing

and Recreation would be followed to achieve proper functioning condition (PFC). The BLM would avoid degradation of habitats that could result in the loss of riparian vegetation, and would implement the Southwestern Willow Flycatcher (SWFL) Recovery Plan where appropriate. These restrictions would decrease the intensity of surface disturbance in riparian habitat, which would benefit wildlife species that are found in riparian areas in the Monticello PA. However, because livestock grazing would be allowed in riparian areas under all alternatives, there would be some direct and indirect adverse impacts to riparian-dependent wildlife resulting from trampling and knocking nests out of shrubs and trees, and impacts to riparian vegetation, soils, and water quality. Improper livestock grazing has been shown to have adverse impacts on riparian ecosystems (Armour et al. 1994) and it may be necessary to remove livestock from an area if it is determined that the site is "Functioning at Risk."

Soils and watershed decisions under all of the alternatives would comply with Utah's Standards for Rangeland Health and Guidelines for Grazing and Recreation. In addition, all floodplains and riparian/wetlands would be managed in accordance with Executive Order 11988, which would protect the quality of stream water and federally listed species habitat. Uses in the Monticello PA would be managed to minimize and mitigate damage to soils, and activities located in areas with sensitive soils would be subject to site-specific NEPA analysis. These restrictions would decrease the number of acres in the Monticello PA subject to the adverse impacts of surface-disturbing activities on wildlife habitats, including surface water contamination and sedimentation by runoff from disturbed soils.

For impacts common to special designation areas under all alternatives, special designation areas, such as ACECs, WSRs, and WSAs would generally have long-term beneficial impacts on the wildlife and fisheries that occur within their boundaries by limiting or preventing surface disturbance, human activities, and associated habitat degradation and fragmentation. Possible adverse impacts to wildlife that are associated with special designations decisions include restrictions on or the exclusion of habitat improvements, watershed improvements, and vegetation treatments in wildlife habitats included within ACECs, WSRs, or WSAs. The restriction of these decisions could adversely impact wildfire prevention practices (e.g., by preventing the thinning of young, fire-ladder trees) or the adversely affect the ability to provide high value forage in a steep part of an eroding watershed. These restrictions could also potentially prevent the effective management of an area for wildlife habitat (e.g., preventing the encroachment of pinyon-juniper forest on sagebrush or grassland habitat). However, not all vegetation treatments would be beneficial to all wildlife species, as some species prefer woodlands while others depend on more open habitat for their survival. So, the exclusion of vegetation treatments in special designations areas would benefit some wildlife and adversely affect others. ACECs designated specifically to protect wildlife and vegetation would directly benefit wildlife species and their habitats. ACECs designated to preserve historic, cultural, and scenic values (as opposed to wildlife or vegetation) would indirectly benefit wildlife by limiting human and surface disturbance, preserving habitat or preventing noise. All ACECs are assumed to be beneficial to wildlife. Like ACECs, WSAs are assumed to beneficially impact wildlife resources through focused management. Under all alternatives, WSAs would be managed under the Interim Management Policy and Guidelines for Lands under Wilderness Review (IMP), and are designated as VRM Class I. Also, 2,155 acres of non-WSA lands with wilderness characteristics contiguous to the Butler Wash WSA would be managed so as to maintain their wilderness values. Where ACECs overlap WSAs, WSA management would take precedence.

The designation of a river as suitable for WSR status would beneficially impact wildlife that utilize habitats directly associated with the river (e.g., riparian, wetlands, open water) by mandating the protection of the river's "free-flowing character" and applying an NSO stipulation within 1/4 mile of the river.

For impacts common to all alternatives pertaining to special status species decisions, no activities would be permitted on public lands that would jeopardize the continued existence of plant or animal species that are listed, officially proposed, or candidates for listing as Threatened and Endangered (T&E). The BLM would commit to current and future conservation agreements, management plans, and recovery plans specific to T&E and BLM Sensitive Species, as described in Table 2.1. Although meant to protect and conserve special status species, the decisions would also benefit other wildlife species that share habitat with the targeted special-status species.

Under all travel alternatives, non-mechanized travel would be limited to designated routes and would continue to be managed under the 1991 San Juan RMP and under closure and restriction notices published in the Federal Register. Also under all alternatives, three National Scenic Byways and three National Scenic Backways would be established (Table 2.1). These management prescriptions are not likely to result in appreciable impacts on wildlife or wildlife habitat since they are existing routes already in use.

Under vegetation decisions impacts common to all alternatives, seed gathering and plant collection would be allowed in all areas meeting Utah's Rangeland Health Standards. This could have short-term, direct, adverse impacts on wildlife species and habitat due to trampling and human disturbance during collection activities, and in some cases depletion of food sources for some species. The spread of noxious, invasive, and non-native weed species would be controlled through implementation of the BLM weed management policies and action plans and by requiring pack stock and riding stock users to use certified weed-free feed. Restoration/rehabilitation activities would also be required to use certified weed-free seed mixes, mulch, fill, etc. Actions taken to help slow/stop the spread of weeds in the Monticello PA would help reduce the adverse impacts of surface disturbance associated with stock use, oil and gas development, and other activities that result in an adverse alteration of wildlife habitat. Sagebrush habitat would be managed under the Sage Grouse Habitat Conservation Strategy (BLM 2004d), which would have long-term beneficial impacts on wildlife species that utilize sagebrush habitat (Monsen 2004).

Under all alternatives for decisions related to visual resources, lands in the Monticello PA would be managed under one of four visual resource management classes (described in Section 3.18). All WSAs would be designated and managed as VRM Class I. Limited and very limited management activities would be allowed in these areas including non-mechanized short-term vegetation treatments and other surface-disturbing activities designed to enhance wildlife habitat. Similar restrictions on surface disturbances apply in designated VRM Class II areas. These types of disturbances could have minor short-term adverse impacts on wildlife habitats due to human traffic and temporary habitat disruption, but in the long-term these impacts benefit wildlife. Some areas that are classified as VRM Class I or II may be late succession areas with a monoculture of plant species. Not allowing vegetation treatments in these areas would have a long-term adverse impact on some wildlife species that benefit from a mid-succession habitat type with more understory or varying types of plant species. In areas designated as VRM Class III or IV, changes to the landscape could be moderate or high. Most types of vegetation

treatments and other surface-disturbing activities would be allowed in these areas. These types of disturbances could have long-term adverse or beneficial impacts on wildlife habitats in the Monticello PA, depending on the extent or type of treatment.

Under all alternatives for woodlands, the Healthy Forest Initiative and the Healthy Forest Restoration Act of 2003 would be implemented. In addition, National BLM Forest Health and Forest Management Guidelines would be followed. These decisions would partially mitigate the adverse impacts of woodland harvesting on wildlife species and their habitats in areas of the Monticello PA open to wood harvesting. Woodland treatments would be prioritized in high value/high risk areas including FRCC III, Wildland Urban Interface (WUI), and developed recreation facilities. These projects would allow for harvest of woodland products. Further, live woodland harvest would be allowed in areas with pinyon pine and juniper encroachment with a focus on creating sagebrush steppe communities. This action would result in short-term adverse impacts on mule deer and elk summer habitats due to temporary human disturbances, but in creating sagebrush steppe communities, it would have long-term beneficial impacts on mule deer and elk winter habitats. Finally, all non-WSA lands with wilderness characteristics would be closed to woodland product use, with long term beneficial impacts on habitat from reduced human disturbance.

Under all alternatives adherence to the Migratory Treaty Bird Act and Executive Order 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds" would have beneficial impacts on migratory birds including priority species identified on the current USFWS Birds of Conservation Concern list (2002 and as updated) and the Partners-in-Flight priority species list (as updated). The use of adaptive management strategies would more effectively conserve habitat and avoid impacts to these species. Avoidance of surface-disturbing activities and vegetation-altering projects, including broad-scale use of pesticides, during nesting season (May 1-July 30) would reduce adverse impacts on birds and their nesting habitats in the Monticello PA in the short-term. In the long-term vegetation-altering projects may improve habitat by providing more food sources and/or cover for birds or by helping to reduce fire risk. Further, the prioritization of habitat types most commonly used by migratory birds (lowland riparian, wetlands, and low and high desert shrub) for maintenance and improvement would increase the availability of high-quality habitat and reduce the adverse impacts of invasive plants (e.g., cheatgrass, tamarisk, Russian olive). Finally, in the Coordinated Implementation Plan for Bird Conservation in Utah, several Bird Habitat Conservation Areas were identified that would receive priority bird habitat conservation projects through cooperative funding initiatives that would benefit bird species (Martinsen et al. 2005).

Under all alternatives raptors would benefit from the use of "Best Management Practices for Raptors and Their Associated Habitats in Utah" (BLM 2006c; see also Appendix M) and from adherence to USFWS Guidelines for Raptor Management. Seasonal and spatial buffers, as well as mitigation, would be used to maintain and enhance raptor nesting and foraging habitat, while allowing other resource uses. BLM would also cooperate with utility companies, UDWR, and USFWS to prevent raptor electrocution, and close areas near raptor nests to recreational and other activities if those activities might result in nest abandonment.

Under all alternatives bighorn sheep would benefit primarily from prioritized habitat improvement projects on the five mesa tops (56,740 acres) within crucial habitat where potential conflict occurs between bighorn sheep and surface-disturbing activities. Further, livestock

grazing and associated range improvement projects would not be allowed in these areas and mitigation to replace lost forage would be required for projects that disturb or remove forage and browse species used by bighorn sheep. Domestic sheep would not be allowed to replace cattle in crucial bighorn habitat to prevent disease transmission and competition for forage. Bighorn sheep would benefit from BLM adherence to the recommendations of the BLM Bighorn Sheep Rangeland Management Plan (BLM 1993b, as revised) and the 1996 (as revised) Utah BLM Statewide Desert Bighorn Sheep Management Plan.

4.3.19.2. Impacts Common to All Action Alternatives

Management decisions for all action alternatives for cultural resources would implement specific plans, Cultural Resource Management Plans (CRMPs), and a plan for the Cedar Mesa Cultural SRMA (discussed in Section 4.3.19.2.6, Impacts of Recreation Decisions on Wildlife and Fisheries) would be developed. These plans would include protective measures; Native American consultation; regulatory compliance; cultural monitoring systems; identification of sites needing stabilization and protective measures; development of research designs; designation of sites for interpretive/educational development; identification of areas for cultural inventory; and development of specific mitigation measures. Plans would also designate sites, districts, landmarks, and landscapes that would be nominated for inclusion on the NRHP. These management efforts would result in beneficial long-term impacts on wildlife as they would help prevent disturbance-causing activities.

Also under all cultural resources action alternatives, BLM would: proactively manage wildlife risk around susceptible archaeological and cultural sites, reduce or eliminate threats from natural or human-caused deterioration or conflict with other resource use, and promote collaborative partnerships to help meet management goals and objectives for cultural resources. Further, identified at-risk cultural properties would be off limits to visitors with pets, climbing aids would be prohibited for access to ruins/cultural sites (except for emergencies or administrative needs), and cultural sites may be closed to visitation if they are at risk or pose visitor safety hazards.

Under all action alternatives decisions for lands and realty, new avoidance and exclusion areas and transportation and utility corridors would be established (see Table 2.1). Avoidance and exclusion areas would have a long-term beneficial impact on wildlife by preventing surface disturbance in these areas. Transportation and utility corridors, on the other hand, would have short- and long-term adverse impacts on wildlife by allowing surface disturbance, associated noise and disruption during surface-disturbing activities, and from habitat fragmentation.

Under all action alternatives, livestock grazing season of use changes would be implemented on several allotments (specific areas are identified in Table 2.1) throughout the Monticello PA. Also, desired utilization levels for key forage species would be identified, as needed, to achieve desired future conditions (DFC). In areas where utilization levels are not established, the level of use would be consumption of 50% of the current year's forage production.

Recreation decisions, under all action alternatives, would not allow camping within 200 feet of springs, Benefits Based Management (BBM) goals would be in effect for each SRMA, and selected recreation sites would be developed or improved on a prioritized basis (see Table 2.1). Further, all SRMAs would be designated as *special areas* under the Land and Water Conservation Fund definition, which could translate into permit requirements and fee payments for use of these areas. Long-term, beneficial impacts to wildlife would result from each of these

decisions from habitat preservation, except the recreation site development and improvements decisions, whereby further surface disturbance and loss of habitat would be expected from development and use of these sites.

Under all action alternatives for special designation areas, cultural resource management plans would be written for Alkali Ridge, Cedar Mesa, Hovenweep, and Shay Canyon ACECs. These management plans would result in long-term benefits to wildlife since they would focus on protection of the cultural resources in these areas resulting in additional protection of wildlife resources by avoidance of surface disturbance and other disrupting activities.

Under all action alternatives for travel, designated routes would be categorized for type of travel and adjustments to these categories would be made based on recreational demand and potential conflict. Impacts of adjustments would be analyzed and disclosed on the activity planning level. All non-motorized travel would be allowed on designated routes, and OHV travel would be allowed on the same routes unless otherwise designated. Routes in riparian areas classified as Functioning At Risk would be closed based on site-specific analysis of OHV impacts. A number of trails (Table 2.1) would be managed for non-mechanized use including foot travel, stock overnight use, and stock day use. These management prescriptions are likely to result in minor impacts to wildlife or wildlife habitat because they pertain to existing routes already in use.

Under vegetation action alternatives, 30,000 to 50,000 acres of vegetation treatments in FRCC III areas would occur over a 15-year period. Certain sagebrush communities (Table 2.1) would be prioritized for treatment. These treatments would have short-term adverse impacts on wildlife by removing forage and cover and by causing noise and other human disturbance during treatment activities, but long-term beneficial impacts on wildlife by re-establishing the historic fire regime in treated areas. Also under all action alternatives, greasewood would be removed in a number of areas (Table 2.1), which would have short-term adverse impacts on wildlife habitats in the treatment areas, but long-term beneficial impacts as a whole by removing undesirable, non-native plant species, and allowing the establishment of a diverse native vegetation community.

For visual resources, areas open to oil and gas leasing would be managed as VRM Class III or IV. Wild and scenic segments of WSRs would be managed as VRM Class I and II, respectively, while recreation segments would be managed under the same VRM Class as the surrounding lands.

Under all action alternatives for woodlands, numerous sites (listed in Table 2.1) would be excluded from woodland harvesting except for limited onsite collection of dead wood for campfires. These exclusions would mitigate the adverse impacts of woodland product use on wildlife resources in areas of the Monticello PA open to woodland harvesting (see alternative analysis below for a discussion of these adverse impacts).

4.3.19.3. Alternatives Impacts

Impacts varying between alternatives would primarily result from varying temporal and spatial restrictions on oil and gas leasing activities, geophysical work, and permitted or commercial OHV use in BLM designated wildlife habitats. These protections would benefit big game species by reducing surface disturbance and other human-related disturbances in critical locations and during critical times of the year. They would also benefit other wildlife species such as birds, small mammals, and reptiles that use the same habitats for the same reasons.

Management decisions related to air quality, health and safety, and paleontology would have a negligible impact on wildlife and fisheries and are excluded from the following analyses. The impacts would be negligible because protecting air quality by monitoring and maintaining constituent pollutants within established air quality standards, protecting public health and safety by reclaiming AML sites and managing hazardous materials within the PA, and allowing recreational and scientific fossil collecting would not affect wildlife species habitat protection and/or management.

4.3.19.3.1. ALTERNATIVE A

Under Alternative A varying acreages of crucial habitat would be closed to oil and gas leasing activities, geophysical work, and OHV use during certain times of the year for mule deer, pronghorn, and desert bighorn sheep (Table 4.201; Maps 65 and 73). These decisions would benefit these species by preventing disturbance in crucial habitat during critical use periods. For mule deer and desert bighorn sheep, portions of crucial habitat fall within ROS P-Class (recreation primitive areas) or SPNM-Class (semi-primitive non-motorized recreation areas) designated areas, which impose stricter conditions that take precedence over the temporal closures described. These conditions would benefit these species by further restricting surface-disturbing activities in crucial habitat. Additional measures affecting each species are discussed on a species by species basis below. Overall, Alternative A would provide the least amount of wildlife habitat subject to special wildlife conditions (540,260 acres) and therefore would benefit wildlife and fisheries the least.

Table 4.201. Acreage Closed and Season of Closure for Mule Deer, Elk, Pronghorn, and Desert Bighorn Sheep By Alternative

Species	Special Conditions	Alternatives				
		A	B	C	D	E
Mule Deer	Acres Closed	197,550	785,921	266,406	182,315	785,921
	Timing	12/15-4/30	11/1-5/15	11/15-4/15	12/1-4/15	11/1-5/15
	Days Closed	137	196	152	136	196
Elk	Acres Closed	N/A	191,173	97,471	62,484	191,173
	Timing	N/A	11/1-5/15	11/15-4/15	12/1-4-15	11/1-5/15
	Days Closed	N/A	196	152	136	196
Pronghorn	Acres Closed	12,960	29,365	29,365	13,961	29,365
	Timing	5/15-6/15	5/1-6/15	5/1-6/15	5/1-6/15	5/1-6/15
	Days Closed	32	46	46	46	46
Desert Bighorn Sheep	Acres Closed[1]	329,750	453,388	453,390	299,009	453,388
	Timing	a. 4/1-7/15 b. 10/15-12/31	a. 4/1-7/15 b. 10/15-12/31	a. 4/1-6/15 b. 10/15-12/15	a. 4/1-6/15 b. 10/15-12/15	a. 4/1-7/15 b. 10/15-12/31
	Days Closed	a. 106 b. 78	a. 106 b. 78	a. 76 b. 62	a. 76 b. 62	a. 106 b. 78

1 The letter “a” denotes the acreage and timing for lambing and the letter “b” is for rutting.

4.3.19.3.1.1. Mule Deer

Proposed land treatments would be considered on a case-by-case determination on approximately 9,800 acres of sagebrush parks within crucial deer winter range. These sagebrush parks have been identified as providing a concentrated food source for wintering deer and land treatments in these areas would benefit deer by maintaining this food source.

4.3.19.3.1.2. Elk

Under Alternative A no crucial elk habitat is identified. Excluding elk habitat considerations from management decisions would have an adverse impact on elk since there would be no consideration given to the species' minimum requirements for healthy herds and individuals.

4.3.19.3.1.3. Desert Bighorn Sheep

Under Alternative A competition for forage and transmission of disease from domestic to wild sheep would be prevented by denying changes in kind of livestock from cattle to sheep in crucial desert bighorn sheep habitat. Desert bighorn sheep would benefit from these measures through increased forage and decreased incidence of disease within the population.

4.3.19.3.2. ALTERNATIVES B AND E

Under Alternatives B and E seasonal wildlife protection areas would have special conditions for all land use activities except woodland harvest. All seasonal wildlife protection areas would be closed to oil and gas leasing activities, geophysical work, permitted or commercial OHV use, and low-flying aircraft during the established season. Noise impacts from pyrotechnics, shooting and similar activities during permitted filming would also not be allowed. Acreages subject to these special conditions vary by species, as do seasons of closure (see Table 4.201; Maps 66 and 74). All species would benefit from special conditions by protecting habitat during critical use periods. Additional measures affecting pronghorn are further discussed below. Total acreage subject to special wildlife conditions would be greater under Alternatives B and E than under Alternative A (Table 4.202).

Table 4.202. Total Acres Subject to Special Wildlife Conditions by Alternative

	Alternatives				
	A	B	C	D	E
Acres	540,260	1,459,847	808,637 and 846,632	557,769	1,459,847

4.3.19.3.2.1. Mule Deer

Alternatives B and E would have more beneficial impacts on mule deer than Alternative A because of greater forage availability given the expanded seasonal wildlife protection area and the lengthened season of closure. The length of timing stipulations are of particular importance because mule deer migration timing may vary each season due to weather severity and seasonal changes in the energy needs of the animal (Garrott et al. 1987).

4.3.19.3.2.2. Elk

Alternatives B and E would have greater beneficial impacts on elk than Alternative A because Alternatives B and E establish seasonal wildlife protection areas and timing stipulations for elk whereas Alternative A contains no prescriptions for elk.

4.3.19.3.2.3. Pronghorn

Alternatives B and E would be more beneficial to pronghorn than Alternative A since the seasonal protection area for pronghorn would be more than doubled under this alternative. Also, the pronghorn timing stipulations are lengthened by 14 days, a 43.75% increase, over the stipulations under Alternative A, benefiting pronghorn during fawning season. Additionally, spring grazing (April 15 – June 15) would be eliminated in the Mail Station, Upper Mail Station, Dry Valley/Deer Neck, Lone Cedar, Tank Draw, and Hart Draw grazing allotments within pronghorn habitat. This would benefit pronghorn by increasing available coverage for new born fawns in these areas and providing more forage for pregnant and lactating females, thereby increasing fawn survival.

4.3.19.3.2.4. Desert Bighorn Sheep

Alternatives B and E would have greater beneficial impacts on desert bighorn sheep than Alternative A by expanding the seasonal wildlife protection area for desert bighorn sheep thereby allowing more area for foraging, reducing habitat fragmentation caused by disturbance and reducing disturbance to sheep and lambs during the sensitive times of their life cycles. These alternatives would also provide more food for pregnant and lactating females, which would be expected to increase recruitment. Singer et al. (2001) concluded that management with goals to restore or increase bighorn sheep populations should focus on large habitat patches located at least 23 km from domestic sheep herds. By adding acreage to the bighorn seasonal wildlife protection area Alternatives B and E are consistent with this conclusion.

4.3.19.3.3. ALTERNATIVE C

Alternative C is the same as Alternatives B and E except that Alternative C allows for a limited number of permitted or commercial OHV users. Permitted or commercial OHV use in seasonal wildlife protection areas would have an adverse impact on wildlife due to habitat fragmentation and increased noise. Also, under Alternative C pronghorn would be impacted by the continuation of current livestock-grazing prescriptions. Where opportunities exist livestock-grazing would be adjusted to enhance forb production on pronghorn ranges including the grazing allotments listed under Alternative B. However, this method of forb enhancement does not ensure that habitat would be improved for pronghorn since cattle have been shown to eat forbs during times of grass dormancy (McCollum and Galyean 1985).

In terms of the acreage of seasonal wildlife protection areas Alternative C is more beneficial than Alternative A for mule deer, elk, pronghorn, and desert bighorn sheep since these areas are larger under Alternative C (see Table 4.202; Maps 67 and 75).

In terms of timing stipulations Alternative C is more beneficial than Alternative A for mule deer elk, and pronghorn since the timing stipulations are longer under this alternative. For desert bighorn sheep Alternative C is less beneficial than Alternative A because the timing stipulations are shorter under Alternative C (see Table 4.202).

Total acreage subject to special wildlife conditions is less under Alternative C than Alternative B but greater than Alternative A (see Table 4.202).

4.3.19.3.4. ALTERNATIVE D

Alternative D decisions would be the same as Alternatives B and E with the exception of OHV restrictions (Maps 68 and 76). Under this alternative, permitted or commercial OHV use would be restricted to designated routes. Restricting OHV use to designated routes would be beneficial to wildlife by concentrating surface disturbance and noise in these locations. However, OHV use in general would have an adverse impact on wildlife by increasing noise disturbance and human presence in seasonal wildlife protection areas and fragmenting habitat. Also, under Alternative D pronghorn would be beneficially impacted by the use of prescriptive livestock grazing to favor forb production on pronghorn ranges in grazing allotments identified under Alternatives B and C.

In terms of acreage of seasonal wildlife protection areas Alternative D is less beneficial than Alternative A for mule deer and desert bighorn sheep because it would provide the smallest area. For elk Alternative D would provide more area than Alternative A and therefore would be more beneficial. Pronghorn would benefit from 1,001 acres more seasonal wildlife protection area under Alternative D than Alternative A.

With respect to timing stipulations Alternative D and Alternative A are similar for mule deer (136 compared to 137 days) and identical for desert bighorn sheep. For elk and pronghorn Alternative D is more beneficial than Alternative A.

4.3.19.3.5. IMPACTS OF CULTURAL RESOURCE DECISIONS ON WILDLIFE AND FISHERIES

Impacts varying between alternatives primarily involve the establishment of Cultural Special Management Areas (CSMAs) where identified cultural resources can be protected over the long-term from potentially destructive practices such as minerals extraction, geophysical activities, permitted or commercial OHV use, and uncontrolled visitation. Decisions to establish or expand CSMAs are generally directly beneficial to wildlife as they prevent some or many of these activities, which are also detrimental to wildlife habitat integrity and population viability.

Though human visitation to cultural sites would likely deter wildlife from using these areas, impacts on wildlife are expected to be negligible since visitation would be controlled through management prescriptions and/or sites are already being impacted by visitation. Other possible adverse impacts to wildlife that are associated with cultural resource decisions include restrictions on or the exclusion of habitat improvements, watershed improvements, and vegetation treatments in wildlife habitats included within CSMAs. While helping to preserve an area's cultural resources, the restriction of these decisions could adversely impact wildfire prevention practices (by preventing the thinning of young, fire-ladder trees) or the ability to provide high value forage in a steep part of an eroding watershed. These restrictions could also potentially prevent the effective management of an area for wildlife habitat (e.g., preventing the encroachment of pinyon-juniper forest on sagebrush or grassland habitat). However, not all vegetation treatments would be beneficial to all wildlife species, as some species prefer woodlands while others depend on more open habitat for their survival. So, the exclusion of vegetation treatments in CSMAs would benefit some wildlife and adversely affect others.

Impacts varying between alternatives resulting in notable differences in impacts to wildlife and fisheries are described below by proposed CSMA, the Grand Gulch National Historic District,

and Historic Trails. Habitat types by CSMA and the Grand Gulch National Historic District are described in Table 4.203 to provide an indication of which species would be most affected by management decisions.

Table 4.203 Acreage of each Cultural Area by Vegetation Cover Type and Associated Wildlife

Vegetation Type	Wildlife Associations	Comb Ridge CSMA	Tank Bench CSMA	Beef Basin CSMA	McLoyd Canyon-Moon House CSMA	Grand Gulch National Historic District
Conifer/ mountain shrub	Mule deer, elk, mountain lion, neotropical birds, upland game birds.	15,884	0	20	0	13
Desert scrub	Pronghorn, desert bighorn, elk (winter), raptors, neotropical birds, upland game birds.	0	858	181	0	7,154
Pinyon-juniper	Mule deer, elk, mountain lion, neotropical birds, upland game birds.	17,576	1,564	15,796	1,408	26,902
Riparian and wetland	Mule deer, elk, mountain lion, neotropical birds, upland game birds, amphibian and fish species.	3,378	225	17	3	860
Sagebrush and perennial grassland	Mule deer, elk, pronghorn, desert bighorn, mountain lion, neotropical birds, upland game birds.	1,147	0	4,285	196	2,434
Total Vegetated Acres		**37,985**	**2,647**	**20,299**	**1,607**	**37,363**

4.3.19.3.5.1. Comb Ridge CSMA

Alternative A

Under Alternative A, there would be no specific management restrictions at Butler east of Comb Ridge limiting or mitigating against the adverse impacts of visitation as described above. Further, the area would be open to permitted or commercial OHV use and grazing. OHV use and grazing would have adverse impacts on wildlife as described in Section 4.3.19.2.11, Impacts of Travel Management Decisions on Wildlife and Fisheries, and Section 4.3.19.2.4, Impacts of Livestock Grazing on Wildlife and Fisheries, respectively.

Alternative B

Under Alternative B, the Comb Ridge CSMA would be managed as a CSMA for heritage tourism and traditional cultural values. It would be closed to woodland product collection and geophysical work, disposal of mineral materials and locatable mineral entry. It would be open to oil and gas leasing subject to NSO and would only be available for non-surface-disturbing vegetation treatments. The area would also be available for range, wildlife habitat, and watershed

improvements. Camping would be limited to designated campgrounds and hiking and permitted or commercial OHV use would be limited to designated trails with group size limits. Alternative B would be more beneficial to wildlife than Alternative A since Alternative A would allow for more surface-disturbing activities than Alternative B.

Alternative C

Alternative C is the same as Alternative B except that woodland product collection and surface-disturbing vegetation treatments would be allowed under Alternative C. Vegetation treatments could be either adverse or beneficial for wildlife, depending on the treatment under discussion and which habitat a species primarily uses. Alternative C would be more beneficial for wildlife than Alternative A because of greater restrictions on surface-disturbing activities than Alternative A.

Alternative D

Under Alternative D Comb Ridge would not be managed as a CSMA. Instead, the area would be managed with the same prescriptions as surrounding lands. Compared to Alternative A, the management of Comb Ridge under Alternative D would be more beneficial for wildlife, since the impacts related to OHV use would be reduced by limiting OHVs to designated trails.

Alternative E

Alternative E is the same as Alternative B except that under Alternative E Comb Ridge CSMA would be closed to oil and gas leasing and OHV use and range, wildlife habitat, and watershed improvements could be maintained with no new improvements permitted. In general Alternative E would be more beneficial to wildlife than all other alternatives since it places the greatest restrictions on surface-disturbing activities. For some species this alternative would have mixed benefits since new range, wildlife habitat, and watershed improvements would not be permitted.

4.3.19.3.5.2. Tank Bench CSMA

Alternative A

Under Alternative A, there would be no specific management prescriptions for Tank Bench CSMA.

Alternatives B and E

Under Alternatives B and E, the Tank Bench CSMA would be managed as a CSMA and would have the same surface disturbance restrictions as the Comb Ridge CSMA under Alternative B, except that campfires, OHV use, domestic pets, and pack animals would not be allowed. Prohibiting campfires would reduce fire risk for wildlife habitat and prohibiting OHV use would protect more intact habitat for wildlife species while reducing noise disturbance. Disallowing pets would reduce wildlife harassment and noise disturbance caused by these animals. People using pack animals are required to bring their own weed-free hay as animal feed so there would be no discernable difference in forage availability and therefore no impact on wildlife from prohibiting pack animals. Alternatives B and E would be more beneficial to wildlife than all other alternatives since these alternatives place greater restrictions on surface-disturbing activities.

Alternative C

Alternative C is the same as Alternative B except that the following surface-disturbing activities would be allowed: oil and gas leasing under standard lease terms; locatable mineral entry, disposal of mineral materials, and geophysical work; hiking off trail; and surface-disturbing land treatments. However, in comparison to Alternative A, the management of Tank Bench CSMA under Alternative C would be more beneficial to wildlife and their habitats, since Alternative C would still allow fewer surface-disturbing activities.

Alternative D

Under Alternative D the Tank Bench area would not be managed as a CSMA. There would be no restrictions on surface-disturbing activities as in other alternatives; therefore Alternative D would result in greater adverse impacts on wildlife than all other alternatives.

4.3.19.3.5.3. Beef Basin CSMA

Alternative A

Under Alternative A, there would be no specific management restrictions at Beef Basin CSMA. Impacts would be of the nature described above under Alternative Impacts.

Alternative B

Under Alternative B, Beef Basin CSMA would be managed as a CSMA for heritage tourism, traditional cultural values, and scientific research of prehistoric cultural landscapes. Under this alternative, Beef Basin would be subject to a number of human disturbance restrictions. These restrictions would have beneficial impacts on wildlife resources in the area by reducing human disturbances. Alternative B would be more beneficial to wildlife than Alternative A.

Alternative C

Alternative C is the same as Alternative B except that groups could be up to 20 people, open campfires would be allowed (fire pan required), and additional areas for primitive car camping would be established as needed. This alternative would be more beneficial to wildlife than Alternative A due to increased restrictions on surface-disturbing activities.

Alternative D

Under Alternative D Beef Basin would not be managed as a CSMA. It would be managed the same as under Alternative A except that it would be closed to woodland products harvest. The fact that Beef Basin would not be managed as a CSMA under Alternative D should have no bearing on impacts to wildlife if the logistics of management remain the same as Alternative A.

Alternative E

Alternative E is the same as Alternative B except that additional restrictions would be in place to avoid impacts in areas with non-WSA wilderness characteristics. Alternative E would be more beneficial to wildlife than all other alternatives since it would result in the fewest surface-disturbing activities.

4.3.19.3.5.4. McLoyd Canyon-Moon House CSMA

Alternative A

Under Alternative A, no public travel would be allowed on the northern section of spur road D4798 except for the purpose of BLM site maintenance. This decision would affect very little habitat area and likely would have very little impact on wildlife resources in the area. Under this alternative there are no additional management prescriptions for protection of cultural resources.

Alternatives B–E

Under Alternatives B–E, McLoyd Canyon-Moon House CSMA would be subject to a number of surface disturbance restrictions which vary slightly between each alternative. Further, Utah State Section 2, Township 39S Range 19E, would be acquired. Under each of these alternatives surface disturbance restrictions and the acquisition of the aforementioned land area would have long-term beneficial impacts on wildlife resources in the area by reducing human disturbances. Though management prescriptions do vary this variation is minor and is therefore not expected to result in appreciable differences between alternatives in terms of impacts on wildlife.

4.3.19.3.5.5. Grand Gulch National Historic District

Alternative A

Under Alternative A, the Grand Gulch National Historic District would be closed to mineral leasing and disposal of mineral materials, and excluded from commercial use of woodland products except for limited on-site collection of deadwood for campfires. No motorized or mechanized equipment would be allowed, including OHVs. Because the site would be managed as an ROS P, only primitive recreation opportunities would be allowed, and even primitive recreation could be limited if cultural resources or scenic values become impacted. The area would be open to livestock use except for 9,000 acres in and around Grand Gulch Canyon and its tributaries. With the possible exception of the livestock use provision, these management decisions would have beneficial impacts to wildlife by limiting surface-disturbing activities.

Alternatives B and E

Under Alternatives B and E, the Grand Gulch National Historic District would be closed to all surface disturbances with the exception of designated trails and camping areas. These restrictions would beneficially impact wildlife species and their habitats in the area by reducing human disturbances. The greater restrictions associated with Alternatives B and E would have more beneficial impacts to wildlife than Alternative A.

Alternative C

Alternative C is the same as Alternatives B and E except that non-motorized habitat improvements, watershed improvements, and vegetation treatments as well as pack animals would be permitted and secretarial withdrawal for mineral entry would not be requested. As stated above vegetation treatments would have short-term adverse impacts to wildlife (during the active phase of removing vegetation—though impacts would be less with non-motorized techniques than motorized) though wildlife would benefit in the long-term. The presence of pack animals would have a negligible impact on most wildlife species, since horses and mules are not known to harass wildlife, and since they would feed on weed-free hay rather than forage. In

comparison to Alternative A, the management of Grand Gulch National Historic District under Alternative C would be more beneficial to wildlife and their habitats.

Alternative D

Alternative D is the same as Alternative C except that the area would be open to oil and gas leasing subject to NSO and open to "casual use" geophysical exploration if the WSA is released by Congress. Provided Congress releases the WSA, Alternative D would impose more harmful impacts on wildlife than all other alternatives.

4.3.19.3.5.6. Historic Trails

Alternatives A–E

Under all alternatives the Old Spanish National Historic Trail would be managed to protect the resource values for which it was designated. Protection of these resource values would result in beneficial impacts to wildlife since surface-disturbing activities would be prevented or curtailed.

4.3.19.3.6. Impacts of Fire Management Decisions on Wildlife and Fisheries

The impacts of fire management on wildlife would be the same under all alternatives, with all decisions guided by the Utah Land Use Plan Amendment (LUP Amendment) for Fire and Fuels Management (BLM 2005g). Adherence with the LUP Amendment (which mandates the maintenance of existing healthy ecosystems and the protection of threatened, endangered, and special status species) would have beneficial impacts on wildlife habitat in the Monticello PA wherever wildlife habitat overlaps with that of protected special status species, and would ensure that healthy ecosystems are not adversely impacted by fire management and fuels reduction. Wildland fire use would not be authorized in areas that are known to be highly susceptible to post-fire cheatgrass or other weed invasion, important terrestrial and aquatic habitats, and non-fire adapted vegetation communities unless reasonable Resource Protection Measures (RPMs) were in place. These RPMs would have beneficial impacts on wildlife habitat by reducing the spread of weeds and preserving native plant species, thereby maintaining suitable wildlife forage, cover, and habitat.

Fuels management decisions include fuels-reduction treatments on 5,000 to 10,000 acres annually. These fuels-reduction treatments include: mechanical and manual treatments, prescribed fire, chemical or biological vegetation control, and aerial/ground seeding. These fuels management decisions would likely have a beneficial long-term impact on wildlife and fish populations by helping to restore the natural fire regime, which would improve habitat health (Lewis and Harshbarger 1976), forage, nesting opportunities, and cover. Restoring the natural fire regime would also reduce the chance of wildland fire, and the subsequent loss of major ecosystem components. In the short-term, vegetation treatments could result in trampling or removal of wildlife forage and/or habitat, and human-caused wildlife disturbance.

4.3.19.3.6.1. Terrestrial Species

Short-term adverse impacts to terrestrial wildlife from fire management decisions include mortality, habitat destruction, and habitat displacement. Fire management decisions would likely affect habitat used by raptors, migratory birds, small mammals, amphibians, reptiles, and big game species. Direct impacts from wildfire suppression could include habitat corruption from

fire retardant and aviation fuel, soil erosion from fireline construction on steep slopes, and damaged vegetation and soils from heavy equipment and fire camps.

The adverse impacts of fuels management decisions include the short-term disturbance of wildlife habitat while it regenerates and the thinning and removal of ecologically desirable species. Short-term impacts of treatments would include the mortality of non-target plants due to herbicide use and from seeding methods that cause soil surface disturbance. These decisions could result in a reduction of native species diversity and consequently a reduction in wildlife habitat.

However, managed wildfire and prescribed burns provide long-term benefits to wildlife and wildlife habitat. Fire produces a varied mosaic of habitats and results in the regeneration of old and decadent vegetation, which can be favorable to big game. Fuel reduction treatments also reduce the risk of catastrophic fire, which otherwise could cause the long-term loss of wildlife habitat.

4.3.19.3.6.2. Aquatic and Amphibious Species

Adverse impacts to fish, amphibians, and other aquatic species would include an increase risk of contaminating water sources with fire retardant or vehicle fluids; soil erosion following surface-disturbing fire suppression measures; damage to riparian vegetation and soils by heavy equipment; and reduced stream flow where water for fire suppression is drawn directly from streams and water bodies. Erosion would increase the sedimentation of surface waters, which affects water temperature, turbidity, and chemistry. These changes in water quality would generally have adverse impacts on aquatic species. In the long-term, fish, amphibians, and other aquatic species would benefit from fire management decisions by an overall reduction in erosion and soil loss and sedimentation of surface waters, and an increase in ground cover.

4.3.19.3.7. Impacts of Lands and Realty Decisions on Wildlife and Fisheries

Impacts that vary between alternatives largely result from variation in the types of areas where ROWs for wind and solar energy development would be considered. Development associated with wind and solar energy would have direct, long-term, adverse impacts on wildlife where installation occurs. These impacts would result from loss of wildlife habitat, habitat fragmentation, human disturbance during construction and maintenance, and the potential introduction of invasive plant species by construction equipment and construction and maintenance personnel. Under alternatives that exclude more areas from consideration for ROWs the short- and long-term benefits would be greater to wildlife species since less surface disturbance and habitat loss would occur under these alternatives.

4.3.19.3.7.1. Alternative A

Impacts associated with Alternative A are the same as impacts common to all alternatives. Alternative A does not include prescriptions for permitting ROWs for wind and solar energy development.

4.3.19.3.7.2. Alternative B

Alternative B would authorize ROWs for wind or solar energy development in the Monticello PA except in WSAs; WSR corridors; ACECs; all areas managed as open to leasing with major constraints, such as NSO; VRM Class I, II, and III areas; migratory bird habitats and raptor nesting complexes in riparian habitats and sagebrush and aspen; and special status species habitats.

4.3.19.3.7.3. Alternative C

Alternative C is the same as Alternative B except that Alternative C would allow ROWs for wind and solar energy development in ACECs, VRM Class II and III areas, and special status species habitat. These additional ROW allowances would result in more short- and long-term adverse impacts on wildlife compared to Alternative B since more land would be subject to surface-disturbing activities associated with wind and solar energy development.

4.3.19.3.7.4. Alternative D

Alternative D is the same as Alternative C except that Alternative D would also allow ROWs for wind and solar energy development in WSR corridors, migratory bird habitats, and raptor nesting complexes in riparian habitats, sagebrush, and aspen. Under this alternative, adverse impacts to wildlife in the short- and long-term would be greater than under all other alternatives since more allowances are made for ROWs for wind and solar energy related activities.

4.3.19.3.7.5. Alternative E

Management decisions under Alternative E would be the same as Alternative B except that Alternative E would also exclude non-WSA wilderness characteristics lands from consideration for ROWs for wind and solar energy development. This alternative offers greater benefits to wildlife than any other alternative since it would withdraw the most land from consideration for ROWs.

4.3.19.3.8. Impacts of Livestock Grazing Decisions on Wildlife and Fisheries

Impacts that vary between alternatives result from variation in the number of areas that would be unavailable for grazing for the life of the RMP. Impacts would be the same in nature as those common to all alternatives. Alternatives that would designate more areas as unavailable for grazing would have fewer adverse impacts on wildlife, while alternatives that designate fewer areas as unavailable for grazing would have more adverse impacts on wildlife.

4.3.19.3.8.1. Alternative A

Under Alternative A, the Comb Wash Allotment side canyons including Mule Canyon below U-95, Arch, Fish, Owl, and Road Canyons are currently unavailable (and would remain unavailable for grazing under all of the proposed alternatives) based on an Interior Board of Land Appeals (IBLA) court decision. A portion of Comb Wash's 73,614 acres are included in this closure (side canyon acreages are not available). These closures would decrease the magnitude of the potential adverse impacts associated with livestock grazing in the Monticello PA by removing acreage available for livestock grazing.

4.3.19.3.8.2. Alternatives B and E

Under Alternatives B and E, Slickhorn Canyon (146,144 acres), Rone Bailey Mesa (1,162 acres), Dodge Canyon Allotment (1,638 acres), Mule Canyon (1,984 acres), Arch Canyon (2,562 acres), Fish and Owl Canyon (7,252 acres), Road Canyon (4,801 acres), Rodgers Allotment (40 acres), portions of West Butler Wash Canyons, and Horsehead Canyon (4,904 acres) within the Montezuma Canyon allotment would be unavailable for grazing. Additional areas (Moki Canyon, Lake Canyon, Harts Canyon, and Indian Creek from Kelly Ranch vicinity to the USFS boundary) would be restricted to livestock trailing only. Also, under these alternatives the BLM would develop seasonal restrictions, closures, and/or forage utilization limits on grazing in riparian areas functioning at risk. The closures and restrictions associated with these alternatives would decrease the magnitude of the potentially adverse impacts associated with livestock grazing decisions more than under all other alternatives.

4.3.19.3.8.3. Alternative C

Alternative C is the same as Alternatives B and E, except that Mule Canyon would only be unavailable for grazing south of U-95. Consequently, Alternatives B and E would be slightly more beneficial to wildlife and wildlife habitats than Alternative C.

4.3.19.3.8.4. Alternative D

Alternative D is the same as Alternatives B and E except that Horsehead Canyon within Montezuma Canyon allotment, Dodge Canyon allotment, and Mule Canyon north of U-95 would be available for grazing and no areas would be restricted to livestock trailing only. The unavailability of these areas to livestock grazing that would be in effect under Alternative D would decrease the magnitude of the potentially adverse impacts associated with livestock grazing in the Monticello PA compared with Alternative A, but would still allow for more adverse impacts related to habitat disturbance than Alternatives B and E.

4.3.19.3.9. Impacts of Minerals Decisions on Wildlife and Fisheries

The impacts of minerals decisions on wildlife resources would be of the same nature under all alternatives but would vary in the acreage over which those decisions would impact wildlife and wildlife habitat (Tables 4.204–4.207).

Table 4.204. Estimated Surface Disturbance (in acres) for Oil and Gas Well Development, by Vegetation (Wildlife Habitat) Type

Habitat Type	Associated Wildlife	Alternatives				
		A	B	C	D	E
Conifer and Mountain Shrub	Mule deer, elk, mountain lion, black bear (primarily old growth), neotropical birds, upland game birds, reptiles.	4	4	4	4	3
Desert Scrub	Pronghorn, desert bighorn sheep, elk (winter), raptors, neotropical birds, upland game birds, reptiles.	165	150	168	170	122
Pinyon-Juniper	Mule deer, elk, pronghorn, mountain lion, neotropical birds, upland game birds, reptiles.	449	409	457	464	333
Sagebrush/ Perennial Grasslands	Mule deer, elk, mountain lion, neotropical birds, upland game birds, reptiles.	65	59	66	67	48
Invasive Species/ Noxious Weeds	N/A	1	1	1	1	1
Total Acres of Disturbance*		**699**	**636**	**710**	**721**	**518**

*Acreages do not add up to the Total Acres of Disturbance in any category because agriculture, disturbed, developed, riparian/wetlands and water categories were removed from the analysis since they represent a small percentage of the total lands that are not relevant to this analysis.

Table 4.205. Estimated Surface Disturbance (in Acres) on BLM Lands Associated with Geophysical Exploration by Vegetation (Wildlife Habitat) Type

Habitat Types	Associated Wildlife	Alternatives				
		A	B	C	D	E
Conifer and Mountain Shrub	Mule deer, elk, mountain lion, black bear (primarily old growth), neotropical birds, upland game birds, reptiles.	5	5	5	6	4
Desert Shrub	Pronghorn, desert bighorn sheep, elk (winter), raptors, neotropical birds, upland game birds, reptiles.	209	187	213	218	139
Pinyon-Juniper	Mule deer, elk, pronghorn, mountain lion, neotropical birds, upland game birds, reptiles.	570	511	581	594	380
Sagebrush/ Perennial Grasslands	Mule deer, elk, Rocky Mountain bighorn sheep, mountain lion, neotropical birds, upland game birds, reptiles.	82	74	84	86	55
Invasive Species/ Noxious Weeds	N/A	2	2	4	4	1
Total Acres of Disturbance*		**886**	**794**	**903**	**924**	**591**

*Acreages do not add up to the Total Acres of Disturbance in any category because agriculture, disturbed, developed, riparian/wetlands and water categories were removed from the analysis since they represent a small percentage of the total lands that are not relevant to this analysis.

Table 4.206. Acreage of Each Vegetation Cover Type (and Associated Wildlife) Open and Closed to Surface Disturbance by Alternative.

Vegetation Type	Associated Wildlife	Alternatives									
		A		B		C		D		E	
		Open*	Closed**	Open	Closed	Open	Closed	Open	Closed	Open	Closed
Pinyon-juniper	Mule deer, elk, pronghorn, mountain lion, neotropical birds, upland game birds, reptiles	767,879	379,201 (33%)	783,564	363,405 (32%)	840,861	306,107 (27%)	848,550	298,417 (26%)	475,518	671,449 (59%)
Desert scrub	Pronghorn, desert bighorn sheep, elk (winter), raptors, neotropical birds, upland game birds, reptiles	298,661	125,306 (30%)	289,102	131,744 (31%)	330,081	90,817 (22%)	355,136	64,712 (15%)	145,021	275,826 (66%)
Sagebrush/ Perennial grassland	Mule deer, elk, Rocky Mountain bighorn sheep, mountain lion, neotropical birds, upland game birds, reptiles	137,420	36,098 (21%)	98,131	67,724 (41%)	137,325	28,323 (17%)	137,613	28,244 (17%)	107,510	58,346 (35%)

Table 4.206. Acreage of Each Vegetation Cover Type (and Associated Wildlife) Open and Closed to Surface Disturbance by Alternative.

Vegetation Type	Associated Wildlife	Alternatives									
		A		B		C		D		E	
		Open*	Closed**	Open	Closed	Open	Closed	Open	Closed	Open	Closed
Conifer/ Mountain shrub	Mule deer, elk, mountain lion, black bear (primarily old growth), neotropical birds, upland game birds, reptiles	9,695	1,108 (10%)	9,595	1,207 (11%)	9,652	1,151 (11%)	9,752	1,606 (14%)	7,985	2,817 (26%)
Totals		**1,213,655**	**541,713 (31%)**	**1,180,392**	**564,080 (32%)**	**1,317,919**	**426,762 (24%)**	**1,351,051**	**392,979 (22%)**	**736,034**	**1,008,438 (58%)**

*"Open" includes Standard, Timing, Controlled Surface Use and CST lease stipulations.

**"Closed" includes NSO and Closed leasing stipulations. The percent of the total designated habitat closed is listed in parentheses.

Table 4.207. Acres of Big Game Habitat (UDWR Designated vs. BLM Managed) Open and Closed to Surface Disturbance by Alternative.

Big Game Species	Agency Designating / Managing Habitat	Alternatives									
		A		B		C		D		E	
		Open*	Closed**	Open	Closed	Open	Closed	Open	Closed	Open	Closed
Mule Deer	UDWR Designated	783,267	302,785 (28%)	784,574	300,860 (28%)	816,326	269,108 (25%)	820,374	265,060 (24%)	588,793	496,638 (46%)
	BLM Managed	170,630	11,685 (6%)	607,035	178,886 (23%)	264,312	2,101 (1%)	150,496	961 (1%)	431,504	354,417 (45%)
Elk	UDWR Designated	234,233	57,457 (20%)	244,139	47,393 (16%)	244,296	47,236 (16%)	246,647	44,885 (15%)	151,688	139,846 (21%)
	BLM Managed	N/A	N/A	169,140	22,028 (12%)	39,478	11,093 (22%)	4,491	0 (0%)	125,816	65,357 (34%)
Pronghorn	UDWR Designated	29,363	0 (0%)	29,368	37 (0.1%)	29,405	0 (0%)	29,404	0 (0%)	26,581	2,823 (10%)
	BLM Managed	13,961	0 (0%)	29,328	37 (0.1%)	29,365	0 (0%)	13,961	0 (0%)	26,541	2,823 (10%)
Desert Bighorn Sheep	UDWR Designated	135,977	31,213 (19%)	140,689	26,479 (16%)	146,198	20,971 (13%)	147,965	19,204 (11%)	42,661	124,507 (74%)
	BLM Managed	155,149	92,833 (37%)	257,358	196,122 (43%)	297,706	1,497 (1%)	228,946	70,063 (23%)	90,900	362,486 (80%)

*"Open" includes Standard, Timing, Controlled Surface Use and CST lease stipulations.

**"Closed" includes NSO and Closed leasing stipulations. The percent of the total designated habitat closed is listed in parentheses.

4.3.19.3.9.1. Alternative A

Leasable Minerals

Under Alternative A, 40 wells (approximately 699 acres of surface disturbance) are expected in the Monticello PA over the life of the RMP. Further, approximately 379,201 acres of pinyon-juniper habitat would be managed as either NSO or Closed, while approximately 125,306 acres of desert scrub would be managed under the same designations. A total of 547,713 acres (of all habitat types) would be managed as NSO or Closed.

Mule Deer. Under Alternative A, UDWR designated mule deer habitat that would fall under Closed leasing types (302,785 acres) would comprise 28% of the total designated deer habitat established by UDWR. Six percent (11,685 acres) of BLM managed mule deer habitat would be considered Closed to leasing.

Elk. Under Alternative A, the BLM would not specifically manage habitat for elk. Approximately 57,457 acres (20%) of UDWR designated elk habitat would fall under Closed leasing types.

Pronghorn. Under Alternative A, all of the UDWR designated and BLM managed pronghorn habitat would fall under Open leasing types.

Desert Bighorn Sheep. Under Alternative A approximately 19% (31,213 acres) of UDWR designated habitat and 37% (92,833) of BLM managed habitat would fall under Closed leasing types.

Geophysical Activity

Under Alternative A, approximately 886 acres (59 acres per year for the life of the RMP) of wildlife habitat would be temporarily impacted by geophysical exploration. Impacts to wildlife habitat associated with exploration would include short-term impacts such as noise and disturbance from people working in the area to long-term impacts such as the potential spread of invasive and weedy plant species within the areas directly disturbed by geophysical drilling.

Salable Minerals

The exploration and development of salable minerals would have similar impacts to wildlife as other development described above. Under Alternative A, 584,270 acres of land in the Monticello PA would be available for disposal of mineral materials subject to standard terms and conditions. That is approximately 33% of the 1,784,724 acres in the Monticello PA. There are 821,070 acres (approximately 46% of the Monticello PA) subject to special conditions under Alternative A and 373,850 acres (approximately 21% of the Monticello PA) closed to disposal of mineral materials.

Locatable Minerals

Under Alternative A, 1,652,743 acres (approximately 93%) of land in the Monticello PA would be open to mineral entry. There are currently 132,380 acres (approximately 7% of the Monticello PA) recommended to Congress for withdrawal from mineral entry. Because withdrawals require congressional approval and are extremely difficult to obtain, these areas only have the potential to be exempt from impacts related to open pit mining activities. Impacts resulting from locatable mineral exploration and development would be similar to those discussed above.

4.3.19.3.9.2. Alternative B

Leasable Minerals

Under Alternative B 66 wells (approximately 636 acres of surface disturbance) are expected in the Monticello PA over the life of the RMP. Alternative B would result in 63 (9%) fewer acres of oil- and gas-related surface disturbance than Alternative A. Overall, Alternative B would include fewer oil- and gas-related adverse impacts to wildlife than would Alternative A, since less surface disturbance would mean more intact habitat, fewer roads, and a lower level of human presence.

Under Alternative B across the Monticello PA approximately 363,405 acres of pinyon-juniper habitat would be managed as either NSO or Closed, while approximately 131,744 acres of desert scrub would be managed under the same designations. The total number of acres (of all habitat types) to be managed under NSO or Closed designations would be approximately 564,080 under Alternative B. Approximately 5% more land would be managed under Closed designations under Alternative B than Alternative A.

Mule Deer. There is less than 1% difference between Alternatives B and A in terms of the acreage of UDWR designated deer habitat falling under Closed leasing types. BLM managed deer habitat falling under Closed leasing types would increase by 167,201 acres (93%) under Alternative B. Alternative B would be more beneficial for mule deer than Alternative A.

Elk. Under Alternative B 47,393 acres (16%) of UDWR designated elk habitat would fall under closed leasing types. This is 4% less than under Alternative A. Approximately 22,028 acres (12%) of BLM managed elk habitat would fall under Closed leasing types. This is an improvement over Alternative A since no elk habitat is identified by BLM under that alternative.

Pronghorn. Alternative B would be more beneficial to pronghorn than Alternative A since the BLM would manage more than two times as much pronghorn habitat under this alternative than under Alternative A. In terms of UDWR designated pronghorn habitat there is a 5-acre difference between Alternatives B and A. Approximately 37 acres of BLM managed and UDWR designated pronghorn habitat would fall under Closed leasing types under Alternative B, compared to zero acres under Alternative A.

Desert Bighorn Sheep. Under Alternative B, more than twice as much BLM managed desert bighorn sheep habitat (196,122 acres compared to 92,833 acres) would fall under Closed leasing types as under Alternative A. Fewer acres of UDWR designated desert bighorn sheep habitat would fall under these leasing stipulations under Alternative B (26,479) than Alternative A (31,213). Overall, there are more beneficial impacts to desert bighorn sheep under Alternative B than Alternative A since considerably more BLM managed habitat falls under Closed leasing types.

Geophysical Activity

Under Alternative B there would be approximately 794 acres of surface disturbance associated with geophysical exploration. This is approximately 12% fewer acres of disturbance than would be expected under Alternative A, which could result in a slightly smaller impact overall due to the decreased acreage open to exploration.

Salable Minerals

Under Alternative B, 219,102 (38%) fewer acres would be open to mineral disposal subject to standard terms and conditions than under Alternative A. Overall, more land would be protected under special conditions (876,736 acres vs. 821,070 acres) or closed altogether (542,402 acres vs. 373,850 acres) to mineral disposal under Alternative B than under Alternative A, which would beneficially impact wildlife species by protecting more of their habitats from potential surface disturbing activities and their associated impacts.

Locatable Minerals

Under Alternative B, 1,521,656 acres of land in the Monticello PA would be open to mineral entry. That is 8% less than under Alternative A. Also, under Alternative B 263,467 acres would be recommended to Congress for withdrawal from mineral entry (50% more than under Alternative A).

4.3.19.3.9.3. Alternative C

Leasable Minerals

Under Alternative C, 74 oil and gas wells are expected across the Monticello PA over the life of the RMP. Oil and gas development under Alternative C would result in the direct removal of wildlife habitat from approximately 710 acres. Compared to Alternative A, Alternative C plans for 11 (2%) more acres of oil- and gas-related surface disturbance. This translates into more adverse impacts to wildlife than under Alternative A.

Under Alternative C across the Monticello PA, approximately 306,107 acres of pinyon-juniper habitat would be managed as either NSO or Closed, while approximately 90,817 acres of desert scrub would be managed under the same designations. The total number of acres (of all habitat types) to be managed under NSO or Closed designations approximate 426,762 under Alternative C. This is more than 115,000 fewer acres than under Alternative A.

Mule Deer. Less UDWR designated and BLM managed mule deer habitat falls under Closed leasing types under Alternative C than under Alternative A. Because fewer acres of mule deer habitat fall under Closed leasing types under this alternative it would be more adverse to mule deer than Alternative A, which protects more habitat from surface disturbance through Closed leasing type designations.

Elk. Under Alternative C, 47,236 acres (16%) of UDWR designated elk habitat would fall under closed leasing types. This is 4% less than under Alternative A. Approximately 11,093 acres (22%) of BLM managed elk habitat would fall under Closed leasing types. This is an improvement over Alternative A since no elk habitat is identified by BLM under that alternative. However, under Alternative C only 50,571 acres of elk habitat would be managed by BLM compared to 191,168 acres under Alternative B. Also, 22,028 acres (12%) of BLM managed elk habitat would fall under Closed leasing types under Alternative B. Overall, the prescriptions include in Alternative C would be more beneficial to elk than Alternative A but less beneficial than Alternative B.

Pronghorn. Under Alternative C neither BLM managed nor UDWR designated pronghorn habitat fall under Closed leasing types. Total acres of BLM managed pronghorn habitat are the

same as Alternative B. There is a negligible difference between Alternatives C and A in terms of impacts to pronghorn.

Desert Bighorn Sheep. Under Alternative C, 1,497 acres (1%) of BLM managed and 20,971 acres (13%) of UDWR designated desert bighorn sheep habitat fall under Closed leasing types. For desert bighorn sheep, Alternative C would result in more adverse impacts than Alternative A since 91,336 (98%) fewer acres of BLM managed and 10,242 (33%) fewer acres of UDWR designated desert bighorn sheep habitat would fall under Closed leasing types.

Geophysical Activity

Under Alternative C, there would be approximately 903 acres of surface disturbance associated with geophysical exploration. This is approximately 2% more acres of disturbance than under Alternative A. Therefore, compared to Alternative A, Alternative C would likely result in a larger adverse impact to wildlife overall due to the increased acreage open to exploration.

Salable Minerals

Under Alternative C, 35,131 (6%) more acres would be available for disposal of mineral materials subject to standard terms and conditions than Alternative A. Acreage available for mineral disposal subject to special conditions would be 12% (91,503 acres) less than under Alternative A. Finally, acreage closed to mineral disposal would be 14% (61,488 acres) more than under Alternative A. This would beneficially impact wildlife species by protecting more of their habitats from potential surface-disturbing activities and their associated impacts. Though Alternative C would close more acres to mineral disposal than Alternative A, overall, Alternative C would be less beneficial to wildlife species than Alternative A because it would protect fewer habitats with special stipulations for disposal and open more acres to disposal under standard stipulations.

Locatable Minerals

Under Alternative C, 1,637,688 acres of land in the Monticello PA would be open to mineral entry. That is 15,055 fewer acres (14%) than under Alternative A. Under this alternative approximately 147,435 acres would be recommended to Congress for withdrawal from mineral entry. That is 15,055 acres (10%) more than are recommended for withdrawal from mineral entry under Alternative A. Alternative C would be more beneficial to wildlife than Alternative A, because Alternative C would open fewer acres to mineral entry, thereby avoiding the adverse impacts associated with surface disturbance and related activities, and recommends more acres for withdrawal.

4.3.19.3.9.4. Alternative D

Leasable Minerals

Under Alternative D, 75 oil and gas wells are expected in the Monticello PA over the life of the RMP. Oil and gas development under Alternative D would result in the direct removal of wildlife habitat from approximately 721 acres. This is 22 (3%) more acres of oil- and gas-related surface disturbance than under Alternative A. Overall, Alternative D would include the most oil- and gas-related adverse impacts to wildlife when compared to Alternatives A, B, C, and E since more surface disturbance translates to less intact habitat, more roads, and a higher level of human presence.

Under Alternative D across the Monticello PA, approximately 298,417 acres of pinyon-juniper habitat would be managed as either NSO or Closed, while approximately 64,712 acres of desert scrub would be managed under the same designations. The total number of acres (of all habitat types) to be managed under NSO or Closed designations approximate 392,979 under Alternative D. Alternative D would set aside approximately 149,000 fewer acres of habitat for management under NSO and Closed designations than Alternative A.

Mule Deer, Elk, and Pronghorn. Less UDWR designated and BLM managed mule deer, elk, and pronghorn habitat falls under Closed leasing types under Alternative D than under any other alternative. Alternative D would be the most adverse to these species of all alternatives because less habitat would be protected under Closed leasing types.

*Desert Bighorn Sheep***.** Less UDWR designated desert bighorn sheep habitat falls under Closed leasing types under Alternative D than under any other alternative. BLM managed desert bighorn sheep falling under Closed leasing types is greater under Alternative D than Alternative C but less than all other alternatives. Desert bighorn sheep, like mule deer, elk, and pronghorn, would be subject to more adverse impacts from oil and gas leasing under Alternative D than under all other alternatives.

Geophysical Activity

Under Alternative D, there would be approximately 924 acres of surface disturbance associated with geophysical exploration. This is approximately 4% more acres of disturbance than would be expected under Alternative A, 16% more than Alternative B, 2% more than Alternative C, and 56% more than Alternative E. Compared to all other alternatives, Alternative D would likely result in the largest impact overall due to the increased acreage open to exploration.

Salable Minerals

Under Alternative D, 378,009 (39%) more acres would be open to mineral disposal subject to standard stipulations than under Alternative A. Approximately 400,072 (49%) fewer acres would be open to mineral disposal subject to special conditions and 27,177 (7%) more acres would be closed to mineral disposal than under Alternative A. Though Alternative D would close slightly more acres to mineral disposal than Alternative A, overall, Alternative D would be less beneficial to wildlife species than Alternative A as it would protect fewer habitats with special stipulations for disposal and open more acres to disposal under standard stipulations.

Locatable Minerals

Under Alternative D, 1,737,999 acres of land in the Monticello PA would be open to mineral entry. That is 85,256 acres (5%) more than would be open under Alternative A. Under this alternative, approximately 47,124 acres would be recommended to Congress for withdrawal from mineral entry. This is 85,256 acres (5%) less than would be recommended for withdrawal from mineral entry under Alternative A. Alternative D would also recommend fewer acres for withdrawal from mineral entry than Alternatives B, C, or E. Therefore, Alternative D would be the least beneficial for wildlife and their habitats of all alternatives as it opens more acres to mineral entry and recommends fewer for withdrawal.

4.3.19.3.9.5. Alternative E

Leasable Minerals

Under Alternative E, 54 wells (approximately 518 acres of surface disturbance) are expected to be drilled in the Monticello PA over the life of the RMP. This alternative would result in about 118 (23%) fewer acres of oil- and gas-related surface disturbance than Alternative B, and between 181 and 203 (35%–39%) fewer acres of surface disturbance than any other alternative, resulting in fewer adverse impacts to wildlife since less surface disturbance translates to more intact habitat, fewer roads, and a lower level of human presence.

Under Alternative E, throughout the Monticello PA approximately 617,449 acres of pinyon-juniper habitat would be managed as either NSO or Closed, while approximately 275,826 acres of desert scrub would be managed under the same designations. The total number of acres (of all habitat types) to be managed under NSO or Closed designations (1,008,439 acres) is greater under Alternative E than under all other alternatives.

*Mule Deer, Elk, and Desert Bighorn Sheep***.** Under Alternative E more UDWR designated and BLM managed mule deer, elk, and desert bighorn sheep habitat falls under Closed leasing types than under any other alternative, offering these species more protection from adverse impact than other alternatives.

*Pronghorn***.** The acreage of UDWR designated and BLM managed pronghorn habitat that would be closed to leasing or NSO (2,823 acres) is greater under Alternative E than under any other alternative. This alternative would be more beneficial to pronghorn than other alternatives due to the protection from disturbance offered by closed and NSO designations.

Geophysical Activity

There would be approximately 591 acres of surface disturbance associated with geophysical exploration under Alternative E. This is approximately 34% fewer acres of disturbance than would be expected under Alternative B, which is the next most beneficial alternative in terms of expected wildlife impacts due to geophysical exploration. All other alternatives would result in more surface disturbance (between 50% and 56% more than Alternative E) associated with geophysical exploration than Alternative E.

Salable Minerals and Locatable Minerals

Alternative E impacts would be the same as Alternative B in terms of prescriptions and impacts associated with salable and locatable minerals.

4.3.19.3.10. Impacts of Recreation Decisions on Wildlife and Fisheries

Impacts varying between alternatives result primarily from variations in the level of mineral exploration and development allowed and specific recreation prescriptions for SRMAs. Assuming that recreationists in SRMAs use established routes and, where dispersed camping is allowed, either camp in previously disturbed areas only or stay within 150–300 feet of these routes, the difference between alternatives in terms of the impacts of these recreation decisions on wildlife and fisheries would be negligible. Impacts would generally be of the nature described above and would vary slightly depending on the specific management prescriptions in each alternative. Key differences between alternatives resulting in notable differences in impacts to wildlife and fisheries are described below by proposed SRMA.

4.3.19.3.10.1. San Juan River SRMA

Alternative A

Under Alternative A, the San Juan River SRMA would encompass 10,203 acres. Motorized boating would be allowed downstream while upstream travel would only be allowed for emergency purposes. Approximately 40,000 user/days (private and commercial trips combined) per year would be permitted with groups no larger than 25 people for private trips and 25 people plus 8 crew for commercial trips. Commercial use would be allowed up to 50% of total use while administrative and research use would not be included in launch limits. Camping would be allowed in 9 designated campsites (available for reservation) in the Slickhorn Canyon to Clay Hills area. Camping in this area would be limited to 1 or 2 nights depending on the season. Vehicle camping in the SRMA would not be restricted. Grazing prescriptions for this area would remain as in the current RMP (see Table 2.1 Livestock Grazing). No management prescriptions would be in place for minerals or watersheds.

Alternative B

Under Alternative B the total acreage of the San Juan River SRMA would remain 10,203 acres (same as Alternative A). No motorized boating would be allowed except in emergency situations. Approximately 30,000 user/days per year would be allowed with a trip size limit of 20 people (including crew for commercial trips). Commercial use would be restricted to up to 30% of total use and administrative and research use would be limited to that which can be accommodated within the launch limits. Camping would be allowed per Memorandum of Understanding between the NPS/GCNRA and the Navajo Nation. Vehicle camping in the SRMA would be limited to areas upstream of Comb Wash except along Lime Creek Road, the Mexican Hat Rock area, and the Mexican Hat Boat Ramp. The area would be open to oil and gas leasing subject to NSO and closed for mineral entry and disposal. Seasonal grazing restrictions would be in place not to exceed PFC. Watershed prescriptions would include surface restrictions for watershed control structures to protect bighorn sheep lambing and rutting areas and vehicle access would be limited to designated routes. OHV use would be limited to designated roads and trails throughout the SRMA. These management prescriptions would place further restrictions on surface disturbance and visitor generated noise and visual disturbance than under Alternative A; therefore, Alternative B would be more beneficial to wildlife than Alternative A.

Alternative C

Under Alternative C the total acreage of the San Juan River SRMA would be about 9,859 acres, or 344 fewer acres than Alternatives A or B. Management prescriptions related to motorized boating and administrative and research use would be the same as Alternative A. Management prescriptions related to designated campsites, vehicle camping, minerals, grazing, and OHV use would be the same as Alternative B. Launch limits would be the same as Alternative A except that the commercial trip size limit of 25 people would include crew members. Commercial use would be restricted to up to 40% of total use. In general, Alternative C would be more beneficial to wildlife than Alternative A, as Alternative C would more closely limit visitor numbers and minerals-related activities.

Alternative D

Under Alternative D the total acreage of the San Juan River SRMA would be about 6,365 acres, or 3,838 fewer acres than Alternatives A or B. Management prescriptions related to motorized boating and administrative and research use would be the same as Alternative A. Management prescriptions related to designated campsites, minerals, and grazing would be the same as Alternative B. All other management prescriptions would be less restrictive of disturbance-generating activities than any other alternative. Alternative D would be less beneficial to wildlife than any other alternative due to the decreased SRMA acreage proposed under this alternative, and fewer restrictions on visitors groups and group sizes.

Alternative E

Alternative E is the same as Alternative B except that non-WSA lands with wilderness characteristics would be closed to oil and gas leasing and OHV use. Alternative E would be more beneficial to wildlife than all other alternatives since it places the greatest restrictions on use.

4.3.19.3.10.2. Cedar Mesa Cultural SRMA

The proposed Cedar Mesa Cultural SRMA would include the Grand Gulch Plateau Mesa Top Day Use, Grand Gulch Plateau Mesa Top Camping, Grand Gulch Plateau In-canyon Private/Commercial Day Use, and Grand Gulch Plateau In-Canyon Permitted Overnight Camping areas. While management prescriptions for these areas vary between alternatives these variations represent negligible impacts on wildlife and only negligible differences between alternatives. All management prescriptions are intended to limit or curtail disturbance-causing activities. Management prescriptions for the area as a whole are discussed below by alternative.

Alternative A

Under Alternative A the proposed Cedar Mesa Cultural SRMA would remain the Grand Gulch SRMA. Management prescriptions (see Table 2.1) for camping, campfires, areas for day use only, pets, stock use, group size, and disposal of human waste would be implemented to allow for private and commercial use of the area while protecting resource values. Impacts to wildlife would be the same as those discussed under Impacts Common to All Alternatives.

Alternative B

Alternative B is the same as Alternative A except that further restrictions would be placed on pets and stock as well as camping activities. Also, watershed, range, and wildlife improvements and vegetation treatments would be allowed. Alternative B would be more beneficial to wildlife than Alternative A due to the increased restrictions on disturbance-causing activities and the potential for watershed, range, and wildlife improvements and vegetation treatments.

Alternative *C*

In terms of pets and stock Alternative C is the same as Alternative A except that restrictions on pets and stock would be greater under Alternative C. In terms of other activities Alternative C is the same as Alternative B except that campfires would be allowed on mesa tops only (with fire pans) and commercial and private use of woodland products would be allowed. Impacts associated with Alternative C would be less than Alternative A due to increased restrictions but greater than Alternative B.

Alternative D

Alternative D is the same as Alternative C except that pets or stock may be limited or prohibited if resources or the visitor experience are adversely affected. Stock limitations would be the same as Alternative A. In general, Alternative D places the fewest restrictions on disturbance-causing activities and therefore would be the least beneficial to wildlife of all alternatives.

Alternative E

Alternative E is the same as Alternative B except that non-WSA lands with wilderness characteristics would be managed to protect wilderness values. Alternative E would be the most beneficial to wildlife of all alternatives since it places the greatest restrictions on disturbance-causing activities.

4.3.19.3.10.3. Dark Canyon SRMA

Alternatives A–E

Under all alternatives the Dark Canyon SRMA would be managed to limit recreational impacts and protect resource values, though under Alternative A Dark Canyon would remain part of the Canyon Basins SRMA. Variations between alternatives relate to:

- group size limits (range from no limit to 15 people per group);
- commercial trips allowed per week (range from no limit to 7 commercial trips per week);
- camping restrictions (range from open dispersed camping in any location to camping only in designated campsites);
- campfire restrictions (range from no restrictions to allowed on mesa tops only);
- limits on collection of woodland products (range from no restrictions to prohibiting collection of woodland products); and
- pet restrictions (range from no pets allowed to pets allowed without restrictions).

Variations in pet restrictions are the main difference between alternatives in terms of impacts on wildlife. Pets create additional noise disturbance that can result in avoidance behavior amongst wildlife. Also, pets off leash wander from designated routes creating additional surface disturbance and potentially threatening individual animals. Alternatives B and E would be most beneficial to wildlife as they would prohibit pets. Alternatives C and D would allow pets on leash and under control, which would limit pet-created disturbance but not prevent it. Finally, Alternative A would allow pets without further restrictions. This alternative would result in the greatest pet-caused wildlife disturbances.

Remaining variations between alternatives are negligible and would result in negligible impacts to wildlife since all prescriptions would limit or curtail disturbance-causing activities.

4.3.19.3.10.4. Indian Creek SRMA

Alternatives A–E

Under all alternatives the Indian Creek SRMA would be managed to limit recreational impacts and protect resource values. Alternative A is unique in that the Indian Creek SRMA would remain part of the Canyon Basins SRMA. Other variations between alternatives relate to restrictions on camping (i.e., allowing dispersed camping versus limiting camping to designated

camp sites). In terms of impacts on wildlife there is little difference between alternatives since recreationists tend to use designated (or previously disturbed) campsites rather than disturbing new sites. Impacts to wildlife associated with management prescriptions in the Indian Creek SRMA would be minimal since these management prescriptions are designed to limit or curtail disturbance-causing activities.

4.3.19.3.10.5. White Canyon SRMA

Alternative A

Under Alternative A, White Canyon SRMA would be managed using minimal management prescriptions. Permits would be required for commercial use but activities related to private use would be unrestricted.

Alternatives B–E

Under Alternatives B–E, White Canyon SRMA would be managed to limit recreational impacts. Management prescriptions vary by alternative though these variations would not result in appreciable differences between alternatives nor appreciable impacts on wildlife since all alternatives would implement prescriptions designed to limit or curtail disturbance-causing activities.

4.3.19.3.11. Impacts of Riparian Decisions on Wildlife and Fisheries

4.3.19.3.11.1. Alternatives A and D

Under Alternatives A and D BLM would manage riparian areas to reduce resource loss from floods and erosion; maintain water quality; and preserve, protect, and restore natural functions. All lands would be managed in accordance with laws, executive orders, and regulations on floodplains and wetlands. These decisions would mitigate some of the adverse impacts caused by mineral leasing (discussed in Section 4.3.19.2.5), grazing (discussed in Section 4.3.19.2.4), and recreation (discussed in Section 4.3.19.2.6) on wildlife species that utilize riparian habitat.

Alternatives A and D would provide no additional restrictions on actions in riparian areas outside of management common to all alternatives. These alternatives would be less beneficial to wildlife than all other alternatives.

4.3.19.3.11.2. Alternatives B, C, and E

Under Alternatives B, C, and E OHV routes in selected riparian areas would be closed where site-specific analysis determines that OHV use is contributing to these areas Functioning At Risk. In addition, some riparian areas would be closed to livestock grazing, while others would be subject to seasonal restrictions and forage utilization limits if areas are found to be Functioning At Risk. Riparian areas identified as Functioning At Risk would be closed to motorized camping until PFC is restored. These restrictions would decrease the amount of wildlife habitat subject to the adverse impacts of surface disturbance in sensitive riparian areas and therefore these alternatives would be more beneficial to wildlife than Alternatives A and D.

4.3.19.3.12. Impacts of Soils/Watershed Decisions on Wildlife and Fisheries

4.3.19.3.12.1. Alternative A

Under Alternative A, the impacts of soils and watershed management decisions on wildlife resources would be the same as impacts common to all alternatives.

4.3.19.3.12.2. Alternatives B and E

Under Alternatives B and E if surface-disturbing activities could not be avoided on slopes between 21 and 40%, a plan would be required which would include an erosion control strategy. No surface disturbance would be allowed on slopes greater than 40%, excluding 87,601 total acres of land in the Monticello PA from surface disturbance and preventing the adverse impacts associated therewith. Though surface-disturbing activities may still occur on slopes between 21 and 40% (218,790 acres) erosion control strategies and approved survey and design would be expected to mitigate adverse impacts. Pinyon-juniper habitat makes up 88% of slopes greater than 40% and 83% of slopes between 21 and 40%. The species associated with this habitat would benefit from the large number of acres protected from surface-disturbing activities (Table 4.208). The decisions associated with Alternatives B and E would have less adverse impacts on wildlife than Alternative A.

Table 4.208. Acreage and Percentage of Slopes by Cover Type and Associated Wildlife

Vegetation Type	Wildlife Associations	Slope > 40%	% of Total acres	Slope 21-40%	% of Total acres
Pinyon-juniper	Mule deer, elk, mountain lion, neotropical birds, upland game birds.	77,331	88.3	180,954	82.7
Desert Scrub (Saltbush and Blackbrush)	Pronghorn, desert bighorn, elk (winter), raptors, neotropical birds, upland game birds.	6,390	7.3	27,473	12.6
Sagebrush and Grassland	Mule deer, elk, pronghorn, mountain lion, neotropical birds, upland game birds.	1,684	1.9	5,534	2.5
Riparian	Mule deer, elk, mountain lion, neotropical birds, upland game birds, amphibian and fish species.	683	0.8	1,461	0.7
Conifer/mountain shrub	Mule deer, elk, mountain lion, neotropical birds, upland game birds.	1,323	1.5	2,662	1.2
Other cover types		188	0.2	708	0.3
	Total Acres	87,599	100	218,792	100

4.3.19.3.12.3. Alternative C

Alternative C is the same as Alternatives B and E except that for slopes greater than 40% surface disturbance would still be allowed if other placement alternatives would cause undue or unnecessary degradation. Alternative C would have greater adverse impacts on wildlife resources than Alternative B because it would not rule out surface disturbance on 87,601 acres of habitat.

4.3.19.3.12.4. Alternative D

Alternative D would only require a plan for slopes greater than 40%, and would not rule out surface disturbance on slopes of any grade. Among all alternatives, Alternative D would be the most adverse to wildlife because of the increased potential for erosion and habitat destruction.

4.3.19.3.13. Impacts of Special Designation Decisions on Wildlife and Fisheries

Within the Monticello PA, there are 12 proposed ACECs and 12 reviewed WSR segments. Not every proposed ACEC or WSR segment would be designated under each alternative (Table 4.209 and Table 4.210). Other than stipulating that WSAs would be managed according to IMP and as VRM Class I there are no blanket management prescriptions within proposed ACECs, so the impacts to wildlife and fisheries resources from ACEC designations would vary depending on the management stipulations for each area under each alternative.

Table 4.209. Proposed ACECs Acreage by Alternative

ACEC	Alternatives				
	A	B	C	D	E
Alkali Ridge	40,302	39,196	39,196	0	39,196
Bridger Jack Mesa	6,306	6,225	0	0	6,225
Butler Wash North	16,985	17,365	0	0	17,365
Cedar Mesa	320,078*	306,742	0	0	306,742
Dark Canyon	61,735	61,660	0	0	61,660
Hovenweep	1,818	2,439	1,818	0	2,439
Indian Creek	13,100	8,510	3,908	0	8,510
Lockhart Basin	8,642**	47,783	0	0	47,783
Lavender Mesa	649	649	649	0	649
Shay Canyon	1,770	119	119	0	119
San Juan River	15,100***	7,590	7,590	0	7,590
Valley of the Gods	31,387****	22,863	0	0	22,863
Totals	**517,872**	**521,141**	**53,280**	**0**	**521,141**

*Acreage includes Cedar Mesa ACEC (296,425) and Pine and Step Canyons (23,653).

**Lockhart Basin is not currently an ACEC. A portion of the potential Lockhart Basin ACEC area includes the existing Indian Creek ACEC accompanied by current management prescriptions for this area.

***The proposed San Juan River ACEC would continue to be managed under SRMA status under Alternative A.

****Under Alternative A, the Valley of the Gods is a Special Emphasis Area for Scenic Value within the Cedar Mesa ACEC.

Table 4.210. Acreage of WSR Segment Recommended for Designation by Alternative

WSR Segment	Alternatives				
	A	B	C	D	E
Colorado River Segment 1 (Recreational)	No evaluation	352	0	0	352
Colorado River Segment 2 (Scenic)	Suitable, acreage not specified	880	880	0	880
Colorado River Segment 3 (Scenic)	Suitable, acreage not specified	1,040	1,040	0	1,040
Indian Creek (Recreational)	No evaluation	1,536	0	0	1,536
Fable Valley (Scenic)	No evaluation	2,176	0	0	2,176
Dark Canyon (Wild)	No evaluation	2,048	2,048	0	2,048
San Juan River Segment 1 (Recreational)	No evaluation	1,360	0	0	1,360
San Juan River Segment 2 (Recreational)	Suitable, acreage not specified	1,600	0	0	1,600
San Juan River Segment 3 (Wild)	Suitable, acreage not specified	2,128	0	0	2,128
San Juan River Segment 4 (Recreational)	Suitable, acreage not specified	672	0	0	672
San Juan River Segment 5 (Wild)	Suitable, acreage not specified	2,768	0	0	2,768
Arch Canyon (Recreational)	No evaluation	2,208	0	0	2,208
Totals	**N/A**	**18,768**	**3,968**	**0**	**18,768**

4.3.19.3.13.1. Alternative A

Ten of the 12 proposed ACECs would continue to be managed as ACECs under Alternative A (approximately 502,772 acres in total). This includes Valley of the Gods, which would be a Special Emphasis Area for scenic value within the Cedar Mesa ACEC as well as Pine and Step Canyons, which would be managed with the same prescriptions as Cedar Mesa ACEC. The proposed Lockhart Basin ACEC is not currently an existing ACEC but a portion of it includes the Indian Creek ACEC (8,642 acres). This portion would continue to be managed as an ACEC and is included in the total acreage above. The proposed San Juan River ACEC would continue to be managed under SRMA status (15,100 acres). Approximately 25% of the land under ACEC designation would be managed as open to mineral leasing, while approximately 75% would be managed as closed.

Under Alternative A, 6 of the 12 river segments reviewed for WSR status would be designated as suitable for WSR status. The remaining six segments were not evaluated for WSR eligibility in the 1991 San Juan RMP.

4.3.19.3.13.2. Alternatives B and E

Under Alternatives B and E, all 12 of the proposed ACECs (approximately 521,141 acres in total) would be designated and managed as ACECs. Alternatives B and E would designate more

land as ACECs than all other alternatives, which would indirectly benefit wildlife by providing protections from surface disturbance. Approximately 28% of the land under ACEC designation would be managed as open to mineral leasing, while approximately 72% would be managed as closed. Under Alternatives B and E approximately 3% fewer acres would be closed to mineral leasing than under Alternative A. This is a negligible difference between alternatives given the larger acreage managed as ACECs under Alternatives B and E.

Under Alternatives B and E, all 12 of the river segments reviewed for WSR status would be recommended as suitable for WSR status (18,768 acres in total). Management prescriptions vary from river segment to river segment (see Table 2.1 for specific prescriptions by segment) but this variation does not represent a notable difference between alternatives in terms of the impacts of WSR designation since Alternatives B and E recommend more river segments for WSR status than all other alternatives.

4.3.19.3.13.3. Alternative C

Under Alternative C, six of the proposed ACECs (approximately 53,280 acres in total) would be recognized and managed as ACECs. Alternative C would designate less land as ACECs than Alternative A, limiting protections from surface disturbance compared to Alternative A. Under Alternative C approximately 37% of the land under ACEC designation would be open to minerals leasing, while approximately 63% would be managed as closed. Approximately 12% more land would be open to mineral leasing under Alternative C than Alternative A.

Three of the 12 river segments reviewed for WSR status would be designated as suitable for WSR status under Alternative C (3,968 acres in total). The remaining segments would be recommended as not suitable for WSR status. Alternative C would include half as many WSR recommended river segments as Alternative A.

4.3.19.3.13.4. Alternative D

Under Alternative D, none of the 12 proposed ACECs would be designated and approximately 43% of the land within the areas proposed for ACEC designation would be managed as open to mineral leasing, while approximately 57% would be managed as closed. Fewer acres would be closed to surface-disturbing activities under Alternative D than under all other alternatives.

Under Alternative D, none of the river segments reviewed for WSR status would be recommended as suitable for WSR status. This is fewer than all other alternatives.

4.3.19.3.14. Impacts of Special Status Species Decisions on Wildlife and Fisheries

Alternatives vary in terms of the acreage of crucial year-round habitat that would be established for Gunnison sage-grouse as well as specific management prescriptions for Gunnison sage-grouse, Mexican spotted owl, and flannelmouth sucker. Under Alternative A, the impacts of special status species management decisions on wildlife would be the same as impacts common to all alternatives. Alternatives B and E would provide more protection for special status species than all other alternatives, and indirectly other wildlife and fish populations. Alternative D would provide the least protection for these species.

4.3.19.3.15. Impacts of Travel Management Decisions on Wildlife and Fisheries

The impacts of travel management decisions on wildlife would primarily depend on the number of acres open and closed to OHV use and where OHV use is limited to designated roads and/or trails under each alternative. Table 4.211 details acres open, closed, and limited to designated roads and/or trails for OHV use by vegetation type and in total for each alternative. Areas that are classified as developed, disturbed, characterized by invasive/noxious weeds, or characterized as water are not included since their acreages are small.

Table 4.211. Wildlife Habitat (acres) Open, Limited, and Closed to OHV Use by Vegetation Type and Alternative*

Vegetation Type	Status	Alternatives				
		A	B	C	D	E
Conifer/Mountain Shrub	Open	6,709	0	0	0	0
	Limited	3,236	9,728	9,728	10,802	8,029
	Closed	856	1,074	1,074	0	2,774
Desert Shrub	Open	150,188	0	1,847	1,847	0
	Limited	218,564	350,720	351,592	418,829	168,996
	Closed	53,096	69,957	67,238	0	250,403
Pinyon-Juniper	Open	356,773	0	321	321	0
	Limited	572,435	828,766	830,534	1,145,957	498,214
	Closed	218,188	317,500	315,524	0	648,062
Riparian/Wetland	Open	10,870	0	135	135	0
	Limited	6,302	16,458	16,623	20,300	11,656
	Closed	3,525	3,977	3,676	0	8,779
Sagebrush/ Perennial Grass	Open	65,782	0	6	6	0
	Limited	88,073	134,739	165,517	165,571	108525
	Closed	12,256	30,838	0	0	57,050
Totals	**Open**	**590,322**	**0**	**2,309**	**2,309**	**0**
	Limited	**888,610**	**1,340,411**	**1,373,994**	**1,761,459**	**795,420**
	Closed	**287,921**	**423,346**	**387,512**	**0**	**967,068**

*Note that acreages in Table 4.211 do not add up to acreages referenced in the text. Acreages included in the table are only for key wildlife habitats. Acreages in the text include areas open, limited, and closed to OHV use for agricultural, disturbed, invasive species and noxious weeds, water, developed, and barren land use/land cover types.

OHV use can cause damage to vegetation used as wildlife forage and cover, as well as cause noise disturbance. OHV use therefore generally has long- and short-term adverse impacts on wildlife species, especially birds, in the Monticello PA (Reijnen and Foppen 1994; Gelbard and Belnap 2003). OHV use also contributes to habitat fragmentation and habitat degradation, including the spread of noxious weeds. These would have long-term adverse impacts to wildlife. The impacts of habitat fragmentation due to minerals and travel decisions under each alternative are discussed in Section 4.3.19.2.15 Impacts of Habitat Fragmentation on Wildlife. An

alternative that prescribes more acreage open to OHV use would result in more short- and long-term adverse impacts to wildlife than an alternative that prescribes less acreage open to OHV use. Likewise, an alternative that prescribes more acreage closed to OHV use would be more beneficial to wildlife than an alternative that prescribes less acreage closed to OHV use. Areas closed to OHV use would include some ACECs, WSAs, SRMAs, CSMAs, vegetation study areas, and non-WSA lands with wilderness characteristics (a list of closed areas under each alternative is provided in Table 2.1).

4.3.19.3.15.1. Alternative A

Under Alternative A, a total of 611,310 acres would be open to OHV use, which is more than under any other alternative. OHV use would be limited to designated roads and/or trails on approximately 1,329,430 acres and approximately 276,430 acres would be closed to OHV use.

4.3.19.3.15.2. Alternatives B and E

Under Alternatives B and E zero acres would be open to OHV use while 1,359,417 acres would be limited to designated routes. Alternatives B and E would close 423,698 acres to OHV use, which is 147,268 acres (35%) more than under Alternative A. These alternatives would prevent more surface disturbance and weed spread associated with OHV use than any other alternative.

4.3.19.3.15.3. Alternative C

Under Alternative C a total of 2,311 acres would be open to OHV use while approximately 1,362,142 acres would be limited to designated routes. Alternative C would close 418,667 acres to OHV use, which is 142,237 acres (33%) more than under Alternative A. This alternative would prevent approximately the same amount of surface disturbance and weed spread associated with OHV use as Alternatives B and E except that this alternative allows for designated "ways" in corridors to reach trailheads whereas Alternatives B and E do not allow these routes. The designated "ways" associated with Alternative C would result in impacts, as described above, in these areas. These impacts would not be sustained under Alternative B or E.

4.3.19.3.15.4. Alternative D

Under Alternative D a total of 2,311 acres would be open to OHV use while 1,780,807 acres would be limited to designated routes. Alternative D would close no land to OHV use. The lack of closures would make the adverse impacts to wildlife species and their habitats of this alternative greater than under all other alternatives.

4.3.19.3.16. Impacts of Vegetation Decisions on Wildlife and Fisheries

Impacts varying between alternatives result from varying treatment acreages (Table 4.212). Though vegetation treatments would likely cause short-term adverse impacts to all wildlife in the area, impacts would vary over the long-term; depending on what sort of habitat is removed and what habitat type is encouraged to regenerate, some species would benefit and others would experience adverse impacts due to loss of forage or cover. Vegetation treatments focused on removing non-native plants would have long-term, beneficial impacts on the treated wildlife habitats as a whole; removing undesirable, non-native plant species, would allow the establishment of a diverse, native vegetation community.

Table 4.212. Acres of Annual Vegetation Treatments by Vegetation Type and Alternative

Vegetation type	Alternatives				
	A	B	C	D	E
Existing treatments on various vegetation types	U[1]	1,000	1,500	2,000	1,000
Sagebrush	U	1,000	1,500	2,000	1,000
Invasive Weeds	U	3,000	3,000	3,000	3,000
Pinyon/juniper	U	2,000	3,000	4,000	2,000
Riparian	U	500	100	100	500
Greasewood	U	100	200	200	100
Total	**U**	**7,600**	**9,300**	**11,300**	**7,600**

U=Unspecified. Total land treatments for Alternative A = 9,320 acres

4.3.19.3.16.1. Alternative A

Under Alternative A, existing land treatments would be maintained and new land treatments would be provided applying RMP stipulations and special conditions through NEPA documentation. Treatments would occur on a dispersed basis on 232,130 acres. Impacts to wildlife would be of the nature described above.

4.3.19.3.16.2. Alternatives B and E

Under Alternatives B and E there would be a total of approximately 7,600 acres of vegetation treatments annually. Of all alternatives, this is the smallest acreage of annual vegetation treatments. Thus, short-term adverse impacts to wildlife would be least pronounced under these alternatives but long-term beneficial impacts to wildlife would also be least pronounced.

4.3.19.3.16.3. Alternative C

Under Alternative C there would be a total of approximately 9,300 acres of vegetation treatments annually. Impacts on wildlife would be intensified under this alternative compared to Alternative A since a greater number of acres would be treated per year.

4.3.19.3.16.4. Alternative D

Under Alternative D there would be a total of approximately 11,300 acres of vegetation treatments annually. The acreage of vegetation treatments is greater under this alternative than under any other alternative, therefore the impacts to wildlife would be most pronounced under this alternative.

4.3.19.3.17. Impacts of Visual Resources Decisions on Wildlife and Fisheries

The impacts to wildlife from visual resources decisions are generally associated with whether or not lands are protected from surface disturbance (due to the visual impacts of such disturbance). If lands are considered to have high scenic quality, they will likely be inventoried and designated as VRM Class I or II. Landscapes with lower scenic quality are likely inventoried and designated as VRM Class III or IV. Usually VRM Classes I and II are most beneficial to wildlife and their

habitats because lands with such ratings are more carefully protected from surface disturbance and its associated adverse impacts to animals.

Impacts that vary between alternatives result from varying acreages that would be designated as VRM Classes I, II, III, or IV (Table 4.213).

Table 4.213. Total Acreage in Monticello PA Designated Under Each VRM Class by Alternative

VRM Class	Alternatives				
	A	B	C	D	E
I	371, 575 (21%)	497,668 (28%)	425,179 (24%)	390,424 (22%)	998,370 (56%)
II	355,112 (20%)	250,641 (14%)	132,001 (7%)	8,838 (<1%)	111,478 (6%)
III	416,806 (23%)	426,350 (24%)	531,920 (30%)	692,741 (39%)	264,369 (15%)
IV	637,875 (36%)	608,463 (34%)	693,995 (39%)	691,119 (39%)	407,459 (23%)
Total[1]	**1,781,368**	**1,783,122**	**1,783,095**	**1,783,122**	**1,781,676**

[1] Total acreages vary due to slight differences in GIS shapefiles.

4.3.19.3.17.1. Alternative A

Under Alternative A, 41% of land in the Monticello PA would be designated as VRM Class I or II. The wildlife species that use these lands would benefit from the increased protection from surface-disturbing activities that management under these VRM Classes affords, but may adversely impact some species that benefit from vegetation treatments that are designed for wildlife.

4.3.19.3.17.2. Alternative B

Under Alternative B 42% of land in the Monticello PA would be designated as VRM Class I or II. This alternative would be the more beneficial to wildlife and their habitats than Alternative A since a greater percentage of land would be managed under the most restrictive VRM Classes. Some species may be adversely impacted in the long-term by greater restrictions on surface-disturbing activities, which includes habitat improvements and vegetation treatments.

4.3.19.3.17.3. Alternative C

Under Alternative C approximately 31% of land in the Monticello PA would be designated as VRM Class I or II. This alternative would be less beneficial to wildlife and their habitats than Alternative A since 10% less land would be managed under the most restrictive VRM Classes. On the other hand, fewer restrictions also allow for more habitat improvements and vegetation treatments which would translate into greater benefits for some species.

4.3.19.3.17.4. Alternative D

Under Alternative D 22% of land in the Monticello PA would be designated as VRM Class I or II. This alternative would be the least beneficial to wildlife compared to all other alternatives since it manages the least amount of land under the most restrictive VRM Classes. Some species

would benefit more under this alternative since more habitat improvements and vegetation treatments could occur.

4.3.19.3.17.5. Alternative E

Under Alternative E 62% of land in the Monticello PA would be designated as VRM Class I or II. This alternative would be the most beneficial to wildlife compared to all other alternatives since it manages the greatest amount of land under the most restrictive VRM Classes. Some species may experience more adverse impacts due to lack of habitat improvements and vegetation treatments, which would be restricted or prohibited under this alternative.

4.3.19.3.18. Impacts of Woodlands Decisions on Wildlife and Fisheries

Impacts from woodlands decisions on wildlife vary depending primarily upon the number of acres of wildlife habitat open to woodland harvest under each alternative (Table 4.214). Adverse impacts to wildlife from woodland harvest include direct habitat loss, habitat degradation, and habitat fragmentation. Indirect, adverse impacts of wood gathering on wildlife species and their habitats include trampling and removal of native vegetation, which results in habitat degradation that can include reduction of prey species, forage species, and cover. All areas open to woodland harvest in each alternative are woodland vegetation types.

Table 4.214. Acres in the Monticello PA Open to Woodland Harvesting

	Alternatives				
	A	B	C	D	E
Total Open Areas	1,309,894	730,074	841,938	841,938	548,477

4.3.19.3.18.1. Alternative A

Under Alternative A, more acres would be open to woodland collection with fewer restrictions than under any other alternative making Alternative A the most adverse to wildlife.

4.3.19.3.18.2. Alternative B

Under Alternative B there would be 579,820 fewer acres open to woodland harvesting than under Alternative A. This alternative would be less adverse to wildlife than Alternative A since it closes more land to harvest of woodland products. Further, limitations on off-road travel and seasonal restrictions on wood collection would help mitigate the adverse impacts of woodland product collection and harvest, where it occurs, on wildlife resources.

4.3.19.3.18.3. Alternative C

Under Alternative C, 467,956 fewer acres would be open to woodland harvesting than under Alternative A. Also, seasonal restrictions on wood collection would not apply in any area and wood collection in certain areas would be restricted to within 150 feet of designated routes and permitted off-road travel. Despite the lack of seasonal restrictions on wood collection this alternative would have fewer adverse impacts on wildlife resources than Alternative A due to the decreased acreage open to wood collection.

4.3.19.3.18.4. Alternative D

Alternative D impacts would be the same as Alternative C except that wood collection in certain areas would not be restricted to any buffer zone along designated routes or permitted off-road travel. Alternative D would have greater adverse impacts on wildlife than Alternative C since it places the fewest restrictions on wood collection. However, impacts associated with Alternative D would be less than Alternative A due to the greater acreage open to woodland product use under Alternative A.

4.3.19.3.18.5. Alternative E

Under Alternative E there would be fewer acres open to woodland harvest than under any other alternative (761,417 fewer acres available for harvesting than Alternative A). This alternative would be the least adverse to wildlife of all alternatives since it opens the least amount of land to woodland collection.

4.3.19.3.19. Impacts of Habitat Fragmentation on Wildlife

In addition to directly disturbing wildlife habitat, roads associated with minerals and travel decisions also fragment adjacent (undisturbed) habitat, thereby degrading its value to wildlife. Habitat fragmentation may be less obvious than direct impacts such as vehicle collisions with wildlife or vegetation removal, but often carries considerable consequences for long-term population and reproductive success. Large expanses of habitat may be required to meet the minimum habitat requirements of the largest, most widely roaming species, including top carnivores and large migrating herd animals.

The impacts of habitat fragmentation from foreseeable oil and gas development were analyzed for deer and elk, desert bighorn sheep, sage grouse, and migratory birds (discussions of impacts to sage grouse are provided in Section 4.3.15, Special Status Species). These species were selected for analysis for three reasons: 1) they are species of high interest; 2) published studies were available that provided suitable fragmentation thresholds to assess impacts to the species; and 3) GIS data were available to support the analyses. Other wildlife species (e.g., amphibians, reptiles, small game, and raptors) would likely also be impacted by habitat fragmentation, but did not meet the analysis criteria above.

The impacts of habitat fragmentation on various animal species are difficult to quantify. Even with site-specific, peer-reviewed ecological research on the impacts to particular wildlife species from habitat fragmentation, many variables that contribute to the severity of the impacts to nearby wildlife remain difficult to predict. Such variables include vehicle use per hour and day, vehicle speed, noise per vehicle, how often drivers leave their vehicles, etc. Unless otherwise stated, for the purpose of this analysis it is assumed that all roads in the Monticello PA (existing and proposed) would have equal impact on a wildlife species.

4.3.19.3.19.1. General Methodology

GIS models were created to analyze the degree of habitat fragmentation under each alternative. The models were based on the BLM's best available GIS data for existing roads within the Monticello PA. The model utilized habitat acreages proposed under each alternative for each species or group of species. Within areas of the Monticello PA that would be open to oil or gas well development (under Standard, Controlled Surface Use, or Controlled Surface Use and

Timing Stipulations), the number of wells expected under the RFD scenario were randomly distributed by RFD area. Only roads effects were considered in the models; individual wells were assumed to have no area and no impact on fragmentation.

Once the wells had been distributed within the network of existing roads, the model generated new roads that connected each well to the nearest existing road. Roads were generated as the shortest straight line from well to existing road, without consideration for topography or ease of travel. The habitat fragmentation analysis considered the effects of all BLM-identified existing roads and new computer-generated roads on the habitat of each wildlife species examined.

Several potential sources of error affect these analyses. First, not all existing roads were included in the GIS database utilized in the models due to unofficial and uninventoried roads. Therefore, these analyses may slightly underestimate some adverse impacts from habitat fragmentation. Second, many roads in the Monticello PA are rarely traveled by vehicles (personal communication, Katie Stevens), and therefore would have little contribution to habitat fragmentation. Including roads with little travel would tend to overestimate the impacts of roads on wildlife habitat. Because the effects of under- and over-estimation would be consistent across all alternatives, the results presented should be useful for comparative purposes.

4.3.19.3.19.2. Analysis of Impacts to Wildlife

Mule Deer and Elk

Methodology

Habitat fragmentation for mule deer and elk was assessed by determining the proportion of habitat where road densities would exceed 0.16 km/km². Habitat where this threshold would be exceeded was considered unfavorable, following Sawyer et al. (2006), who found that mule deer preferentially use habitat where road densities are </= 0.16 km/km² in a natural gas field in western Wyoming. Because elk are thought to experience similar impacts to mule deer when disturbed, and as they often occur in similar habitat types as mule deer (Sawyer et al. 2006) this information was also used to predict the spatial distribution of elk since there were no comparable elk data. Road density was calculated per square km of BLM-managed habitat in the Monticello PA.

Results

Table 4.215 presents the proportion of UDWR-designated mule deer and elk habitat that would be considered unfavorable to each species due to fragmentation by roads under each alternative. Fragmentation of elk habitat under each alternative is shown in Maps 61 – 64, and mule deer habitat fragmentation is shown in Maps 69 – 72.

Table 4.215. Percent of Mule Deer and Elk Habitat Considered Unfavorable After Fragmentation by Roads (Road Density < 0.16 km/km²)

Species	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Mule Deer	53.2%	50.1%	52.9%	54.4%	50.1%
Elk	49.9%	49.2%	52.2%	52.9%	49.2%

Under each alternative approximately half of the mule deer and elk habitats in the Monticello PA would be unfavorable to mule deer due to existing roads and those expected due to reasonably foreseeable minerals development. The small difference (4.3%) between the most and least favorable alternatives seems to indicate that existing roads in the Monticello PA cause most of the habitat fragmentation for mule deer and elk. The number of new roads to be built under each alternative, as modeled, varies considerably, but in comparison to existing roads, new roads only contribute a few percentage points to habitat fragmentation.

Desert Bighorn Sheep

Methodology

The impacts of habitat fragmentation on desert bighorn sheep were assessed using habitat patch size, rather than road density (as with mule deer and elk). This assessment assumed that patch sizes smaller than 159 km² were generally unsuitably fragmented, following Singer et al. (2001), who found that bighorn sheep released into habitat patches of at least 158.7 km² ± 60.3 km² colonized an average of one neighboring patch, while bighorn sheep released in smaller patches did not colonize neighboring areas and eventually left the area. Patch colonization is a necessary precursor to reproduction and population maintenance. Desert bighorn sheep are more sensitive to encroachment and habitat fragmentation than are other ungulates in the Monticello PA (Singer et al. 2001).

Desert Bighorn Sheep Results

Table 4.216 presents the acres of UDWR-designated desert bighorn sheep habitat that would be found in patches larger or smaller than 159 km² under each alternative.

Table 4.216. Desert Bighorn Sheep Habitat Fragmentation Analysis

Alternative	Road Corridor	Habitat Patch <158.7	Habitat Patch >=158.7	Total
A	3,873	261,751	879,033	1,144, 657
B	2,995	253,611	888,051	
C	3,697	333,632	807,328	
D	3,908	380,348	760,401	
E	2,995	253,611	888,051	

Alternatives E, B, and A are the most favorable alternatives for unfragmented habitat within the Monticello PA. Alternative C would allow for roughly 80,000 fewer acres of isolated habitat for desert bighorn sheep than these alternatives.

Migratory Birds

Methodology

Fragmentation of migratory bird habitat was assessed by calculating the acreage of migratory bird habitat that would be impacted by vehicle and pedestrian traffic for all lands within the Monticello PA. All lands within the Monticello PA were used for these calculations to avoid falsely introducing fragmentation due to land ownership. The potential area of impact was assumed to be a 400-meter buffer along each side of all roads in designated migratory bird

habitat. This buffer represents an average distance based on applicable literature (Clark and Karr 1979, Connelly et al. 2000, Crawford et al. 2004, UDWR 2002).

Because numerous migratory bird species use various habitats in the Monticello PA, impacts were analyzed based on habitat types, which could then be extrapolated to specific bird species.

Results

Table 4.217 presents the acreage of each habitat type that falls within the 400-meter buffer surrounding roads in the Monticello PA by alternative, as well as representative bird species that would be impacted. Although other birds utilize these habitats, these migratory birds were selected for analysis because many of them are found on lists of sensitive species (Partners in Flight and Birds of Conservation Concern). The presence of roads can have numerous adverse impacts on avian communities, including displacement, loss of habitat, and vehicular-related mortalities. Vehicles often hit and kill birds that are attracted to roadside vegetation, spilled grain, or dead animals (Forman and Alexander 1998).

Table 4.217. Acres of Vegetation Habitat Types Impacted by Roads and Buffers

Vegetation Type	Associated Species	Alternatives				
		A	B	C	D	E
Conifer and Mountain Shrub	Clark's Nutcracker, Flammulated Owl, Grace's Warbler, Gray Vireo.	92,333	109,518	110,535	110,860	109,518
Desert Scrub	Ash-throated Flycatcher, Brewer's Sparrow, Golden Eagle.	479,823	454,789	473,849	484,668	454,789
Pinyon-Juniper	Black-throated Gray Warbler, Gray Vireo, Juniper Titmouse, Pinyon Jay.	619,620	535,820	599,590	627,324	535,820
Riparian and Wetland	Blue Grosbeak, Cooper's Hawk, Hermit Thrush, Peregrine Falcon, Northern Harrier.	27,974	27,056	27,867	28,603	27,056
Sagebrush and Perennial Grassland	Horned Lark, Brewer's Sparrow, Sage Thrasher, Western Meadowlark.	174,899	162,975	171,214	176,480	162,975
Total		**1,394,649**	**1,290,158**	**1,383,055**	**1,427,935**	**1,290,158**

Under each of the alternatives, birds that use desert shrub habitats would experience the most habitat fragmentation. Migratory birds that utilize pinyon-juniper woodlands would be the next most heavily impacted by road effects and habitat fragmentation.

Of all the alternatives, Alternative D would cause the most fragmentation by allowing approximately 137,777 more acres of disturbance than Alternatives B and E, 44,880 more than

Alternative C, and 33,286 more than Alternative A. Alternatives B and E would cause the least amount of road-related disturbance to migratory bird habitat (in total and within each habitat type).

4.3.19.4. Summary of Impacts

Table 2.2 contains a summary of impacts of management decisions on wildlife and fisheries resources.

4.3.19.5. Mitigation Measures

The protective measures for wildlife described in Table 2.1, Management Common to All Alternatives in Chapter 2, Appendix M (Raptor Best Management Practices), and Appendix I (SOPs) in addition to BMPs for other resources would serve to avoid and/or minimize impacts to wildlife resources in the Monticello PA.

4.3.19.6. Unavoidable Adverse Impacts

Unavoidable adverse impacts to wildlife would include short-term reductions in cover due to trampling and grazing by livestock, trampling and weed introduction by human visitors (motorized and non-motorized), and noise disturbance of individual animals associated with human presence. Permanent alteration of wildlife habitat due to clearing activities such as oil well pad installation and woodland harvest would constitute long-term adverse impacts on wildlife.

4.3.19.7. Short-Term Use Versus Long-Term Productivity

As discussed throughout this section, some of the short-term, multiple uses of the Monticello PA would adversely impact wildlife habitats. These uses include oil and gas development, livestock grazing, dispersed and developed camping, off-road vehicle travel, and woodland harvest. Most of these impacts, however, are accompanied by economic benefits, and would be partially mitigated by the protective measures discussed in the Impacts Common to All Alternatives sections for each management decision. Effective implementation of these protective measures would prevent these uses from substantially impacting the long-term productivity of wildlife and fisheries resources.

4.3.19.8. Irreversible and Irretrievable Impacts

There would be no anticipated irreversible impacts to wildlife, fisheries, or wildlife habitat associated with the management decisions proposed for the Monticello PA. There would, however, be irretrievable impacts associated with surface-disturbing activities proposed throughout the planning area. The native vegetation that would be removed or disturbed when roads or trails are cut, oil pads installed, or areas are over-grazed would be an irretrievably lost until successful restoration occurred. The effects of habitat fragmentation due to roads and other disturbances would also persist until removed and successfully reclaimed.

4.3.20. Woodlands

The management of high-use recreation areas, some ACECs, non-WSA land with wilderness characteristics, and all WSAs prohibits the harvesting of woodland products. Most woodland

harvesting within the Monticello PA is by individuals for use as firewood, fence posts, Christmas trees, landscaping, and greenwood cutting (see Section 3.21.3, Woodlands, for a description of resource demand and use). Thus, it was assumed that areas within the PA that were open to woodlands harvesting would have beneficial impacts on the resource because 1) opportunities would be available to the public to harvest wood for a variety of uses, and 2) managed woodland harvesting (harvesting-related fuel load reductions) would reduce wildland fire risks in dense woodland stands and potentially improve woodland ecosystem health. The quantitative criteria for impacts analysis were the number of acres available and unavailable for woodland harvesting within the Monticello PA.

4.3.20.1. Impacts Common to All Alternatives

Under all of the alternatives, 386,027 acres of WSAs (approximately 22% of the planning area) would be excluded from woodland harvesting and product use, which would have long-term, restriction-related, adverse impacts on opportunities for woodland harvesting until Congress makes a final determination on the wilderness suitability of these areas.

Long-term, beneficial impacts to woodland resources harvesting opportunities under all of the proposed alternatives would include: (1) allowing woodland harvesting in coordination with fire management fuels treatments projects, and (2) and allowing pinyon and juniper harvesting in areas where these woodland species are encroaching on the sagebrush steppe vegetation community.

4.3.20.2. Impacts Common to All Action Alternatives

Under Alternatives B, C, D, and E, implementing the Healthy Forest Initiative and the 2003 Healthy Forest Restoration Act would have long-term, beneficial impacts on woodland resources by improving the health and ensuring the sustainability of the resource for long-term harvesting and product use.

Restricting riparian woodland species harvesting (cottonwood and willow) to Native American ceremonial use-only in order to maintain or achieve healthy riparian ecosystems would have long-term, beneficial impacts to riparian woodland resources because these restrictions would ensure the health and sustainability of this resource.

4.3.20.3. Alternatives Impacts

For all of the alternatives, woodland resource use and management would be required to meet VRM Class objectives. All of the alternatives would designate acreages within the PA as VRM Class I through VRM Class IV, with VRM Class I management objectives having the most restrictions on surface disturbing activities and VRM Class IV objectives having the least (see Sections 3.18 and 4.18 for a discussion of VRM). For analysis purposes, it was assumed that the more protective VRM classes (VRM Classes I and II) would place more restrictions on woodland harvesting opportunities because harvesting is a surface disturbing activity that could create visual contrasts and impact scenic quality. Thus, in general, VRM Class I and II designations would potentially have long-term, adverse impacts on opportunities for woodland harvesting by restricting these surface disturbing activities in visually protected areas. It was assumed that VRM classes III and IV would likely have the least long-term, adverse impacts on

opportunities for woodland harvesting because the VRM management objectives under these classes would be the least restrictive on surface disturbing activities.

It was also assumed that OHV areas that are designed as open to cross-country use and limited to designated routes would provide adequate access to woodland resources areas for harvesting and transporting woodland products. Consequently, it was assumed that closing an area to OHV motorized travel would essentially preclude woodland harvesting in that area.

The following resource management decisions would have negligible to minor impacts on woodland resources and will not be analyzed further in this section:

- Air Quality

  Air quality management decisions would have negligible impacts on woodland resources because timing prescribed burns and managing emissions to prevent air quality degradation and comply with state and federal air quality standards would not interfere with woodland harvesting and gathering, woodland restoration, and compliance with the Healthy Forest Initiative.

- Health and Safety

  Health and safety management decisions for all the alternatives that would identify and address abandoned minelands safety concerns, respond to hazardous waste releases, and protect public hearth and safety would have negligible impacts on woodland resources management and woodland harvesting for products use. The hazardous materials management decisions would not interfere or restrict woodland harvesting and gathering, woodland sustainability, and woodland restoration.

- Lands and Realty

  Management decisions common to all alternatives for lands and realty for access, permits, transfer, acquisition, or exchange of lands within the Monticello PA would have negligible impacts on woodland resources or woodland harvesting for wood products. The impacts would be negligible because there are no lands and realty management decisions that address woodlands resources management or specifically identify woodland harvest areas.

- Livestock Grazing

  Grazing management decisions would have negligible to minor impacts on woodland resources because grazing restrictions and exclusions and authorized grazing use within the planning area do not impinge on woodland resources management and woodland harvesting for products use.

- Paleontology

  Management decisions common to all alternatives for paleontological resources would have negligible impacts on woodland resources because the collection of fossils for personal, commercial, and scientific use and the protection of this resource would not affect woodland resources harvesting or gathering or woodlands resource management for sustainable woodland products use.

- Special Status Species

The impacts of special status species management decisions common to all alternatives on woodland resources would be negligible because temporary seasonal or spatial buffers and restrictions for roosting or nesting birds and habitat enhancement to protect special status species would not restrict woodland harvesting or woodlands management.

4.3.20.3.1. ALTERNATIVE A

4.3.20.3.1.1. Impacts of Cultural Resources Decisions on Woodlands

The Grand Gulch Special Emphasis Area/National Historic District (37,433 acres) would be excluded from woodland harvesting, which is approximately 3% of the total area open to woodland harvesting under this alternative. Closing this area would have long-term, adverse impacts on the opportunities for woodland products use because the area would not be open to harvesting.

4.3.20.3.1.2. Impacts of Fire Management Decisions on Woodlands

No areas or acreages are specified for fire management under this alternative, except for fuels treatments on an estimated 5,000 to 10,000 acres per year. Woodland resources would be subject to fire management fuels treatments at the site-specific level to reduce the risk of wildland fire. It is impossible to quantitatively analyze the potential impacts of these treatments since it is not known how much, where, or when they would occur. The impacts of these treatments would be analyzed through site-specific NEPA processes. However, it is likely that these treatments would have an adverse, short-term impact on woodlands because of the loss of vegetation (including woody vegetation), and surface disturbances caused by managed, naturally ignited wildland fire, prescribed fire, fuel load reductions, fuels treatments, and fire suppression. This vegetation loss and soil disturbance would likely result in some soil erosion and compaction, as well as increasing the potential for noxious weed and exotic species invasion and establishment. Fire treatments would also have short-term, adverse impacts on woodlands harvesting by potentially restricting entry into treated areas until vegetation re-growth and establishment, typically for two years (personal communication between Daryl Trotter, Moab FO, and David Harris, SWCA, 2006). However, fire management decisions (including managed, naturally ignited wildland fire) under this alternative would have long-term, beneficial impacts on woodland resources because they would reduce the risk of wildland fire due to reduced fuel loads and would improve fire condition classes, resulting in sustainable yields of woodland products.

4.3.20.3.1.3. Impacts of Minerals Decisions on Woodlands

Minerals management decisions for the exploration and development of leasable, locatable, and salable minerals under Alternative A would have potential long-term, adverse impacts on woodland resources through surface disturbances (e.g., access road and well pad construction, seismic and geophysical exploration) that would remove or trample woodland resources, which would reduce woodland resources productivity and reduce the opportunities for woodland harvesting and gathering in developed areas. These impacts would be the same under all of the alternatives.

Under Alternative A, approximately 1,387,933 acres would be available under standard stipulations and timing and controlled surface use leasing categories for oil and natural gas exploration and development. However, it should be noted an estimated total of 76 wells would

be drilled over the lifetime of the proposed RMP with a potential total surface disturbance of 730 acres. Predicted geophysical exploration would impact approximately 886 acres during the life of the plan. Thus, the expected potential disturbance from oil and natural gas exploration and development would be approximately 0.1% of the area available for minerals leasing and development. Based on the expected level of oil and gas development in the PA and the relatively small area of impact, the potential loss of woodland resource productivity would be minor.

4.3.20.3.1.4. Impacts of Recreation Decisions on Woodlands

Under Alternative A, there would be no restrictions from recreation management decisions on woodland resource harvesting, and wood collecting within the designated Canyon Basins, Grand Gulch Plateau, and San Juan River SRMAs. There would be no harvesting restrictions within the ERMA, except for the 1,280-acre Pearson hiking area, approximately 196,040 acres of ROS P-Class areas, and 250 acres of developed recreation sites where harvesting would be excluded. This would have long-term, beneficial impacts on harvesting opportunities in undeveloped recreation areas because relatively few acres would have harvesting prohibitions from recreation-related decisions (11% of the Monticello PA); however, under this alternative, there would also be direct, long-term, adverse impacts caused by unrestricted, unlimited harvesting of the resource that could reduce long-term woodland resource productivity and threaten the long-term sustainability of resource harvesting.

4.3.20.3.1.5. Impacts of Riparian Decisions on Woodlands

Management decisions under this alternative would exclude riparian areas from private and commercial woodland harvesting. Additionally, they would require fire suppression in riparian areas to protect riparian resources. This would have long-term, beneficial impacts on riparian woodland resources (i.e., cottonwood and willow) by ensuring the sustainability and stability of riparian-woodland resources. Although the limitations on woodland harvesting within riparian areas would have some long-term adverse impact on opportunities for resource harvesting, this impact would be minor because riparian vegetation (e.g., cottonwood and willow) are typically not highly sought after for private or commercial harvesting.

4.3.20.3.1.6. Impacts of Soils/Watershed Decisions on Woodlands

Alternative A soils and watershed decisions would have negligible impacts on woodlands resources management or woodland harvesting because there are no vegetation or watershed treatments proposed that would affect woodlands or access to woodland resources.

4.3.20.3.1.7. Impacts of Special Designations Decisions on Woodlands

<u>WSAs</u>

As discussed above under Impacts Common to All Alternatives, all WSAs (totaling 399,600 acres or 22% of the Monticello PA) would be closed to harvesting (in compliance with the IMP) to preserve the wilderness values within these areas. This would have long-term, adverse, but minor impacts on opportunities for woodland resources use because, while these areas are currently and would continue to be closed to harvesting, and because they are relatively inaccessible to woodland harvesting because of topography and/or the lack of OHV access routes.

ACECs

Under Alternative A, approximately 139,796 acres would be closed to harvesting in Bridger Jack Mesa, Butler Wash, Dark Canyon, Hovenweep, Indian Creek, Lavender Mesa, Shay Canyon ACECs, and the Grand Gulch portion of Cedar Mesa ACEC. This would have long-term, adverse, but minor impacts on woodland resources use because less than 8% of the Monticello PA would be closed to harvesting opportunities because of ACEC special designation decisions.

Wild and Scenic Rivers

Under this alternative, river segments encompassing approximately 7,168 acres of the San Juan River and 1,920 acres along the Colorado River were determined to be eligible for suitability determination under the NWSRS, and thus excluded from woodland products harvesting and use. This would have long-term, adverse, but minor impacts to woodland resources harvesting for reasons as discussed under WSAs above.

4.3.20.3.1.8. Impacts of Travel Decisions on Woodlands

Under Alternative A, OHV use would be designated as open, limited to existing or designated routes, or closed. Areas that are closed to OHV use would have long-term, adverse impacts on woodland harvesting because opportunities for harvesting access to woodland resources would be limited or prohibited.

Under this alternative, 276,430 acres would be closed to OHV use (or 21% of the acreage available for woodland harvesting), with long-term, adverse impacts on opportunities for woodland harvesting as discussed above.

4.3.20.3.1.9. Impacts of Vegetation Decisions on Woodlands

Under Alternative A, vegetation treatments would be applied to approximately 232,130 acres. These treatments would reduce fuel loading and control invasive species, with long-term, indirect, beneficial impacts on woodland productivity by reducing the risk of wildland fire and reducing the likelihood of displacement of woodlands by non-native, exotic, invasive species. Potential short-term impacts to woodlands would be the same as those discussed under Fire Management because the methods used for vegetation treatments would be similar: short-term, minor, direct and indirect impacts that would cause woody vegetation productivity losses and soil compaction in treatment areas.

4.3.20.3.1.10. Impacts of Visual Resources Decisions on Woodlands

Alternative A would designate approximately 726,687 acres as VRM Class I and Class II ([41% of the Monticello PA]; 371,575 acres would be managed under VRM Class I objectives and 355,112 acres under VRM Class II objectives). The impacts would be long-term and adverse on woodlands harvesting opportunities from likely restrictions on the amount and type of harvesting to preserve scenic quality; however the impacts would be minor because: (1) non-mechanized harvesting could be allowed within VRM Class I areas if the management class objectives were met, and (2) mechanized harvesting would be allowed in VRM II if the degree of harvesting related surface disturbances met VRM II scenic quality objectives. Approximately 1,054,681 acres would be managed under VRM Class III and IV objectives, with negligible impacts on

woodland harvesting opportunities because few restrictions would be applied under these VRM class objectives to limit harvesting.

4.3.20.3.1.11. Impacts of Wildlife and Fisheries Decisions on Woodlands

Under this alternative, general management decisions for the improvement of riparian habitat areas, control of invasive and non-native plants to maintain migratory bird habitat, and decisions that encourage the regeneration of cottonwood and willows would beneficially protect and improve woodland ecological conditions for sustainable riparian woodlands harvesting. These impacts would be applicable to all of the alternatives.

Under Alternative A, the impacts of specific wildlife and fisheries management decisions on woodland resources use would be negligible because management decisions for wildlife and fish species would not restrict or prohibit woodland harvesting.

4.3.20.3.1.12. Impacts of Woodlands Decisions on Woodlands

Management decisions under Alternative A would allow commercial and private woodland harvesting within the Monticello PA, except for approximately 473,282 acres within WSAs and the woodland harvesting exclusion areas described in the current RMP (Map 77). Accordingly, approximately 1,309,894 acres (73% of the planning area) would be open to harvesting and the remaining 27% would be closed because of WSA protection constraints under the IMP and other management decisions to protect resource values. There would be few other restrictions on harvesting woodland resources under this alternative. This would allow many harvesting opportunities and represents a generally beneficial impact on woodland harvesting and product use in the Monticello PA. The relatively small area closed for woodland harvest under this alternative would not substantially limit woodland harvesting opportunities. Based on GIS GAP data acreage calculations of pinyon and juniper, these woodland species cover approximately 793,757 acres (61%) of the 1,309,894 acres available for harvesting. Table 4.218 shows a comparison of available woodland acreages under each alternative.

Table 4.218. Woodland Available for Woodland Harvesting, by Alternative

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Available for Woodland Harvesting in Monticello PA (Acres)	1,309,894	730,074	841,938	841,938	548,477
Percentage of Monticello PA Available for Harvesting	73%	41%	47%	47%	31%
Percentage of Pinyon-Juniper Coverage in Available Areas	61%	69%	71%	71%	13%
Acres of Pinyon- Juniper in Available Areas	793,757	504,666	597,086	597,086	73,428

4.3.20.3.2. ALTERNATIVE B

4.3.20.3.2.1. Impacts of Cultural Resources Decisions on Woodlands

Planned reductions of hazardous fuels or mitigation of potential fuel load hazards around archaeological sites would reduce the risk of wildland fire in the long-term, thus beneficially reducing the risk of loss of woodland productivity and preserving the resource for sustainable harvesting. Specific acreages for these fuel reduction treatments around archaeological sites are not known, but would be analyzed through site-specific NEPA processes when treatments areas were proposed. These impacts would be similar for Alternatives B, C, and D.

Under this alternative, approximately 99,955 acres would be excluded from woodland harvesting (except for traditional cultural use in Tank Bench) within the Comb Ridge, Tank Bench, Beef Basin, and McLoyd Canyon-Moon House CSMAs, and in the Grand Gulch National Historic District, with adverse restriction-related impacts on woodland harvesting opportunities. Compared to Alternative A, this alternative would close more than two and one-half times more acres to woodlands harvesting (62,522 more acres) than Alternative A.

4.3.20.3.2.2. Impacts of Fire Management Decisions on Woodlands

The impacts would be the same as those discussed under Alternative A because the management decisions are the same.

4.3.20.3.2.3. Impacts of Minerals Decisions on Woodlands

Under Alternative B, approximately 1,241,909 acres would be available under standard stipulations and timing and controlled surface use leasing categories for oil and natural gas exploration and development. The potential impacts of mineral exploration and development on woodland resources would be similar to those discussed above under Alternative A because the predicted minerals development within the planning area would be the same. Under this alternative, it is estimated that an average of 66 wells would be drilled during the life of the proposed RMP, causing surface disturbances on approximately 636 acres, with 794 acres of impacts from geophysical exploration. Thus, in comparison to Alternative A, the expected potential disturbance from oil and natural gas exploration and development would be the same (approximately 0.1% of the area available for minerals development), with impacts to woodland resources as discussed under Alternative A.

4.3.20.3.2.4. Impacts of Recreation Decisions on Woodlands

Recreation management decisions under Alternative B would close existing and future recreational facilities to private and commercial harvesting of woodland products, including the collection of deadwood for campfires. The San Juan River SRMA (10,203 acres) would be closed to woodland products use, except for campfire wood collecting and permitted wood gathering by Native Americans. Cottonwood and willow woodland harvesting would be allowed for Native American ceremonial use only. The long-term impacts of these management decisions on woodland resource uses along this high-use river corridor would beneficially maintain a sustainable yield of riparian woodland resources. The 375,734-acre Cedar Mesa CSRMA and the Dark Canyon SRMA (30,820 acres) would be closed to all woodland resource use, which would have long-term, adverse impacts on woodland resources because opportunities for harvesting

would be reduced. Compared to Alternative A, this alternative would have more adverse impacts on woodlands by excluding or restricting woodland harvesting on more acres within the Monticello PA.

4.3.20.3.2.5. Impacts of Riparian Decisions on Woodlands

The impacts to woodland resources would be the same as those discussed under Alternative A for riparian resources, except that: (1) riparian woodland harvesting (cottonwood and willow) for traditional purposes would be allowed, and (2) OHV use in specified riparian areas would be designated as closed. Native American harvesting of riparian woodlands for traditional purposes would have negligible or minor impacts on riparian woodland resources because restrictions on harvesting would be implemented as necessary to protect and enhance the riparian woodland resource. Closing riparian areas to OHV use would have long-term, beneficial impacts on riparian woodlands sustainability by directly protecting the resource from surface disturbance-related degradation of this resource, and indirectly protecting riparian soils. Compared to Alternative A, this alternative would be more adverse in the short-term on woodland harvesting by restricting resource use, but also more beneficial in the long-term by managing sensitive riparian woodland resources for sustainable resource harvesting and wood gathering.

4.3.20.3.2.6. Impacts of Soils/Watershed Decisions on Woodlands

Under Alternative B, vegetation treatments to reduce tamarisk in watersheds would have short-term and long-term impacts on woodland resources the same as those discussed under Fire Management for Alternative A because the impacts of vegetation treatments would be the same as fuel reduction treatments. Compared to Alternative A, this alternative would potentially restrict woodland harvesting on up to 1,000 acres per year because of proposed vegetation treatments (see Section 4.3.20.3.2.9, below), with adversely reduced opportunities on harvesting.

4.3.20.3.2.7. Impacts of Special Designations Decisions on Woodlands

ACECs. Under Alternative B, approximately 522,035 acres (29% of the Monticello PA) would be closed to woodland harvesting. The impacts would be the same as discussed under Alternative A, but to a greater degree because this alternative would restrict woodland harvesting on 469,047 more acres (more than three and one-half times the acreage), with similar impacts on opportunities for harvesting, but to a greater degree because more acres of woodlands would be affected by harvesting prohibitions.

Wild and Scenic Rivers. This alternative would exclude approximately 18,768 acres from woodlands harvesting to preserve eligible river corridors. The adverse impacts would be the same as those discussed under Alternative A, but to a greater degree because more area (11,600 acres or 2.5 times more acres than Alternative A) would be excluded from woodland harvesting.

4.3.20.3.2.8. Impacts of Travel Decisions on Woodlands

Under Alternative B, 423,698 acres would be closed to OHV use, with long-term, adverse impacts to harvesting opportunities in the OHV closed areas because access to and transport of woodland products would be prohibited. When compared to Alternative A, this alternative would close approximately 147,268 (53%) more acres to harvesting and collection, with more adverse impacts on harvesting opportunities from reduced access to woodlands.

4.3.20.3.2.9. Impacts of Vegetation Decisions on Woodlands

In general, the impacts to woodlands resources from vegetation decisions would be the same as those discussed under Fire Management because the treatments for vegetation fuel load reductions, noxious weed control, and modification of fire condition classes would be the same treatments used for woodlands. These impacts would be applicable under all of the action alternatives.

Alternative B would treat approximately 2,500 acres per year in pinyon-juniper and riparian areas for the lifetime of the proposed RMP, totaling approximately 37,500 acres. This alternative would have short-term and long-term impacts in these treated areas, as discussed under Fire Management. Compared to Alternative A, this alternative would be more beneficial in the long-term to woodland resources because vegetation treatments in pinyon-juniper and riparian woodlands would reduce fuel loads, thus increasing the likelihood for sustained use of the resource and reducing the likelihood of stand-destroying wildland fire.

4.3.20.3.2.10. Impacts of Visual Resources Decisions on Woodlands

This alternative would designate approximately 748,309 acres (42% of the PA) as VRM Class I (497,668 acres) and VRM Class II (250,641 acres), with the same impacts as discussed under Alternative A. Compared to Alternative A, this alternative would designate 21,622 more acres for higher levels of visual resource protection, which would likely restrict the amount and type of woodland harvesting on more acres in these areas than under Alternative A, with greater long-term, adverse impacts on opportunities for harvesting.

4.3.20.3.2.11. Impacts of Wildlife and Fisheries Decisions on Woodlands

The impacts of this alternative on woodlands would be the same as those as discussed under Alternative A because the management decisions are essentially the same.

4.3.20.3.2.12. Impacts of Woodlands Decisions on Woodlands

Alternative B would potentially allow commercial and private woodland products harvesting (with permitted off-road travel to collect wood) on a total of 730,074 acres within designated woodlands harvesting zones (Map 78). This would permit woodland harvesting on approximately 41% of the PA, with 59% of the planning area (1,055,053 acres) closed to woodland harvesting. It should be noted that, based on GIS acreage calculations of pinyon and juniper GAP data for the woodland zones, these woodland species cover approximately 504,666 acres (69%) of the designated 730,074 acres within the woodland zones available for harvesting.

Under this alternative, the impacts to woodland resources would include: (1) permitted harvesting of woodlands on a substantial portion of the PA, and (2) controlled use of OHVs to collect wood, which would reduce the direct impacts from soil compaction and the indirect, long-term impacts to woodland resources from OHV-caused surface disturbances that create the conditions for exotic plants establishment and soil erosion. Compared to Alternative A, Alternative B would have the same impacts on woodland resources, but to a less beneficial degree, because fewer total acres would be open to woodland harvesting. This alternative would have long-term, potentially adverse impacts on woodland resources through restrictions on selective harvesting on 65,807 acres in the non-WSA portion of the Cedar Mesa Zone. As discussed in Section 3.21.3, the Cedar Mesa area is currently in need of fuel load reductions, and

restrictions on commercial and private selective woodland harvesting would potentially maintain the excessive fuel loading conditions in the area and maintain the risks of wildland fire.

Prohibiting OHV use on Cedar Mesa would likely have some beneficial impacts on long-term woodland sustainability and productivity by reducing the OHV impacts to woodland soils caused by soil and surface disturbances and soil erosion.

4.3.20.3.3. ALTERNATIVE C

4.3.20.3.3.1. Impacts of Cultural Resources Decisions on Woodlands

Under this alternative, approximately 61,943 acres would be excluded from woodland harvesting and product use (except for traditional cultural use in Tank Bench) within the Tank Bench, Beef Basin, and McLoyd Canyon-Moon House CSMAs, and in the Grand Gulch National Historic District. Compared to Alternative A, this alternative would exclude one and one-half times more acres (24,510 acres) from harvesting within the Monticello PA because of cultural management decisions, with resultant decreases in opportunities for woodland harvesting.

4.3.20.3.3.2. Impacts of Fire Management Decisions on Woodlands

No areas or acreages are specified for fire management under this alternative, so the impacts would be the same as those described under Alternative A.

4.3.20.3.3.3. Impacts of Minerals Decisions on Woodlands

Under Alternative C, approximately 1,348,973 acres would be available under standard stipulations and timing and controlled surface use leasing categories for oil and natural gas. The potential impacts on woodland resources would be the same, as discussed above under Alternative A, because the RFD forecast for minerals development within the planning area would be the same. Under this alternative, an estimated 74 wells would be drilled during the life of the proposed RMP, with total surface disturbances of approximately 710 acres. Predicted geophysical exploration impacts under this alternative would be approximately 903 acres. The expected potential disturbance from oil and natural gas exploration and development would be the same as Alternative A (approximately 0.1% of the area available for minerals development) and the impacts to woodland resources would be the same as those discussed under Alternative A.

4.3.20.3.3.4. Impacts of Recreation Decisions on Woodlands

Alternative C would have the same impacts on woodland resources from San Juan River SRMA decisions as discussed under Alternative B because the decisions would be similar. The Dark Canyon SRMA (30,820 acres) and the canyons within the 375,734-acre Cedar Mesa CSRMA would be closed to all woodland resource use. These decisions would adversely reduce the opportunities for woodland harvesting in the long-term. Compared to Alternative A, this alternative would exclude and adversely reduce harvesting opportunities in the long-term on more acres because of recreation decisions.

4.3.20.3.3.5. Impacts of Riparian Decisions on Woodlands

The impacts would be the same as discussed under Alternative B because the management decisions are the same.

4.3.20.3.3.6. Impacts of Soils/Watershed Decisions on Woodlands

The impacts of this alternative would be the same as those discussed under Alternative B because the management decisions are similar. Compared to Alternative A, this alternative would have impacts similar to those discussed under Alternative B, but to a greater degree because potentially more acres would be subjected to riparian vegetation treatments (1,500 acres per year).

4.3.20.3.3.7. Impacts of Special Designations Decisions on Woodlands

ACECs. Approximately 39,093 acres would be closed to woodland harvesting within proposed ACECs under this alternative. This alternative would have the same impacts as Alternative A, but to a lesser degree because 100,703 fewer acres would be adversely excluded from harvesting opportunities.

Wild and Scenic Rivers. This alternative would exclude approximately 3,968 acres from woodlands harvesting along eligible and recommended river segments, with adverse impacts on harvesting opportunities. The impacts would be more beneficial for harvesting opportunities in the long-term when compared to Alternative A because less area (3,200 acres or 55% of the acreage under Alternative A) would be excluded from woodland harvesting.

4.3.20.3.3.8. Impacts of Travel Decisions on Woodlands

Under Alternative C, 418,667 acres would be designated as Closed to OHV use. This would have similar impacts to those discussed under Alternative A, but to a greater adverse degree because this alternative would effectively close approximately 51% more acres to OHV harvesting and collection.

4.3.20.3.3.9. Impacts of Vegetation Decisions on Woodlands

As discussed under Alternative B, vegetation treatments under Alternative C would have the same impacts on woodland resources because the treatments would be the same. Alternative C would treat approximately 3,100 acres per year in pinyon-juniper and riparian areas for the lifetime of the proposed RMP, totaling approximately 46,500 acres. Compared to Alternative A, this alternative would have the same impacts as discussed under Alternative B: more beneficial in the long-term to woodland resources because vegetation treatments in pinyon-juniper and riparian woodlands would reduce fuel loads, thus reducing the risks of stand-destroying wildland fire.

4.3.20.3.3.10. Impacts of Visual Resources Decisions on Woodlands

This alternative would designate approximately 557,180 acres (31% of the PA) as VRM Class I (425,668 acres) and VRM Class II (132,001 acres), with the same impacts as discussed under Alternative A, but to a less adverse degree, because fewer acres would have harvesting restrictions under VRM classes I and II management objectives. Compared to Alternative A, 169,507 fewer acres within the PA would have potential restrictions placed on surface disturbing

woodland harvesting in order to protect visual and scenic resources and meet VRM class objectives, which would have fewer long-term, adverse impacts on opportunities for woodlands harvesting and woodland treatments to improve woodland ecological conditions and fire conditions.

4.3.20.3.3.11. Impacts of Wildlife and Fisheries Decisions on Woodlands

The impacts of this alternative on woodlands would be the same as those discussed under Alternative A because the management decisions are similar.

4.3.20.3.3.12. Impacts of Woodlands Decisions on Woodlands

Alternative C would permit woodland harvesting on 841,938 acres within designated woodland harvesting zones (encompassing approximately 47% of the Monticello PA) (Map 79). Approximately 53% of the PA (943,189 acres) would be closed to woodland harvesting. As noted in the Alternative B analysis, GAP data were used to determine that pinyon and juniper woodland species cover approximately 597,086 acres (71%) of the designated 841,938 acres within the proposed woodland zones. The impacts on woodland resources would be similar to those described under Alternative A, but to a less beneficial degree because 467,956 fewer acres (26% less of the PA) would be open to opportunities for woodland harvesting. The indirect, potentially adverse impacts on woodland resources and soils would be greatly reduced when compared to Alternative A because of additional restrictions and management prescriptions on off-road OHV travel in woodland areas: 2,311 acres would be designated as Open to cross-country OHV use (0.1% of the planning area, but in previously disturbed areas without woodland resources) and limited off-route travel would be allowed to collect harvested wood, so the indirect impacts on woodlands from cross-country OHV use would be minor.

4.3.20.3.4. ALTERNATIVE D

4.3.20.3.4.1. Impacts of Cultural Resources Decisions on Woodlands

Under this alternative, approximately 59,297 acres would be excluded from woodland harvesting within McLoyd Canyon-Moon House and Beef Basin CSMAs and in the Grand Gulch National Historic District. These exclusions would reduce the opportunities for woodland harvesting with the same impacts as described under Alternative C because the number of acres within which harvesting would be prohibited are similar. Compared to Alternative A, approximately 21,864 acres (approximately one and one-half times more acres than Alternative A) within the Monticello PA would be excluded from woodland harvesting opportunities because of management prescriptions to protect cultural resources, with reduced opportunities for harvesting.

4.3.20.3.4.2. Impacts of Fire Management Decisions on Woodlands

The impacts of fire management on woodland resources would be the same to as those described under Alternative A because the management decisions are similar.

4.3.20.3.4.3. Impacts of Minerals Decisions on Woodlands

Under Alternative D, approximately 1,383,283 acres would be available under standard stipulations and timing and controlled surface use leasing categories for oil and natural gas. The

RFD potential disturbance from oil and natural gas exploration and development would have the same impacts as those discussed under Alternative A (approximately 0.1% of the area available for minerals leasing) because the estimated development would be similar to that discussed under Alternative A: an average of 75 wells drilled during the life of the proposed RMP with approximately 721 total acres of surface disturbances and predicted geophysical exploration impacts totaling 924 acres.

4.3.20.3.4.4. Impacts of Recreation Decisions on Woodlands

Alternative D would have the same impacts on woodland resources from recreational decisions for recreational facilities and the San Juan River SRMA as discussed under Alternative B. Under this alternative, the Dark Canyon SRMA (30,820 acres) and Cedar Mesa canyons within the 375,734-acre C-SRMA would be closed to all woodland resource use, with impacts as discussed under Alternative C. Compared to Alternative A, this alternative would be less beneficial for woodland harvesting opportunities because more acreage would be excluded from harvesting.

4.3.20.3.4.5. Impacts of Riparian Decisions on Woodlands

The impacts would be the same as discussed under Alternative A because the management decisions are the same.

4.3.20.3.4.6. Impacts of Soils/Watershed Decisions on Woodlands

The impacts of this alternative on woodland resources would be the same as those discussed under Alternative B because the same erosion control strategies and similar surface disturbance mitigation would be applied. Compared to Alternative A, this alternative would apply vegetation treatments to more acres within the planning area (2,000 acres per year) with the same impacts as those discussed under Alternative B, but to a greater degree because more acres would be managed for vegetation treatments.

4.3.20.3.4.7. Impacts of Special Designations Decisions on Woodlands

ACECs. Under this alternative, approximately 22,863 acres would be closed to woodland harvesting (within the proposed Valley of the Gods ACEC) with impacts similar to those discussed under Alternative C.

Wild and Scenic Rivers. This alternative would not recommend any river segments as suitable for Wild and Scenic River designation. Accordingly, the impacts under this alternative would be beneficial in the long-term on woodland resources use because no acres would be excluded from resource use within the Monticello PA area river corridors, except for protection of riparian resources. Compared to Alternative A, this alternative would have more beneficial impacts to woodland harvesting because it would provide more opportunities for woodland resource use.

4.3.20.3.4.8. Impacts of Travel Decisions on Woodlands

Under Alternative D, no acres would be closed to OHV use, and all of the PA (1,780,807 acres or 99.9% of the planning area) would be accessible along limited to designated OHV travel routes. This alternative would have negligible impacts on woodland resources areas because there would be very few limitations or restrictions on OHV access to woodland resources in those areas open to woodland harvesting within the Monticello PA. When compared to

Alternative A, this alternative would have more beneficial impacts to woodland resource harvesting opportunities because more acres (all of the PA, with the exception of the 399,600 acres of WSAs) would be accessible to OHV use for woodland harvesting along designated OHV routes.

4.3.20.3.4.9. Impacts of Vegetation Decisions on Woodlands

Alternative D would treat approximately 4,100 acres annually in pinyon-juniper and riparian areas for the lifetime of the proposed RMP, totaling approximately 61,500 acres. The impacts on woodlands would be the same as those discussed under Alternative B because the management decisions are similar.

4.3.20.3.4.10. Impacts of Visual Resources Decisions on Woodlands

This alternative would designate 399,262 acres (22% of the planning area) as VRM Class I (390,424 acres) and VRM Class II (8,838 acres), with the same impacts as those described under Alternative A. However, compared to Alternative A, this alternative would be less adverse in the long-term on harvesting opportunities because 327,425 fewer acres within the PA would be managed under VRM I and II objectives that could limit or restrict woodland harvesting.

4.3.20.3.4.11. Impacts of Wildlife and Fisheries Decisions on Woodlands

The impacts of this alternative on woodlands would be the same as those discussed under Alternative A because the management decisions are similar.

4.3.20.3.4.12. Impacts of Woodlands Decisions on Woodlands

The impacts of woodland management decisions under this alternative would be similar to the impacts described under Alternative C because the acreages available for woodland resource harvesting within woodland zones would be the same (Map 79). Compared to Alternative A, the impacts on woodland harvesting would be less beneficial because of the fewer number of acres potentially available for woodland harvesting (47% of the PA compared to 73% under Alternative A). The indirect, potentially adverse impacts on woodland resources and soils from OHV use would also be similar to those discussed under Alternative C.

4.3.20.3.5. ALTERNATIVE E

Under Alternative E, the impacts on woodland resources would be similar to the impacts discussed under Alternative B because the management decisions are similar, except that this alternative would manage approximately 582,357 acres for the protection of land with non-WSA wilderness characteristics. Protection-related management decisions applicable to these areas would partially include VRM Class I designation, prohibitions on fire and vegetation treatments, closure to wood gathering and harvesting, and closure to OHV cross-country access. These areas would also be closed to minerals leasing and new road construction.

4.3.20.3.5.1. Impacts of Cultural Resources Decisions on Woodlands

The impacts would be the same as discussed under Alternative B because the management decisions are the same. Though approximately 8,514 acres of land with non-WSA wilderness characteristics lie within the proposed Comb Ridge CSMA, Alternative E cultural resource

management decisions would prohibit woodland harvesting within the proposed CSMA, so protection of wilderness values within this area (including prohibitions on woodland harvesting and gathering) would have no impact on woodland harvesting beyond those discussed under Alternative B. No lands with non-WSA wilderness characteristics lie within any of the other CSMAs.

4.3.20.3.5.2. Impacts of Fire Management Decisions on Woodlands

Under this alternative, no fire treatments would be allowed within the 582,357 acres that have non-WSA wilderness characteristics. Prohibiting fuel loading and prescribed fire treatments would have long-term, adverse impacts on woodland resources by maintaining wildland fire risks from untreated fuel loads in these areas, particularly within pinyon-juniper woodlands in the Cedar Mesa area, as discussed above. This alternative would prohibit more area from woodland harvesting than Alternative A, so the impacts from additional restriction and prohibitions of fire treatments within the non-WSA lands with wilderness characteristics would 1) adversely increase wildland fire risks within PA pinyon-juniper woodlands, and 2) adversely reduce the opportunities for fuel load reduction/woodland harvesting, when compared to Alternative A.

4.3.20.3.5.3. Impacts of Minerals Decisions on Woodlands

The impacts of minerals decisions would be the same as those under Alternative B, except that excluding approximately 582,357 acres from minerals exploration and development would slightly reduce the RFD of oil and gas wells within the Monticello PA. This reduction would have negligible impacts on woodland harvesting and woodland resources productivity because the expected reduction in minerals activities (and surface disturbances) would likely be several wells within the planning area. Minerals-related surface disturbances (with loss of woodland productivity and opportunities for harvesting) would be similar to those discussed under Alternative A: the RFD disturbances would be approximately 730 acres, while minerals disturbances under Alternative E would total approximately 519 acres, with geophysical exploration impacts occurring on an estimated 761 acres.

4.3.20.3.5.4. Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Woodlands

The impacts of wilderness characteristics decisions on woodland resources would be similar to the Alternative E discussion for Fire Management, Riparian, Vegetation, and Visual resources, as approximately 582,357 acres of non-WSA lands with wilderness characteristics within the Monticello PA would be protected from surface disturbances, including disturbances potentially caused by fuel load reductions, vegetation treatments, control of invasive species within riparian areas, and woodland harvesting. The impacts on woodland resources would be adverse in the long-term because these protected areas would not be managed to resolve the potentially adverse current conditions and trends pertaining to the resource (e.g., exotic species encroachment into woodlands, heightened wildland fire risks from excessive fuel loads), nor would these areas be managed to provide opportunities for woodland harvesting in upland and riparian areas. Compared to Alternative A, this alternative would have more adverse impacts on woodland resources because (1) of the greater restrictions on surface disturbances that would prevent woodland resource management to reduce wildland fire risks and treatments-related

improvements to woodland ecosystem health, and because (2) of the reduced opportunities for woodland harvesting.

4.3.20.3.5.5. Impacts of Recreation Decisions on Woodlands

The impacts of SRMA recreation management decisions would be the same as discussed under Alternative B, but to a more adverse degree on harvesting because woodland harvesting would be prohibited within all of the proposed SRMAs, including limited harvesting of riparian woodland species (cottonwood and willow) for ceremonial purposes in those areas determined to have non-WSA wilderness characteristics. Within the ERMA, approximately 416,526 acres have non-WSA wilderness characteristics, with the same adverse impacts on woodlands harvesting.

4.3.20.3.5.6. Impacts of Riparian Decisions on Woodlands

Under this alternative, the impacts of wilderness characteristics areas that lie within riparian areas on woodland resources would be similar to those discussed under the Alternative B, but to a greater adverse degree because no cottonwood and willow harvesting for ceremonial purposes would be permitted.

4.3.20.3.5.7. Impacts of Soils/Watershed Decisions on Woodlands

Soils and watershed decisions on woodland resources within non-WSA wilderness characteristics areas would prohibit tamarisk vegetation treatments. The impacts of this decision on woodland resources would be adverse in the long-term because tamarisk vegetation would continue to replace riparian woodland species and encroach on riparian woodland species habitat.

4.3.20.3.5.8. Impacts of Special Designations Decisions on Woodlands

The impacts of special designation decisions on woodlands would be the same as those discussed under Alternative B, except that approximately 109,205 acres would be protected from woodland harvesting within ACECs for preservation of non-WSA wilderness characteristics. The impacts on woodland resources would be adverse in the long-term because these areas would not be available for harvesting opportunities.

4.3.20.3.5.9. Impacts of Travel Decisions on Woodlands

Under this alternative, travel decisions for non-WSA lands with wilderness characteristics would close 970,436 acres to OHV travel, including 582,357 acres of lands with non-WSA wilderness characteristics to all motorized OHV travel (and approximately 179 miles of D-Class OHV routes within non-WSA wilderness characteristics lands), which would have long-term, adverse impacts on woodland resources within and adjacent to the non-WSA wilderness characteristics lands because of the OHV inaccessibility of these areas and the potential difficulty in accessing adjacent woodland harvesting areas. Compared to Alternative A, this alternative would have more of an adverse impact on harvesting opportunities because: (1) 761,417 more acres or 42% more of the PA would be closed to harvesting within the PA to preserve wilderness and other resource values, and (2) OHV access to adjacent woodland harvesting zones or areas would be impeded or prevented from more acreages (694,006 more acres) and travel route miles (959 more miles of D-Class OHV routes) under this alternative than Alternative A (see Section 4.3.16, Travel Management, for a detailed comparison of the travel alternatives).

4.3.20.3.5.10. Impacts of Vegetation Decisions on Woodlands

Management decisions under this alternative would be the same as Alternative B, except this alternative would impose additional prohibitions on vegetation treatments within non-WSA lands with wilderness characteristics. The impacts on the resource would be adverse in the long-term in these protected areas because no efforts would be applied within approximately 582,357 acres to restore pinyon-juniper ecosystem health through vegetation treatments. Compared to Alternative A, this alternative would have more adverse impacts on woodlands because more woodland acreage would be managed to prevent vegetation treatments-related surface disturbances that would improve the woodland ecosystem health.

4.3.20.3.5.11. Impacts of Visual Resources Decisions on Woodlands

As mentioned above, non-WSA lands with wilderness characteristics would be designated for management under VRM Class I objectives, which would prohibit or greatly restrict woodland harvesting within these areas. This would have long-term, adverse impacts on harvesting opportunities because under this alternative 998,370 acres would be designated as VRM Class I and 111,478 acres would be designated as VRM Class II. When combined, these VRM classes would encompass 1,109,848 acres or 62% of the planning area, with VRM objectives that would restrict or prohibit woodland harvesting and vegetation and fire treatments in order to preserve scenic quality within the Monticello PA and to preserve wilderness values within the non-WSA wilderness characteristics lands. Compared to Alternative A, this alternative would manage visual resources with greater degrees of restriction on harvesting and more adverse impacts on woodland resources because more area (383,161 more acres) would be impacted by VRM Class I and Class II management objectives to restrict or prohibit woodland harvesting and/or treatments.

4.3.20.3.5.12. Impacts of Wildlife and Fisheries Decisions on Woodlands

The impacts on woodland resources would be the same as those discussed under Alternative A because the management decisions are similar.

4.3.20.3.5.13. Impacts of Woodlands Decisions on Woodlands

Under this alternative, approximately 548,477 acres within the Monticello PA would be available for woodland harvesting (or 31% of the planning area) (Map 80). Of the areas available for harvesting, GAP vegetation data indicate that 73,428 acres (or 13% of available acres) would have pinyon-juniper coverage. The adverse impacts of woodland decisions under this alternative would be the same as those impacts discussed above in Section 3.20.3.5.4, Impacts of Non-WSA Lands with Wilderness Characteristics Decisions on Woodlands, for the same reasons: the approximately 582,357 acres of area with non-WSA wilderness characteristics would not be available for woodland harvesting or improvements in woodland health through vegetation treatments, and would be prohibited from fuel load treatments to reduce the adverse risks of stand-destroying wildland fire. Compared to Alternative A, this alternative would have greater adverse impacts on woodland harvesting for the reasons discussed: a smaller area (761,417 fewer acres) would be available under Alternative E for harvesting because of non-WSA lands with wilderness characteristics prohibitions and preservation of other resource values on surface disturbances that could degrade wilderness and other natural resource values.

4.3.20.4. SUMMARY OF IMPACTS

Table 2.2 of Chapter 2 contains a summary of impacts of management decisions on woodland resources.

4.3.20.5. MITIGATION MEASURES

Mitigation measures to reduce the impact to woodland resources would include:

- Prioritizing vegetation treatments in woodland areas that have been impacted through disturbances by prescribed fire, OHV access, fire suppression, woodland harvesting, and other surface disturbances to prevent exotic species growth and establishment that could otherwise inhibit or prevent re-growth of woodland species; and
- Reclaiming trails or mitigate the impacts (i.e., apply soil erosion techniques) of OHV access routes used for woodland harvesting, recreation, fire suppression, or vegetation treatments to reduce soil erosion and soil compaction that could indirectly affect woodland productivity.

4.3.20.6. UNAVOIDABLE ADVERSE IMPACTS

Treatments of woodland areas to reduce fuel loading through prescribed burning, to control woodland insect infestations or disease, and to control the spread of exotic species or other activities to improve woodland resources would have unavoidable short-term, adverse impacts on woodland resources. Long-term, unavoidable adverse impacts would be produced by minerals development within woodland areas (e.g., construction of production well pads, access roads, and infrastructure) that would impact woodland resources during the lifetime of the project.

Impacts to woodland resources from woodland harvesting would be unavoidable. However, if managed properly, this use could result in long-term benefits by preventing fuel loading and associated wildland fire.

4.3.20.7. SHORT-TERM USE VS. LONG-TERM PRODUCTIVITY

Short-term uses that could produce long-term losses of woodland resources productivity would include short-term woodland harvesting without adequate control or prevention of exotic vegetation growth and establishment in disturbed areas. This would have long-term adverse impacts on woodland productivity by preventing or slowing woodland re-growth, altering fire regimes, and/or altering the successional pattern of vegetation re-growth to favor exotic vegetation rather than woodland species.

Adequate management of woodland harvest and effective restoration of areas affected by fire or surface disturbance would ensure the long-term productivity of this resource.

4.3.20.8. IRREVERSIBLE AND IRRETRIEVABLE IMPACTS

There are no proposed management decisions that would irreversibly remove woodlands or prevent woodland re-growth. Proposed management decision impacts that would cause the irretrievable loss of woodland resources would include: woodland harvest, construction or minerals-related activities that would cause the loss of productivity until areas are rehabilitated or reclaimed; prescribed fire, vegetation, or woodland treatments that would cause the short-term loss of productivity until woodland re-growth; uncontrolled wildland fire that would cause the short-term loss of productivity until woodland re-growth; and recreation and travel-related

activities (e.g., OHV use in woodland resource areas) that could affect vegetation undergrowth and soil stability.

4.4. CUMULATIVE IMPACTS

Cumulative impacts are the effects on the environment from all past, present, and reasonably foreseeable future actions. As stated in 40 CFR 1508.7 (1997), a "cumulative impact" is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. These impacts are discussed because the quality of the human environment is the result of many actions or factors working together to produce a cumulative impact. The effect of any single action cannot be determined by considering that action in isolation. The cumulative impacts discussion that follows considers the proposed alternatives in the context of the broader human environment, within and adjacent to the Monticello PA.

Co-occurring planning projects in the region that would contribute to cumulative impacts include the Manti-La Sal National Forest, the BLM Moab RMP, the Trail of the Ancients, and Hovenweep National Monument. Also, similar management direction and resource uses would occur in the adjacent BLM Field Offices in Colorado. Activities on Utah School and Institutional Trust Land Administration lands (SITLA), private lands, and city and county use plans for surrounding communities could have cumulative impacts where land is developed adjacent to BLM lands.

4.4.1. CUMULATIVE IMPACTS ON AIR QUALITY

The cumulative impacts on air quality discussed here should be considered in addition to those discussed in previous chapters and under the related resource sections. Activities contributing to cumulative impacts to air quality include prescribed burning; construction, equipment operation, and surface-disturbing activities related to oil and gas development; and OHV activity throughout most of the MPA.

Short-term cumulative impacts from the activities proposed for all resource decisions on air quality are projected to be minimal to negligible under all alternatives. Direct and indirect short-term impacts include increases in airborne particulate and gaseous emissions from prescribed burning, construction sites, and/or OHV trails/use areas. Reasonably foreseeable future projects or actions have the potential to add to the impacts of any of the management decisions currently being considered. The primary source of air quality impacts from mineral resource development decisions in the Monticello FO is the production of oil and gas. The magnitude of air quality impact associated with these activities is directly related to the density and intensity with which extraction proceeds. It is reasonable to assume that oil and natural gas exploration and development would continue within the project area over the next 15 years. Accordingly, it is likely that potential air quality impacts from non-project and project-related mineral development in the project area will continue at the current level for the life of the plan.

Other cumulative air quality impacts would be due to continued increases in prescribed fire use for fuels management by both the BLM and other federal agencies. Additionally, human population is expected to continue to grow in and around the planning area, with attendant

increases in pollutants from vehicle emissions. However, it should be noted that fire management in the Moab Fire District will plan fire management activities in such a way that they conform with air quality regulations.

Assuming appropriate application of control measures and strict adherence to existing regulatory and permitting processes, no appreciable cumulative, short-term, adverse air-quality effects are projected specific to oil and gas development. OHVrelated air-quality impacts are expected to be very short-term and site-specific in nature and are not projected to affect the wider planning area.

4.4.2. Cumulative Impacts on Cultural Resources

Impacts associated with resource decisions from this RMP, combined with other past, present, and reasonably foreseeable actions, could produce cumulative impacts on cultural resources and resources of religious or traditional importance to Native American tribes associated with the decision area. The potential for cumulative impacts includes neighboring lands with connected cultural resources including adjoining BLM Field Offices, state and private lands within the planning area, the Uintah and Ouray Indian Reservation, and the Manti-LaSal National Forest. The same management direction and resource uses occur in both planning areas. Surface disturbance associated with consumptive uses such as oil, gas, and other minerals development, and forage use could result in cumulative impacts over a larger landscape scale than what is analyzed in this Monticello RMP. However, planning decisions related to the Moab Field Office and other federal lands are also subject to federal cultural resource laws and application of the Section 106 process of the NHPA. Further, general planning decisions of adjacent federal lands have the potential to impact cultural resources on adjacent lands within the planning area (i.e., fire fuels reduction, erosion reduction through effective vegetation management, etc.), and would generally have a positive effect on cultural resources within the planning area.

Oil and gas development and mineral exploration and development has occurred across this region in the past and would continue into the future. However, the cumulative impacts of these activities on cultural resources in the general vicinity of planning area would likely be less than the potential impacts from the continually increased recreational visitation that cultural sites in the region will be subject to. The advent of the Internet has resulted in the wide publicizing of the locations and types of cultural resources in and around the planning area. This combined with the easy and rapid access afforded by the substantial increase in OHV ownership and recreational use will continue to subject cultural resources in the region to heightened risk of damage, vandalism, and/or looting.

Many decisions related to visual resource management, special designations, and restrictions on surface disturbance have the potential to provide a net positive benefit to cultural resources within the Monticello PA. These decisions would reduce or control the frequency and extent of ground-disturbing activities that present the greatest threat to maintaining the use values of cultural resources. In general, all minerals and recreation decisions under all alternatives have the potential to increase or at least maintain current levels of adverse impacts to cultural resources. Decisions for minerals and recreation generally increase or maintain current levels of surface and subsurface disturbance, and have as an indirect impact an increase in human activity within those areas of minerals development and recreational use. Increased human activity tends to equate with increased adverse impacts on cultural resources, even if these impacts are inadvertent.

In general, implementation of the array of resource decisions under Alternative E would have the lowest degree of potential negative impact on cultural resources within the Monticello FO, and in many cases Alternative E has the highest overall benefit for cultural resources. Overall, fewer acres of land would be open for ground-disturbing activities under this alternative than under any other alternative. Although no direct correlation exists between acres of surface and subsurface disturbance and numbers of cultural resources impact, this general trend holds true. By comparison, Alternative D and Alternative A (No Action) have the potential for roughly comparable levels of potential adverse impact to cultural resources. Decisions under Alternative C would have an intermediate potential for adverse impacts. Under all alternatives, specific undertakings that could result in surface and subsurface disturbance and have the potential to impact cultural resources are subject to the Section 106 process of the NHPA, which calls for the identification of historic properties (i.e., NRHP-listed sites or sites determined eligible for listing on the Register) within the area of potential impacts and the consideration of alternatives to the planned undertaking that could avoid impacts to said properties. In the event that avoidance is not possible, mitigation of the impacts is to be considered.

4.4.3. Cumulative Impacts on Fire Management

Cumulative impacts are a combination of impacts from each alternative with the past, present, and reasonably foreseeable future actions associated with the project and surrounding area. The entire area is managed according to the Moab Fire District Fire Management Plan, which was recently revised. Based on the impetus that the federal fire management agencies are placing on implementing the Federal Wildland Fire Policy, the Healthy Forests Initiative, and the National Fire Plan, these revisions include vegetation management to decrease fuel loading and, consequently, decreased fire risk.

4.4.4. Cumulative Impacts on Health and Safety

Minerals development within surrounding areas would increase the use, generation, and transportation of hazardous materials. City and County use plans for surrounding communities could have cumulative impacts, whereby mineral resources are developed adjacent to BLM lands. State lands that are surrounded by BLM land could have impacts from inholding development.

Hazardous materials are regulated by the EPA and administrated by state agencies regardless of land status. If all applicable laws, regulations, safeguards, and procedures were followed, there would be no cumulative impacts caused by hazardous materials.

4.4.5. Cumulative Impacts on Lands and Realty

The number of land use authorizations, particularly rights-of-way and permits, is a function of demand for these uses. Additional future development of adjacent federal, state, and private lands would likely result in additional requests for and approval of land-use authorizations for facilities such as roads, utilities, and communication sites.

City and County use plans could have cumulative impacts where land is developed adjacent to BLM lands. Both the Grand and San Juan County Use Plans have no net loss of private land as a result of government agency land ownership adjustments. Even though land exchange would be the preferred means of land ownership adjustment, such a position could affect the land

ownership adjustment program by more strongly favoring land exchanges and outright disposals of public land over purchases of private land.

The designation of right-of-way avoidance and exclusion areas on BLM lands, along with similar restrictions on right-of-way development on adjacent lands, particularly National Forest lands, would have a cumulative impact of reducing routing options for right-of-way facilities such as utilities and roads. Alternative E has the most avoidance and exclusion areas, followed by Alternative B.

4.4.6. CUMULATIVE IMPACTS ON LIVESTOCK AND GRAZING

Cumulative impacts to livestock and grazing could result from activities on adjacent private lands, activities scheduled for State and Institutional Trust Land Administration lands, and administrative actions on adjacent National Forest System lands on the Ashley National Forest. These cumulative impacts have been considered as part of the direct and indirect impacts analysis, as the calculated AUMs include current and reasonably foreseeable grazing on state, private, and tribal lands.

It is likely that adjacent lands would see an increase in land uses (such as development and recreation) that may influence available resources within the Monticello PA in the future. These factors may increase the demand for BLM lands available for grazing. However, this increased demand would not be met because the number of acres available for grazing is fixed for the life of the plan. Proper grazing would ensure rangeland quality.

The following resource decisions have no foreseeable impacts on livestock grazing: air quality, human health and safety, paleontology, Special Designations (ACEC, Wild and Scenic Rivers, Wilderness), Special Status Species, Visual, and Wilderness Characteristics and Woodlands.

4.4.7. CUMULATIVE IMPACTS ON MINERALS

Past and present mineral resource development management actions that have affected the mineral resources in the Monticello FO are listed in the Mineral Potential Report and in Section 3.8 of Chapter 3. Reasonable foreseeable future mineral resource development management actions include those listed in the RFD scenario as occurring on all lands in the Monticello FO, including USFS, NPS, state, private, and tribal lands; according to the RFD, an average of 195 oil and gas wells is expected on all lands in the Monticello FO over the next 15 years. Some past, present, and reasonably foreseeable future mineral resource development includes lands administered by two or more agencies, including those already listed and the Moab, Richfield, Kanab, Hassayampa, Grand Junction, Uncompahgre, and Dolores Field Offices of the BLM (BLM 2005a; BLM 2005b). These cumulative mineral resource management actions result in beneficial impacts to mineral resource knowledge, yields, and royalties in the Monticello FO, as described in Section 4.3.7.3, Summary of Locatable RFD and Saleable RFD. By the same token, continued extraction of mineral resources, over time, reduces the finite quantities of these resources in the Monticello FO.

Past, present, and reasonable foreseeable future management actions regarding other resources would also impact mineral resource development:

- Non-discretionary management of WSAs under the IMP precludes most surface-disturbing activities. Impacts of designation of WSAs are discussed in Section 4.3.7.4.
- VRM decisions on Monticello FO lands adjacent to the other BLM lands (i.e., Moab, Richfield, Kanab, Hassayampa, Grand Junction, Uncompahgre, and Dolores planning areas) may be based in part on viewsheds looking into those other BLM lands. As consistent VRM decisions would be made across these boundaries, VRM decisions for the Moab, Richfield, Kanab, Hassayampa, Grand Junction, Uncompahgre, and Dolores planning areas would likely result in cumulative impacts to mineral resources—either beneficial if VRM III or IV, or adverse if VRM I or II.
- Wildlife habitat decisions made by the Utah Division of Wildlife Resources (e.g., crucial habitat for a given sensitive species, habitat fragmentation) have the potential to impact mineral resource development in the Monticello FO. These decisions would result in generally adverse impacts in the form of controlled surface use or timing limitation stipulations on mineral resource development activities.

Generally, resource decisions occurring on multiple-use, non-Monticello FO lands managed by state and federal agencies (e.g., SITLA, USFS, the BLM Moab Field Office) would have cumulative impacts similar in type to those on Monticello FO lands. Individual private land parcels represent a full spectrum of impacts, from full mineral resource development/use (beneficial) to resource preservation (adverse).

4.4.8. Cumulative Impacts on Non-WSAs with Wilderness Characteristics

Resource decisions from this RMP could combine with other past, present, and reasonably foreseeable future actions to produce cumulative impacts to wilderness characteristics associated with the planning area. Resource decisions for other lands adjacent to the Monticello PA could result in cumulative impacts. The same management direction and resource uses occur in all of the above planning areas. Resource management on adjacent federal lands (including USFS-administered land and NPS land), private land, and state lands would also affect wilderness characteristics in the area. USFS management would generally have a similar management focus as BLM decisions. NPS decisions would generally enhance wilderness characteristics, because its lands are managed under a preservation rather than multiple-use mandate. Surface disturbance associated with consumptive uses such as oil, gas, and other minerals development would result in cumulative impacts over a larger landscape scale than analyzed in this document. Private and state lands have a different mandate for management. Activities and management of these lands would negatively impact non-WSA lands with wilderness characteristics found on public land.

In addition to the acreage currently being managed to protect and preserve their wilderness characteristics, BLM Utah is considering management options for 2,847,156 additional acres of non-WSA lands (5.4% of Utah lands) with wilderness characteristics in six ongoing land-use planning efforts. This includes the 582,357 acres in the Monticello PA. There are other federal lands with wilderness characteristics in Utah that are currently being managed to protect those values. These are identified in Table 4.219 below.

Table 4.219. Federal Lands with Wilderness Characteristics in Utah that are Currently Being Managed to Protect Those Values

Land Administrator	Administrative Unit	Acres	Percent of Land in Utah*
BLM	Designated Wilderness	127,700	0.24
BLM	Wilderness Study Areas	3,214,740	6.12
National Park Service	Recommended Wilderness	1,467,082	2.79
U. S. Forest Service	Designated Wilderness	773,124	1.47
U. S. Forest Service	Recommended Wilderness	83,390	0.16
Total		**5,666,036**	**10.78**

*The percentage figures shown in this table are based on a total land area of 52,541,440 acres in Utah.

Oil and gas development has occurred across this region in the past and will continue at an increasing rate into the future. The combined amount of surface disturbance of these past, present, and future actions would be detrimental to areas surrounding non-WSA lands with wilderness characteristics (depending on their location).

The overall cumulative impact of activities proposed for all resource decisions on non-WSA lands with wilderness characteristics includes short-term detrimental impacts and long-term improvements to habitat. Major contributors to detrimental impacts include OHV activities throughout most of the area, surface degradation from mineral development related activities, all other surface-disturbing activities, and vegetation treatments such as sagebrush removal. Direct impacts would be due to loss of naturalness, including loss of individual plants or animals, from mineral development or other surface-disturbing activities. Indirect impacts would also occur with habitat fragmentation due to mineral development, and changes in OHV use due to increased roads or use of roads. These activities would concentrate recreation use on non-WSA lands with wilderness characteristics. The cumulative impacts of all these uses could lead to loss of naturalness in the future.

4.4.9. Cumulative Impacts on Paleontological Resources

Unauthorized activities such as OHV use, dispersed recreation, and vandalism would continue to have adverse impacts on paleontological resources under all alternatives. These impacts would be reduced under Alternative B and E and to a lesser extent under Alternative C because they provide more constraints on OHV use and dispersed recreation activities. Alternative A showed 611,310 acres open to OHV travel. All action alternatives have only a small open area (from 0-2,311 acres). There would also be impacts as a result of permitted surface-disturbing activities such as mineral development in areas containing significant paleontological resources. The potential for inadvertent adverse impacts to paleontological resources from surface-disturbing activities would be greater under Alternatives A and D. The cumulative impacts of alternatives that include surface-disturbing activities within areas containing fossils have the potential to damage this fragile, nonrenewable resource. However, existing laws, regulations, and policies provide ample opportunity to mitigate adverse impacts through avoidance or collections of

specimens and data. While it is expected that some fossils will be destroyed in the course of other legitimate uses of public lands, mitigation measures will bring consultant paleontologists to areas in the Monticello FO where no researchers are currently studying fossils. Thus fossils that would otherwise have disintegrated over time due to weathering and erosion will be collected, placed in repositories, and preserved in perpetuity.

4.4.10. CUMULATIVE IMPACTS ON RECREATION

Recreational visitation within and around the project area will likely continue to increase steadily over the long-term. Past and present actions that have had and are having impacts on recreation include mineral development, wildland fire suppression and fuels treatments, OHV travel, utility corridor development, grazing and recreational activities in riparian areas, and management within existing SRMAs and the ERMA. Recreational uses that are expected to have the greatest growth would be OHV use, cultural visitation, river running, and motorized visitation of adjacent scenic areas such as Canyonlands National Park, Monument Valley, Valley of the Gods, and Arches National Park. This increased visitation will satisfy more recreational needs but may result in a cumulative loss in the recreational experience by increasing crowding and resulting in long-term impacts to natural and cultural resources that are integral to this experience. In as much as energy development and other surface-disturbing activities increase, there will be a negative impact to recreationists. Based on the RFD for oil and gas, negative impacts are expected to be largely contained in or near existing fields.

The potential cumulative impacts on recreation from actions within the Monticello PA and adjacent and local administrative agencies are as follows:

- Oil, gas, locatable, and salable minerals exploration and development could have a long-term, cumulative effect on the recreational viewshed from surface disturbances and facilities. VRM mitigation would reduce these effects, but it is likely that the activities would remain visible from points of view within the MPA and from viewpoints within the adjacent national parks.
- Wildland fire suppression would temporarily affect recreation use in or adjacent to areas where prescribed fire or other vegetation treatments are being conducted. The long-term cumulative effects would reduce fire risks to recreation areas and facilities within the MPA and on lands under other administrative agencies. Prescribed burning would temporarily degrade air quality (and scenic quality), but with the reduced risks of wildland fire, there would be a cumulative decrease in smoke emissions.
- OHV travel management would have beneficial cumulative effects on recreational experiences and resources by reducing surface impacts to soils, cultural resources, riparian areas, and wildlife habitat by generally confining travel to designated routes within the MPA. The reduction in OHV-related surface disturbances would also cumulatively reduce the spread and establishment of exotic, invasive plant species.
- Riparian areas would be beneficially affected by cumulative actions to improve ecological conditions within these sensitive areas, which would improve recreation experiences for wildlife viewing, camping, and hiking.
- The cumulative effect on recreation resources would be enhanced in the long-term by managing existing and proposed SRMAs and the ERMA in the Monticello PA and in adjacent BLM Moab FO. The designation of SRMAs would help to reduce the conflicts

between the different recreation uses. The cumulative effect of managing the Monticello PA to respond to the expected increase in visitation, changes in recreational demand, and the wide range of recreational activities would have beneficial effects on recreation.

Cumulative impacts on recreation opportunities, setting, and experience would be greater under Alternatives A and D, as restrictions on surface development and protections afforded to natural resources within the planning area would be less intensive under these alternatives. Alternative E would provide the greatest protection to natural resources and the highest level of non-motorized recreation opportunities. There would be an intermediate amount of cumulative impacts to recreation under Alternative C.

4.4.11. Cumulative Impacts on Riparian Resources

Past and present actions within the MPA and on adjacent USFS-administered lands, state lands, and private lands that affect and have affected riparian areas include livestock grazing, recreational uses (including OHVs, non-motorized recreation, etc.), mineral exploration and development, and upstream water withdrawals and impoundments. In general, these actions have all had cumulatively adverse impacts on riparian health. Livestock grazing, recreation, and mineral-related activities have led to surface disturbance, soil compaction, removal of riparian vegetation, bank trampling, and alteration of riparian areas' physical structure. They have also resulted in the widespread introduction of invasive weeds. Water withdrawals and impoundments have limited the health and extent of riparian zones by decreasing water availability, and encouraged the introduction of invasive plants through the stabilization of formerly dynamic sediment deposits, such as bars and banks.

Reasonably foreseeable future actions that would affect riparian areas include an expansion of recreational use and ongoing mineral exploration, development, and extraction. All of these actions could have a potential adverse effect on riparian areas. Beneficial impacts would result from USFS planning efforts, which will reduce negative impacts to riparian resources on National Forest lands. Future impacts on private lands may include both positive and negative impacts as described above.

Under all alternatives, riparian resources would benefit from management for PFC in accordance with the Utah Standards for Rangeland Health and Guidelines for Grazing Management for BLM in Utah (BLM 1997). Adherence with these plans would mitigate many of the adverse impacts from past, present, and future actions. In addition, continuing closure of several allotments to grazing would continue the restoration and enhancement of riparian resources in these areas.

In terms of project contributions to cumulative impacts, Alternative C would present a level of riparian resource protection balanced between Alternatives E and D. Alternative D would favor resource development, and more surface-disturbing activities would occur than in the other action alternatives. Alternative E would favor riparian resource protection, and fewer surface-disturbing activities would occur than in other action alternatives. Alternative A (No Action) is such that many of the management guidelines are unspecified with respect to riparian and other resources. However, with respect to recreation, cross-country OHV use under Alternative A presents the greatest potential risk of adverse impacts to riparian areas and soils. All the action alternatives benefit from removing the large area open to OHV travel (611,000 acres) and making essentially all lands either limited or closed.

4.4.12. CUMULATIVE IMPACTS ON SOCIOECONOMICS

The master plans for San Juan and Grand Counties set forth a desired direction for the local economy of each county. These plans, when taken together with the allowable activities on federal lands, could cumulatively increase the economic condition of the region by increasing jobs and population.

The mission of the State of Utah Travel Council is to promote tourism throughout Utah. The Travel Council currently promotes the Monticello area as a place where visitors can explore cultural and scenic resources through hiking, biking, OHV use, and river running. Cultural visitation, OHV use, and river running have become recreational pursuits for which this portion of southwestern Utah has become well known. The visitation resulting from this marketing, combined with the nationwide increase in OHV use, when considered together with recreational activities that would occur on federal lands, could create a beneficial cumulative impact to the regional tourism industry. This potential for increased visitation and economic benefits is even more probable when one considers that the planning area is surrounded by several other well-known popular tourist destinations managed by other agencies, including Canyonlands National Park, Hovenweep National Monument, Monument Valley, and Valley of the Gods.

Mineral development outside the Monticello FO's jurisdiction, but within or near the Monticello PA, could also impact social and economic conditions. According to the BLM's RFD, the total maximum amount of wells predicted to be drilled on all lands within the planning area over the life of the RMP is 195 wells (see Table 4.1). According to the Alternative A (No Action), the maximum amount of wells projected for BLM lands is 73 (see Table 4.42). Additional development of producing oil and gas wells could bring additional tax and royalty revenue to the counties. Additional jobs may be created with the increased production.

Additional mineral development, including the potential increase in uranium mining on federal and non-BLM lands and the start up of the White Mesa Mill, will increase working mines and provide an economic benefit. A potential increase in uranium extraction throughout the MPA could have some short-term beneficial economic impact on local communities; however, uranium development is not projected to be extensive, and therefore should not adversely impact visitor experience and recreation-related revenues. Additionally, establishment of the Lisbon Valley Copper Mine could have short- and long-term beneficial impacts on local economic conditions with regard to employment and tax revenue for San Juan County. The Lisbon Valley Copper Mine is expected to employ approximately 145 people and produce more than 12,500 tons of ore per day (BLM 2004e).

4.4.13. CUMULATIVE IMPACTS ON SOIL AND WATER RESOURCES

Reasonably foreseeable actions affecting soil and water resources include reasonably foreseeable increased oil and gas development on adjacent tribal, private, and state-owned lands, as well as non-BLM federal lands located near the planning area. This development would include disturbances associated with drilling, building of access roads, and placement of pipelines. Other associated impacts include the increased need for water to support this mineral development. It is estimated that a total of 195 wells would likely be developed on non-BLM land in or adjacent to the planning area over the next 15 years. This compares with the estimated total of 73, 66, 74, and 75 wells that would be developed on BLM lands under Alternatives A, B, C, and D, respectively.

Past and present actions that affect and have affected soil and water resources include livestock grazing, recreational uses (including OHVs, non-motorized recreation, etc.), mineral exploration and development, woodland harvest, and vegetation treatments (including those for fire management on lands managed by both the state and other federal agencies).

Livestock and recreation resource uses on non-BLM lands would cause both beneficial and adverse cumulative impacts to soil resources. With respect to livestock, trampling would be adverse to soils, but proper grazing management would preserve vegetation cover, thereby reducing soil erosion. With respect to recreation, open OHV use on state and private lands would generally be adverse to soils.

Soil productivity would be primarily impacted by surface disturbance and vegetation loss associated with these activities, increasing soil erosion and loss, as well as landslides and flooding. Surface water quality would primarily be impacted by increased soil erosion, increased salinity, and sedimentation of streams. Changes in the timing and magnitude of surface water flows would also reasonably be expected depending on the magnitude of the actions.

Groundwater quality may be affected through the discharge of saline or hydrocarbon-impacted waters during drilling and development of oil and gas wells. Utilization of groundwater as a water supply to support resource development may result in decreased aquifer storage and lower water levels. Shallow alluvial aquifers may be negatively impacted due to development as well. The vertical movement of groundwater along fractures and faults induced by production of hydrocarbons and water from oil and gas wells could change salinity concentrations over a short or long period of time, depending upon structural controls and rock types. These impacts may have an effect on surface water features, such as springs and perennial flows, and may have an economic impact on domestic wells through increased pumping costs.

Under all alternatives, soils and water resources would benefit from management, in accordance with the Standards for Rangeland Health and Guidelines for Grazing Management of BLM Lands in Utah (BLM 1997). Adherence to these standards would reduce many of the adverse impacts from future actions. In general, Alternatives A and D would be the least protective of soil and water resources, result in the least beneficial impacts on soils and water resources, and have the least mitigating effect on past impacts to soils and water resources in the Monticello PA. Alternative E would be the most protective and would provide the greatest reductions of cumulative impacts by excluding the most areas from surface disturbance. Alternative C would provide an intermediate level of protection and mitigation of cumulative impacts.

However, Alternative A (No Action) would likely result in higher contributions to cumulative impacts from OHV use and camping due to the lower level of restrictions on cross-country OHV travel and dispersed camping.

Outside of BLM lands, resource decisions occurring on other lands managed by state and federal agencies (such as the USFS) would have cumulative impacts similar to the BLM. Private lands present a full spectrum, from full resource development/use (adverse) to resource preservation (beneficial).

4.4.14. Cumulative Impacts on Special Designations

Cumulative impacts to Special Designations can result from decisions on BLM lands and state lands within the designations. Adverse impacts would occur mainly from surface-disturbing

activities such as mineral development and OHV use off existing roads. Direct adverse impacts would be due to the loss of vegetation resulting in impacts to soils, wildlife habitat, and visual resources. These cumulative impacts could lead to the loss of relevant and important values for ACECs and outstanding remarkable values (ORVs) for Wild and Scenic Rivers. The potential for damage to the important resource values identified within proposed Special Designations is greatest for Alternatives A and D, least for Alternative B, and intermediate for Alternative C.

With congressional designation of a Wild and Scenic River, the BLM would continue to manage for the ORVs, classification, and free-flowing nature of the river. Congressional designation would provide management with mechanisms to maintain free-flowing values, protect or enhance water quality, protect ORVs, manage consistently with the wild, scenic, or recreational classifications, and where it is a management plan objective, to purchase property as well as promote economic development, tourism, or recreational use.

Congressional designation does not affect existing river compacts, nor does it provide federal authority to regulate non-federal lands. On navigable rivers, the bed and banks are state lands, and the federal and state governments would collaborate on matters affecting instream flow and other river resources.

The Wild and Scenic Rivers Act implies a federal reserved water right; however, it must be the minimal amount necessary for purposes of the Act, it must be adjudicated through state processes, and it would be junior to existing water rights. The amount of the federal right would vary from river to river, depending on the river's flows, the unappropriated quantities in the river, and the values for which the river is being protected. Rather than initiating efforts to secure water rights for instream flows, the BLM could develop cooperative or voluntary water-flow management strategies with other water users and the state. In some situations, the state may have already established minimum stream flows for fish protection or other purposes that may be adequate to meet the wild and scenic river needs.

Designated wild rivers would be closed to mineral location. The Federal Energy Regulatory Commission (FERC) would be prohibited from licensing the new construction of hydroelectric facilities "on or directly affecting" a designated WSR. The Wild and Scenic Rivers Act also prohibits any department or agency of the United State from assisting in the construction of any water resources project that would have a "direct and adverse" impact on the values for which the river was designated. It also precludes federal assistance to projects below/above a designated river that are determined by the administrative agency to invade the area or unreasonably diminish the scenic, recreational, and fish and wildlife values present as of the date of designation.

Please see the WSR suitability appendix for an evaluation of suitability for each river segment. A suitability finding will be made in the record of decision (ROD).

4.4.15. Cumulative Impacts on Special Status Species

Resource decisions from this RMP could combine with other past, present, and reasonably foreseeable actions to produce cumulative impacts to special status species associated with the planning area. Co-occurring planning projects in the region include the Moab Field Office BLM RMP. Resource decisions for the Moab Field Office, which is adjacent to the Monticello FO, would likely result in cumulative impacts. The same management direction and resource uses

occur in both planning areas. The Manti-La Sal National Forest management decisions would also overlap regarding several of the same resources. Surface disturbances associated with consumptive uses such as forage use as well as oil, gas, and other minerals development would result in cumulative impacts over a larger landscape scale than what is analyzed in this Monticello RMP.

Oil and gas development has occurred across this region in the past and will continue into the future. The combined amount of surface disturbance of these past, present, and future actions would be detrimental to special status plants. The spatial layout of oil and gas facilities disturbs a large proportion of vegetation when considered across the landscape. Each disturbed area for a well pad or road increases the opportunity for weed invasions, and disrupts the spatial continuity of vegetation communities. Other activities such as road construction and increased OHV use will increase access to sensitive areas upon which Special Status Species are dependent for survival. For example, increased access into prairie dog sites will increase mortality by shooters and indirectly impact all the species associated with them.

The overall cumulative impact of activities proposed for all resource decisions on special status plants is projected to be moderate to detrimental at localized areas within the short-term. Major contributors include OHV activities throughout most of the area; increased livestock grazing; habitat destruction from mineral-development-related activities; some vegetation treatments such as sagebrush removal; and possible project developments such as livestock water developments resulting in redistribution of livestock into previously unused areas that are sensitive to disturbance. Direct impacts would be due to loss of individual plants from mineral-, oil-, and gas-related development. Indirect impacts from habitat fragmentation due to development, changes in OHV use due to increased roads, and rock/fossil collection would also occur. These activities would concentrate grazing pressures and recreation use on habitat sites for some species. The cumulative impacts of all these uses could lead to lower populations of Special Status plants and animals in the future. In addition, some sensitive species may be pushed closer to listing or extinction from the cumulative degradation of BLM lands in the long-term. Beneficial impacts would be obtained with designation of proposed ACECs, because numerous plant populations would be given special management protection within the boundaries of those designated areas.

4.4.16. CUMULATIVE IMPACTS ON TRAVEL

Other past, present, and foreseeable future actions that would cumulatively impact travel opportunities within the Monticello FO planning area include changes in recreational use, both within the planning area and in adjacent federally managed areas (the Moab FO planning area, Manti-LaSal National Forest, and Canyonlands and Arches National Parks). Trends indicate that visitation and recreation are increasing within the Monticello FO planning area and on these adjacent, federally administered lands. Increasing recreational use within the region could affect travel within the Monticello FO planning, as increasing demands for recreational opportunities could require more road signs, more travel kiosks and information booths, and more restrictions on roadside parking and camping.

Transportation and road networks adjacent to BLM lands include routes shared with other federal agencies, SITLA, and private landowners. Cumulative impacts to transportation and access would occur primarily from actions that facilitate, restrict or preclude motorized access.

Management actions that restrict OHV use would limit the degree of travel opportunities and the ability to access certain portions of the planning area. The continued maintenance of federal and state highways would provide arterial connections to BLM roads. County-maintained routes that connect federal and state highways to BLM-system routes would maintain and improve access to the MPA's resources.

Past minerals activities produced many of the current travel routes within the planning area, but foreseeable minerals exploration and development (primarily oil and gas) within the planning areas and on adjacent federal lands, while creating access routes to production wells, would probably have minor impacts on travel opportunities within the planning area. New routes would generally be short spur roads that would be reclaimed once they no longer serve their intended functions.

4.4.17. Cumulative Impacts on Vegetation

Past and present actions that affect and have affected vegetation resources include livestock grazing, recreational uses (including OHVs, non-motorized recreation, etc.), mineral exploration and development, woodland harvest, and vegetation treatments (including those for fire management) on adjacent tribal, private and state-owned lands, as well as non-BLM federal lands located near the planning area. This development would include disturbances associated with drilling, building of access roads, and placement of pipelines. Other associated impacts include the increased need for water to support this mineral development. It is estimated that approximately 120 wells would likely be developed on non-BLM land in or adjacent to the planning area over the next 15 years. This compares with the estimated total of 73, 66, 74, and 75 wells that would be developed on BLM-lands under Alternatives A, B, C, and D, respectively.

Other vegetation impacts are associated with recreational uses, including hiking, equestrian, camping, and OHV use on lands managed by both the state and other federal agencies. These uses have the potential to trample or crush vegetation. Typically hiking and equestrian use occurs on existing trails. However, the increased popularity of four-wheelers in the general region poses a risk to vegetation on state and private lands where OHV use may not be restricted to existing roads and trails. Additionally, the lack of regulations on dispersed camping, combined with the increased recreational visitation that the area continues to experience, indicates that the potential for long-term vegetation disturbance from dispersed camping and associated recreation will increase.

4.4.18. Cumulative Impacts on Visual Resources

Past and present actions causing cumulative impacts on visual resources include fire suppression, minimal fuels treatments, and minimal prescribed fire treatments, resulting in a buildup of hazardous fuels materials. Minerals exploration, development, and extraction have been and are being conducted within the Monticello PA and are producing surface disturbances. The demand for recreational opportunities has been and is presently intensifying, resulting in impacts on backcountry and frontcountry recreation areas as visitors expand into previously undisturbed areas of the MPA. Other management efforts within and outside the planning area boundaries could produce long-term cumulative impacts on visual resources. Reasonably foreseeable future actions, including planning efforts to locate and develop mineral and hydrocarbon resources within the Monticello FO, could have adverse impacts on visual resources. Impacts would be

caused by surface disturbance from production, exploration, and construction of drilling and mining facilities, and OHV use.

Actions outside of the Monticello FO that could potentially affect visual resources would include mineral development on adjacent private lands, as well as the adjacent national forest and the Moab Field Office. The impacts on visual resources would be cumulatively beneficial if these administrative areas coordinate their planning efforts to preserve scenic quality along their boundaries with the Monticello FO. Conversely, if planning efforts are not coordinated, scenic quality could be adversely affected for both the Monticello FO and adjacent scenic areas such as Deadhorse Point and Canyonlands National Park.

4.4.19. Cumulative Impacts on Wildlife and Fisheries

Resource decisions from this RMP could combine with other past, present, and reasonably foreseeable actions to produce cumulative impacts to wildlife and fisheries populations associated with the planning area. Co-occurring planning projects in the region include the Moab Field BLM RMP. Resource decisions for the Moab Field Office, which is adjacent to the Monticello FO, would likely result in cumulative impacts. The same management direction and resource uses occur in both planning areas. Surface disturbance associated with consumptive uses such as forage use as well as oil, gas, and other minerals development would result in cumulative impacts over a larger landscape scale than what is analyzed in this Monticello RMP.

Oil and gas development has occurred across this region in the past and will continue into the future. Additionally, both copper and uranium mining have occurred and would continue to occur in the planning area. The combined amount of surface disturbance of these past, present, and future actions would be detrimental to vegetation. The spatial layout of oil and gas facilities disturbs a large proportion of vegetation and wildlife habitat when considered across the landscape. Each disturbed area increases the opportunity for weed invasions and disrupts the spatial continuity of vegetation communities.

4.4.20. Cumulative Impacts on Woodlands

Other management efforts within the planning area boundaries could produce long-term cumulative impacts on woodland resources. Reasonably foreseeable future actions, including planning efforts to locate and develop mineral and hydrocarbon resources within the planning area, would potentially have adverse impacts on woodland resources by removing the resource from production and use in construction and support facility areas. Most foreseeable future development within the Monticello FO consists of oil and gas well exploration and development and potential uranium mining. Actions outside of the Monticello FO that could potentially affect woodlands resources include oil and gas leasing, fire management, and timber sales in the Moab FO and Manti-La Sal National Forest. These planning efforts could have cumulative beneficial impacts on woodland resources if inter- and intra-agency coordination were included. Coordination would be useful in managing wildfires and prescribed burns. Cumulatively, these planning efforts would create greater woodland diversity and health through fire and vegetation treatments. Conversely, if planning coordination were not included in these management plans, the potential for the loss and/or degradation of woodland resources would be increased. Other resource use management actions would have adverse impacts on woodland resources by restricted resource harvesting (WSAs and Wilderness Areas, ACECs, SRMAs, and wilderness characteristics areas), and would continue to restrict resource harvesting in the future; however,

the area of harvesting restrictions would be relatively small compared to the area managed as open to opportunities for resource harvesting.

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5.0 CONSULTATION AND COORDINATION

5.1 INTRODUCTION

This chapter reviews agency consultation and coordination that occurred prior to and during preparation of this draft EIS. It also includes the list of agencies and individuals who received the draft document. The consultation process began with a Notice of Intent to prepare a draft RMP/EIS on June 4, 2003, as required under NEPA.

The BLM decision-making process is conducted in accordance with the requirements of NEPA, the regulations of the Council on Environmental Quality, and the policies and procedures used by the Department of Interior (DOI) and the BLM to implement NEPA. NEPA and its associated regulatory and policy framework require the following: 1) that all federal agencies involve interested groups of the public, as well as state and local governments, other federal agencies, and interested Tribes, in their decision-making process, 2) that a reasonable range of alternatives is developed, and 3) that all potential impacts of proposed actions and alternatives are disclosed.

The draft RMP/EIS was prepared by an interdisciplinary team of specialists from the Monticello Field Office (FO) and SWCA Environmental Consultants (SWCA), the third-party contractor hired to assist in the preparation of the RMP/EIS. The BLM and cooperating federal, state, and county agencies provided technical review and support.

This environmental document was prepared in consultation and coordination with various federal, state, and local agencies, organizations, and individuals. Agency consultation and public participation have been accomplished through a variety of formal and informal methods, including scoping meetings, workshops, correspondence (both traditional and electronic), meetings with various public agencies and interest groups, and a series of informational bulletins. This section summarizes these activities.

5.2 SPECIFIC CONSULTATION AND COORDINATION REQUIREMENTS

Federal laws require the BLM to consult with Native American Tribes, the State Historic Preservation Office, the U.S. Fish and Wildlife Service (USFWS), and the Environmental Protection Agency (EPA) during the planning/NEPA decision-making process. This section documents the specific consultation and coordination efforts undertaken by the BLM throughout the entire process of developing the draft RMP/EIS.

5.2.1 TRIBES

The BLM is mandated to consult with Native American tribes concerning the identification of their cultural values, religious beliefs, and traditional practices that may be affected by actions on federal lands. Laws and executive orders requiring consultation include the following:

- National Environmental Policy Act of 1969, as amended (NEPA)
- National Historic Preservation Act of 1966, as amended (NHPA)
- American Indian Religious Freedom Act of 1978 (AIRFA)
- Native American Graves Protection and Repatriation Act of 1990, as amended (NAGPRA)
- Federal Land Management and Policy Act of 1976 (FLMPA)

- Archaeological Resources Protection Act of 1979 (ARPA)
- Executive Order 11593 - Protection and Enhancement of the Cultural Environment
- Executive Order 12898 - Environmental Justice
- Executive Order 13007 - Indian Sacred Sites
- Executive Order 13175 - Consultation and Coordination with Indian Tribal Governments

Additionally, the BLM has developed guidelines for consultation with Native American groups. BLM Manuals 8160 (*Native American Coordination and Consultation*; BLM 2003e) and H-8160-1 (*General Procedural Guidance for Native American Consultation*; BLM 2003f) provide consultation requirements and procedural guidance to ensure that the consultation record demonstrates "that the responsible manager has made a reasonable and good faith effort to obtain and consider appropriate Native American input in decision making" (H-8160-1, 2003f:4). Recommended procedures for initiating the consultation process include project notification, preferably by certified mail, follow-up contact (e.g., telephone calls), and meetings when appropriate (H-8160-1, 2003f:15).

Native American organizations were invited to participate at all levels of the planning process for the RMP.

On August 1, 2003, the BLM's Utah State Director, Sally Wisely, notified 35 tribal entities of the intent of the BLM's Monticello FO to prepare an RMP/EIS. Further, these tribal entities were invited to consult on the entire range of cultural and natural resource issues (Table 5.1). Between November 2002 and May 2003 all 35 tribes were contacted by SWCA ethnographer Molly Molenaar to 1) ensure that the consultation letter was received by the appropriate tribal contact, and 2) determine the need for additional or future consultation for the study areas identified in the consultation letter. As part of the scoping process, meetings with tribes were arranged when requested. During these meetings an emphasis was placed on the discussion and identification of historic properties having cultural significance to tribes (commonly referred to as traditional cultural properties [TCPs]), pursuant to the consultation requirements of the National Historic Preservation Act (NHPA).

Likewise, in furtherance of the EIS scoping process and the NHPA consultation requirements, the Monticello FO participated in 12 meetings with tribal entities and no Traditional Cultural Properties were identified (Table 5.2). However, potential TCPs were identified during a records review and discussed in the AMS submitted in 2004. An ethnographic overview that is being prepared concurrently with the EIS that will also discuss potential TCPs associated with local tribes.

Tribes contacted had a range of requests and comments that are listed in Section 5.2.1.1 of this chapter. Consultation with interested tribes is ongoing. The Monticello FO mailed a draft copy of the range of alternatives to 12 tribes in December 2005. Meetings will be held with those tribes requesting to consult with the BLM on the draft alternatives.

Table 5.1. Tribes Contacted by the BLM, Utah State Director

Navajo Nation	Hopi Tribe
Navajo Utah Commission	Navajo Nation, Aneth Chapter
Navajo Nation, Dennehotso Chapter	Navajo Nation, Mexican Water Chapter
Navajo Nation, Navajo Mountain Chapter	Navajo Nation, Oljato Chapter
Navajo Nation, Red Mesa Chapter	Navajo Nation, Teec Nos Pos Chapter
Ute Mountain Ute Tribe	White Mesa Ute Council
Southern Ute Tribe	Paiute Indian Tribe of Utah
Uintah and Ouray Ute Indian Tribe	Pueblo of Santa Clara
Pueblo of Zia	Pueblo of Zuni
Pueblo of Laguna	Eastern Shoshone Tribe
Pueblo of Taos	Kaibab Paiute Tribe
San Juan Southern Paiute Council	Pueblo of Acoma
Pueblo of Cochiti	Pueblo of Isleta
Pueblo of Jemez	Pueblo of Laguna
Pueblo of Nambe	Pueblo of Picuris
Pueblo of Pojoaque	Pueblo of Sandia
Pueblo of Santa Ana	Pueblo of Tesuque
Pueblo of Santo Domingo	

Table 5.2. Meetings with Tribes

Navajo Nation Historic Preservation Office	Hopi Cultural Preservation Office
Navajo Utah Commission	Ute Mountain Ute Tribal Council
Navajo Nation, Dennehotso Chapter	Pueblo of Santa Clara
Pueblo of Zia	Pueblo of Zuni
Pueblo of Laguna, NAGPRA Committee	

5.2.1.1 Tribal Concerns, Comments, and Recommendations

Below is a summary of the tribal consultation and coordination meetings held during the RMP planning process. Only comments concerning actions in the Monticello FO are included below. Where appropriate, tribal concerns have been incorporated into the BLM's land management decision-making process.

5.2.1.1.1 Navajo

As part of the scoping process and pursuant to NHPA's consultation requirements, the Moab and Monticello FOs jointly met with the Navajo Nation and the Navajo Utah Commission in 2003.

BLM, Moab and Monticello FOs met with the Navajo Nation Tribal Historic Preservation Office and Navajo Utah Commission at their monthly meeting in Dennehotso. The Monticello FO also

met with the Navajo Nation Chapter Houses of the Dennehotso, Oljato, Red Mesa, Mexican Water, Navajo Mountain, Teec Nos Pos, and Aneth in 2004 and 2005.

5.2.1.1.1.1 Navajo Nation

Meeting held on December 9, 2003

The following requests were made and concerns were voiced:

- A concern was raised for continued consultation regarding minerals on the McCracken Extension and a claim was made for Navajo limestone on Lime Ridge.
- Concern for wildlife along the San Juan River and recreational use of the San Juan River was voiced. The need for permits from the Navajo Nation for hiking and camping on the Navajo side of the San Juan River has been discussed in the past with the Monticello FO, but there has been no action on this issue. There is a willingness on the part of the Navajo Historic Preservation Division to set up meetings with river guides, BLM employees, or any other groups to explain the Navajo view. This cultural sensitivity training can be provided by the Tribe for the cost of the lodging of the instructors.
- Wild and Scenic river determinations on the San Juan River were discussed. (This is underway and there has been consultation with the Tribe.)
- The Navajo Nation would like to see language in the RMP/EIS that the BLM would notify the Navajo Nation chapters of the availability of firewood.
- Adequate consultation with the Chapters on a variety of issues including wilderness and cultural resource management needs to take place. The Navajo understand the relationship between the major cultural attractions in the Four Corners and the economy of this area. It is understood that when tourists come to these attractions they visit adjacent areas and have a significant economic impact. For the Navajo tribe, the key to this interaction is the sensitivity visitors have when visiting cultural sites.
- The Navajo Nation takes the position that there are opportunities for co-management of some BLM lands, the San Juan River, for example. The Nation would like to see Co-management, as a management strategy, discussed in the RMP/EIS.
- The Navajo Nation would like to see flexibility in how the RMP/EIS is interpreted, as appropriate.
- The Navajo Nation is interested in the type and quantity of archaeological records the BLM is using in the RMP/EIS process.

5.2.1.1.1.2 Navajo Utah Commission

Meeting held on February 11, 2004

The Navajo Commission stated the following:

- Medicine men need to have access to BLM lands.
- BLM needs to consult with all Navajo Chapters in Utah concerning the RMP EIS.

5.2.1.1.1.3 Aneth Chapter of the Navajo Nation

Meeting Held on February 6, 2005

- Navajo should be informed when areas are given a restricted access status. Aneth members pick sumac berries and use the sumac plant to make baskets. Access to sumac picking locations has recently been denied. Access to pinyon locations has also been restricted. If companies are being allowed access to the pinyon trees for profit, the Navajo should have the same access rights.
- Navajo support WSAs especially in the protection of traditional medicinal herbs and cultural resources.
- Aneth wants to be a cooperating agency for the RMP.

5.2.1.1.1.4 Dennehotso Chapter of the Navajo Nation

Meeting held on February 13, 2004

- Existing access roads should be kept in place. Please inform the Navajo Nation and Chapters Offices in Utah when road closures are being considered. Plant and mineral resources are collected by Navajo medicine men in various areas with the BLM FO areas. They need to have access to their gathering areas. Existing roads often provide the best access to gathering areas.
- A concern was voiced about the die off of plants in existing plant gathering areas. The BLM should inform the Navajo Nation when plants in the FO areas are dying off in certain locations.

5.2.1.1.1.5 Mexican Water Chapter of the Navajo Nation

Meeting held on November 14, 2004

Mexican Water Chapter officials are in contact with the Monticello FO concerning the RMP. To date, specific comments have not been submitted to the Monticello FO.

5.2.1.1.1.6 Navajo Mountain Chapter of the Navajo Nation

Meeting held on September 26, 2004

- The wood hauling permitting process is not convenient. Traditional Medicine Men gather herbs on Bear's Ears and are told to pay for gathering herbs. This is not right! There is also a problem with woodcutting access to certain areas. Sometimes tribal members are told that they cannot access certain areas for woodcutting. The Navajo Nation and individual Chapters need to work with the BLM to solve this problem. The Medicine Men should be able to purchase a permit at the Chapter center, not have to drive to Monticello to buy the permit.
- Native Americans are not given the opportunity to raise cattle on public lands in Utah. They are shut out by preference toward other ranchers. The Navajo Mountain Chapter would like to learn more about grazing permits on public lands.
- The policies concerning traditional hunting practices in Utah are based on Anglo values-the Navajos have traditional hunting practices that are denied. The Navajo have a history of hunting in areas north of the San Juan River. These locations should be considered as traditional use areas.

- The BLM should consider ways to eradicate salt cedar and other exotic plants that are creeping into the canyons. The Navajo Nation wants to consult with land managing agencies about this problem.

5.2.1.1.1.7 Oljato Chapter of the Navajo Nation

Meeting held on March 13, 2005

- The Navajo use public lands for herb and fire wood collection and want to access and use the land and resources like they used them in the past to gather resources for various cultural practices.
- Oljato Chapter officials requested to be involved in the planning process.
- Oljato Chapter members would like a more convenient way to apply for a woodcutting permit. They currently have to drive to Monticello to get the permit.
- Oljato members have traditional names of mountains and other significant places and want to share this information with the BLM.

5.2.1.1.1.8 Red Mesa Chapter of the Navajo Nation

Meeting held on January 10, 2005

- Red Mesa Chapter officials are concerned with unregulated and unchecked OHV use in restricted areas, especially in Cedar Mesa, a sacred area to the Navajo.
- The BLM should consult with the Red Mesa Chapter on locations selected for chaining to remove existing vegetation.

5.2.1.1.1.9 Teec Nos Pos Chapter of the Navajo Nation

Meeting held on April 10, 2005

Navajo have grazing permits in areas along the San Juan River where fences have been erected to protect big horn sheep habitat. Teec Nos Pos Chapter does not want the fencing in their grazing areas.

5.2.1.1.2 UTE

As part of the scoping process and in furtherance of the NHPA's consultation requirements, the BLM Monticello and Moab FOs jointly met with the Ute Mountain Ute Tribal Council.

5.2.1.1.2.1 Ute Mountain Ute Tribe

Meeting held on August 26, 2004

The tribe represented the following concerns:

- The proposed RMP/EIS is a political document rather than a management document. Additional meetings may be required to discuss specific resource issues.
- The tribe expressed its concern that historic district designations and legislation regarding water quality, clean air, and wilderness designations eventually prevent people from using the lands. This does not always benefit the tribe. For example, areas with special designations can have too many restrictions on grazing permits. A request was made for maps that identify WSAs.

- Carl Knight was identified as a future contact for the tribe if additional meetings are required.
- Concern was expressed about "people from the East" (i.e., the U.S. Congress) often commenting on these types of plans and decisions based on their own outside agendas. How much authority does the BLM really have over this plan? If the BLM does not have the authority to consult, then the meeting should not be considered government-to-government consultation. The tribe requested a copy of the BLM tribal consultation policy, which was provided at a later date.

5.2.1.1.3 PUEBLOS

Representatives from the Moab and Monticello FOs participated in a meeting with the Hopi Cultural Preservation Office in December, 2003 as part of the scoping process in furtherance of NHPA's consultation requirements. The Moab FO manager and archaeologist represented both FOs during meetings with the Pueblos of Zuni, Laguna, Zia, and Santa Clara.

5.2.1.1.3.1 Hopi Tribe

Meeting held on December 17, 2003

The Hopi Cultural Preservation Office is interested in the Monticello management plans because of the large number of archaeological sites in the FO areas. It is unlikely, however, that the Tribe will request cooperating agency status for the plans.

The overriding issue that the Hopi Tribe has with the BLM is the reburial policy (Instructional Memorandum 98-131-2) which prohibits reburial of human remains (subject to NAGPRA) on BLM lands. The tribe is currently seeking "protection and perpetuity" for burials and reburials on BLM lands. If the policy is revoked, reburial locations will have to be chosen on public lands. ACECs and Puebloan ancestral sites could be considered for reburial locations. Other ideas discussed during the meeting were the development of a cemetery on public lands or the use of an environmental non-development zone like Grand Gulch; however, the preference is to have a reburial location that does not attract visitors. [Note: Since this consultation, BLM Instructional Memorandum 2007-002 outlined updated guidance that allows for NAGPRA materials encountered during the course of disturbance activities to be reburied as close as possible to the site, rather than being excavated. However, current guidance does not address the reburial location for the large number of NAGPRA materials housed in BLM museum collections.]

The tribe will request field visits to the Monticello FO to determine the presence or absence of Hopi TCPs in the project areas

The Tribe voiced a concern about the segmentation of federal actions. It is difficult to protect TCPs when drill pad applications are each considered as a separate application, even though the same company files dozens of applications at once. The Hopi do not like to see impacts assessed in this manner. The BLM must see the connected action during the environmental review.

The Tribe requested an ethnographic study that would include interviews with elders.

The Hopi have a cultural interest in the Colorado River but did not give any specific information during the meeting.

The Tribe requested that BLM protect areas with great site density within the Monticello FO.

5.2.1.1.3.2 Pueblo of Zuni

Meeting held on March 3, 2004

Zuni would like to develop an access agreement with the Monticello FO that would allow them to access resource gathering areas without having to go through a permit process. The development of an MOU was proposed.

A request was made for a list of plant and mineral resources on BLM lands.

The Zuni requested agreements between with the National Park Service and BLM that would allow Zuni elders to collect birds and feathers and to hunt birds on federal lands. It was reported that the rivers and associated bird habitats on Zuni tribal lands have dried up and as a result the elders have had a difficult time hunting birds and collecting feathers.

The Zuni Council would like to consult on fire management.

Zuni members would like to hunt for copper on BLM lands.

5.2.1.1.3.3 Pueblo of Laguna

Meeting held on March 3, 2004

The following comments were raised:

- Douglas fir and willows are culturally significant resources currently being used in ceremonies. Moab and Monticello FOs both have stands of fir and willow.
- The Laguna requested a field visit. Laguna is particularly interested in seeing rock art sites.
- The Laguna requested additional documentation on cultural resources.

5.2.1.1.3.4 Pueblo of Zia

Meeting held on March 3, 2004

The following comments were raised:

- The Zia requested to collect a few sacks of copper-bearing rocks.
- Research should not be conducted at burial sites. If human remains are found, Zia's position is that human remains should be reburied as close to their original burial location as possible.
- Concerns were raised for protection of rock art, but no specific requests were made. Governor Pino is in favor of any restoration programs that would reduce pot hunting and vandalism.
- BLM's reburial policy should be revoked and Zia can provide individuals to testify against this policy. [Note: Since this consultation, BLM Instructional Memorandum 2007-002 outlined updated guidance that allows for NAGPRA materials encountered during the course of disturbance activities to be reburied as close as possible to the site, rather than being excavated. However, current guidance does not address the reburial location for the large number of NAGPRA materials housed in BLM museum collections.]
- Burials should not be used for research studies.
- The Zia requested a copy of the National Policy for Land Exchange.
- The Zia requested additional cultural information on the Fremont culture.

5.2.1.1.3.5 Santa Clara

Meeting held on March 2, 2004

According to their histories, Santa Clara elders went as far as Utah for trading, hunting; there may be significant sites and artifacts, but the locations of these sites and artifacts are unknown. A field visit was requested.

Santa Clara does not feel that the repatriation of human remains should be carried out. Burials should not be moved once they are discovered.

Archaeological sites should not be flagged. This draws attention to sites.

Santa Clara would like to be notified about project treatment plans when they include archaeologically sensitive locations within a project area. There is rarely any follow-up or notice of project completion sent to consulting tribes. This needs to be corrected for future projects.

Would the BLM consider organizing a committee for human remain discoveries that would include tribal representatives?

A concern was voiced for the protection of TCPs, especially from recreationists, but no specific requests were made.

A request was made for a copy of the meeting notes.

5.2.2 Environmental Protection Agency (EPA)

The Environmental Protection Agency's air quality protocols are used as guideline standards for this document.

5.2.3 U.S. Fish and Wildlife Service

The actions proposed in this document require consultation with the U.S. Fish and Wildlife Service (USFWS). These actions have met any consultation/coordination requirements that may exist pursuant to the Fish and Wildlife Coordination Act.

The BLM and the USFWS are continuing close coordination for Endangered Species Act (ESA) compliance of all aspects of the Monticello RMP/EIS.

The USFWS and the Utah Division of Wildlife Resources (UDWR) have been consulted regarding the effects of the draft RMP/EIS on species listed pursuant to the ESA. Endangered species protections include compliance with existing ESA requirements.

In July 2004, the BLM requested assistance from the Service in identifying threatened, endangered, proposed, and candidate plant and animal species that may be located in the Monticello planning area. A letter was sent by the BLM State office to the Service initiating informal consultation for the Monticello planning efforts. The Service responded in lists of species that may be present in or may be affected by projects in the subject project area. Tables 3.53 to 3.55 present a comprehensive list of sensitive species that may be present in the project area and indicates whether they could be affected by the proposed and alternative actions. The results of this consultation have been incorporated into this RMP/EIS.

5.2.4 STATE AGENCY COORDINATION

NEPA requires that the Lead Agency (BLM) must formally consult with responsible and trustee agencies in determining whether to prepare an EIS. The primary tool for this coordination is the preparation of the draft alternatives (Chapter 2) for review by state agencies, and subsequently the preparation of the draft RMP/EIS. A draft was sent to the State of Utah Department of Natural Resources on March 21, 2007 and distributed to the following agencies: The Utah Division of Oil, Gas and Mining; Utah Division of Wildlife Resources; Utah State Parks and Recreation; Utah Geological Survey; the State Historic Preservation Office (SHPO), and the School and Institutional Trust Lands Administration (SITLA).

5.2.5 COOPERATING AGENCY INVOLVEMENT

Cooperating agency status has been extended to federal, state, and local agencies with regard to the Monticello EIS/RMP planning effort. San Juan County signed a MOU in 2001 to be cooperating agencies. The State of Utah also signed a cooperating agency agreement in 2001. Cooperating agencies that have participated in the development of the draft EIS/RMP include: U.S Fish and Wildlife Service, State of Utah, and San Juan County.

Many meetings were held with the cooperating agencies throughout the planning process, occurring between March 2003 and March 2006. EIS/RMP-related topics discussed in these meetings included socioeconomics, Wild and Scenic River suitability, ACEC relevance and determination, travel plans, and the development of alternatives.

5.2.6 OTHER AGENCY INVOLVEMENT/COORDINATION

In addition to the cooperating agencies, the Monticello FO has held meetings with and sought the input of other agencies that have land management jurisdiction within or adjacent to the planning area. Agencies include the U.S. National Park Service, and the U.S. Forest Service. Adjoining BLM field offices, including Durango, Montrose, and Moab, and the BLM Utah State Office also provided input.

5.2.7 PUBLIC PARTICIPATION

To satisfy the public participation requirements of FLPMA (43 USC 1712), the FLPMA implementing regulations (43 CFR 1610.2), NEPA (42 USC 4371), and the Council on Environmental Quality regulations at 40 CFR 1501.7, the Monticello FO initiated the scoping process. This process began with the publication of the June 2004 NOI in the Federal Register. Specifically, the scoping period lasted from June 4, 2003 and ended on January 31, 2004.

5.2.7.1 SCOPING

BLM relied on various methods for the scoping process, including 6 open houses in different communities (see Table 5.3), a mobile "comment cruiser" that visited 12 locations, a website with provision for e-mailing comments, and an invitation for the public to provide written comments via letters. In its Scoping Report, completed in July 2004, The Monticello FO provided a detailed description of the scoping process, planning issues derived from the comments, and analysis of the information received. The Scoping Report is available at the Monticello FO, or online at the Monticello RMP website (www.blm.gov/ut/st/en/prog/planning.1.html/). BLM received 6,138 comment letters with

19,437 comments identified in these letters and emails. Comments from the 6 open houses totaled 1,250, and the "comment cruiser" gathered 200 comments, resulting in a grand total of 20,887 comments. It should be noted that the Scoping Report covers both the Monticello and Moab Field Offices.

Table 5.3. Open House Location and Attendance

Meeting	Location	Attendance
Green River, UT	October 14, 2003	15
Grand Junction, CO	October 15, 2003	14
Moab, UT	October 16, 2003	53
Monticello, UT	October 21, 2003	54
Blanding, UT	October 22, 2003	87
Salt Lake City, UT	November 13, 2003	96
Total		**319**

5.2.7.2 National Mailing List

The mailing list for public scoping was developed initially from the Monticello FO mailing lists and was then supplemented throughout the planning process. Those interested in being kept up to date on the process are able to submit their home or email address either by attending a public meeting, via the project web site, or by contacting BLM staff at the Monticello FO.

5.2.7.3 Web Site

Information on the Monticello draft RMP/EIS can also be found at the Monticello RMP website at www.blm.gov/ut/st/en/prog/planning.1.html/. The purpose of the site is to provide the public with further opportunity to learn about the Monticello planning area, its resource issues, the project purpose and need, and the planning process. The website provides the public with access to all published bulletins and documents associated with planning process. The website was also used during the public scoping process as an avenue for the public to submit their issues and concerns.

5.2.7.4 . Socioeconomic Workshops

With the purpose of engaging in a collaborative decision-making process, the BLM held a workshop with the local government leaders, industry experts, and stakeholders from San Juan County that focused on the socioeconomic conditions of the region. This specialized group was assembled with the help of county officials for the purpose of promoting an open discussion about regional social and economic patterns. This meetings held on May 6, 2003 in Monticello, provided an opportunity for the BLM to understand existing conditions and to lay the framework for the analysis of socioeconomic impacts.

5.2.7.5 Draft RMP/EIS

Public participation will continue with the release of this Draft RMP/RMP. The public will be given an opportunity to review and comment on the draft plan during a specified 90–day

comment period. As with the scoping meetings held in 2003, a series of public meetings will be held to gather comments on the Draft EIS and Proposed RMP. The Final EIS will incorporate all substantive comments received during the comment period. After the Proposed RMP is issued, there is a 60-day review period for the Governor's Office, and a 30 day protest resolution period. After the release of the Final EIS, BLM will resolve protests and issue the Record of Decision.

5.3 List of Preparers

The BLM Monticello FO RMP/EIS was written and produced by a team composed of Monticello FO specialists and specialists from SWCA Environmental Consultants, an independent, third-party consulting firm. Under the guidance and direction of the BLM, the team prepared alternatives, collected data for the analysis, assessed potential affects of the alternatives, and prepared other chapters with additional comments and critiques from the cooperating agencies.

Table 5.4. List of Preparers

Name	Position	Planning Role
BLM		
Ann Marie Aubry	Hydrologist	Water Resources
Scott Berkenfield	Recreation Lead	Recreation, Wilderness
Todd Berkenfield	Assistant Planner	Wild and Scenic Rivers, ACECs, Travel Plan, Planning
Andy Boone	GIS Specialist	GIS, Travel Plan
Jeff Brown	Petroleum Engineering Technician	Hazardous Materials
Jim Carter	Archeologist	Cultural
Brad Colin, B.S.	Recreation Specialist	Recreation
Paul Curtis, B.S.	Range Management Specialist	Soils and Water, Riparian
Maxine Deeter, B.A.	Lands and Realty Specialist	Lands and Realty, Visual Resources
Ted McDougall, B.S.	Geologist	Minerals
Katie Juenger	Fuels Specialist	Fire
Nick Sandberg, B.S.	Assistant Field Office Manager	Livestock, Soils, Riparian
Summer Schulz, M.S.	Range Management Specialist	Range, Weeds, Vegetation, Woodlands
Nancy Shearin, Ph. D.	Archeologist	Cultural, Paleontology, Native American Consulting
Rob Sweeten, B.S.	Landscape Architect	Visual Resources
Gary Torres, B.S.	Planning NEPA Lead	Field Office Planner, NEPA, Minerals
Paul Leatherbury	GIS	Mapping
Jed Carling, B.S.	Rangeland Management Specialist	Livestock Grazing
Tammy Wallace, M.A.	Wildlife Biologist	Wildlife and Special Status Species

Table 5.4. List of Preparers

Name	Position	Planning Role
SWCA, Environmental Consultants		
Matt Petersen, M.S.	Principal Ecologist	NEPA Specialist/QA/QC
Deb Reber, B.S.	Natural Resource Planner	Project Manager/ QA/QC
Tonya Dombrowski, Ph.D.	Environmental Chemist	Air Quality
Sheri Ellis, M.S.	Cultural Resources Lead	Fire Management, Cultural Resources, Lands and Realty
Laura Burch Vernon M.P.A.	Environmental Planner	Socioeconomics, Hazardous Materials
Catherine Chatfield, B.A.	GIS Specialist	GIS
Jan Reed, B.A.	Ecologist	Livestock Grazing
Kristen Knippenberg, M.F.A.	Resource Specialist, Technical Editor	Minerals, editing
David Harris, M.S.	NEPA Specialist	Recreation, Travel, Visual Resource Management, Woodlands
Susan Martin, M.S.	Ecologist	Special Status Plant Species, Vegetation
Jason Green, B.S.	Environmental Planner	Recreation, Transportation
Brian Nicholson, M.S.	Ecologist	Riparian and Soils and Watershed
Mathew Seddon, Ph. D	Anthropologist	Cultural Resources
Thomas Sharp, M.S.	Ecologist	Wildlife, Special Status Species
Eric McCulley, B.S.	Geologist	Riparian, Soils/Watershed
Paul C. Murphey, Ph.D.	Principal Investigator, Paleontology	Paleontology
Greg Larson, M.S.	Resource Specialist	Fire, Lands, Soils
Elisha Wardle, B.S.	Resource Specialist	Vegetation, Special Status Species
Amanda Christensen, B.S.	Wildlife Biologist	Wildlife, Special Status Species
Molly Mollenaar, M.A.	Cultural Anthropologist	Native American Consultation
Dave Reinhart, B.A.	GIS Specialist	GIS Mapping
Janet Guinn, B.S.	Project Coordinator	Project Coordination, Formatting
Kari Chalker. M.A.	Technical Editor	General
Cynthia Manseau, B.A.	Technical Editor	General
John Pecorelli, B.S.	Technical Editor	General
Barb Bittner, B.A.	Technical Editor	General
Barb Bannon, B.A.	Technical Editor	General
Jean Ballagh, B.A.	Technical Editor	General
Russ Gatlin , B.A.	Technical Editor	General

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APPENDIX A. STIPULATIONS APPLICABLE TO OIL AND GAS LEASING AND OTHER SURFACE DISTURBING ACTIVITIES

This appendix lists, by alternative, the stipulations for oil and gas leasing referred to throughout this draft RMP and EIS. These stipulations would also apply, where appropriate and practical, to other surface disturbing activities (and occupancy) associated with land use authorizations, permits, and leases issued on BLM lands. The stipulations would not apply to activities and uses where they are contrary to laws, regulations, or specific program guidance. The intent is to maintain consistency to the extent possible, in applying stipulations to all surface disturbing activities.

Surface disturbing activities are those that result in more than negligible disturbance to public lands and resources. These activities normally involve use and/or occupancy of the surface and cause disturbance to vegetation and soils to the degree that reclamation is warranted. They include, but are not limited to, activities that require:

- The use of mechanized earth-moving equipment or truck- mounted drilling equipment;
- Off-road travel in areas designated as limited or closed to Off Highway Vehicle use;
- Placement of surface facilities such as utilities, pipelines, structures, oil and gas wells, recreation and administrative sites and range improvements;
- New road construction; and
- Use of pyrotechnics, explosives, or hazardous chemicals.

Activities generally not considered surface disturbing include, but are not limited to, livestock grazing, cross-country hiking, minimum impact filming, and vehicular travel on designated routes.

Although some activities would not require use or occupation of the surface, stipulations may still be applied if the activity requires BLM approval and it is determined that the activity may result in more than negligible resource impacts. One example is the use of low flying aircraft in crucial wildlife areas.

A.1 DESCRIPTION OF STIPULATIONS

The following Table shows resources of concern and stipulations including exceptions, modifications, and waivers by alternative. Three types of stipulations could be applied to land use authorizations: 1) no surface occupancy (NSO), 2) timing limitations (TL), and 3) controlled surface use (CSU).

Areas identified as NSO would be closed to surface disturbing activities. NSO areas would be avoidance areas for rights-of-way. An NSO stipulation cannot be applied to operations authorized under the mining laws without a withdrawal. A withdrawal is not a land use planning decision because it must be approved by the Secretary of Interior. Therefore, unless withdrawn, all public lands within the Monticello FO are open to mineral entry and subject only to TL and CSU stipulations that are consistent with rights granted under the mining laws.

Areas identified as TL would be closed to surface disturbing activities during identified time frames. This stipulation would not apply to operation and maintenance activities unless otherwise specified.

Areas identified as CSU would be open to surface disturbing activities subject to specified special operational constraints.

A.2 Exceptions, Modifications, and Waivers

The authorized office could grant an exception, waiver, or modification based on site specific information and the guidelines contained in this document:

- An exception exempts the holder of the land use authorization document from the stipulation on a one-time basis.
- A modification changes the language or provisions of a surface stipulation, either temporarily or permanently.
- A waiver permanently exempts the stipulation.

To exempt, modify, or waive a stipulation, site-specific environmental analysis would have to show that:

- The circumstances or relative resource values in the area had changed subsequent to the date of authorization;
- Less restrictive requirements could be developed to protect the resource of concern; or
- Operations could be conducted without causing unacceptable impacts.

A.3 Closed Areas

The intent of this table is to present conditions for use in areas available for surface disturbing activities. Areas identified as closed are not available for surface disturbing activities.

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
Floodplains, Riparian areas, Springs, and Public Water Reserves, San Juan River Corridor	Planning Area	CSU	X	X	X	X	No surface disturbing activities are allowed in active floodplains or within 100 meters of riparian areas along perennial streams. There would be no surface disturbance or occupancy within public water reserves. There would be no surface disturbing activities within the San Juan and Colorado River flood plains (Executive Orders 11988 & 11990). (Although oil and gas activities must also meet this requirement; a CSU lease stipulation is not necessary since this can be accomplished under the terms of the standard lease form and by using best management practices.) **Exception**: An exception could be authorized if: (a) there are no practical alternatives, (b) impacts could be fully mitigated, or (c) the action is designed to enhance the resource values. **Modification**: None **Waiver:** None **Purpose:** To protect and conserve riparian and floodplains and associated vegetation.
Visual Resources	**VRM I Areas**	NSO					No surface occupancy. **Exception:** Allow for short term use/activities**.** An exception could be granted if after an environmental analysis the authorized officer determines that the project would not impair or could benefit the relevant and important values. Small signs, kiosks, route designators, etc used to manage activities or resources that do not draw attention to the casual observer could also be allowed. **Modification:** None **Waiver:** None **Purpose:** Protection of high quality visual resources.
	Potential ACECs:						
	Butler Wash North		X			X	
	Dark Canyon		X			X	
	Valley of the Gods		X	X		X	
	Indian Creek		X	X		X	
	San Juan River		X	X		X	
	Lockhart Basin		X			X	

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
Visual Resources, cont.	**Potential Wild & Scenic Rivers (WSR)**						
	Colorado River #3		X	X		X	
	Fable Valley WSR		X			X	
	Dark Canyon WSR		X	X		X	
	San Juan River #3		X			X	
	San Juan River #5		X			X	
	WSAs		X	X	X	X	
	VRM II Areas	**CSU**					Surface disturbing activities must meet the objectives of VRM II class objectives. **Exception:** Allow for short term use/activities**.** Allow surface disturbing activities that are compatible and consistent with visitor's experience of the VRM II visual resource. The level of change to the landscape should be low; management activities may be seen, but should not attract attention of the casual observer. Any change to the landscape must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape. **Modification:** None **Waiver:** None **Purpose:** Protection of high quality visual resources.
	Scenic Highway Corridor ACEC (Old ACEC boundary)		X	X		X	
	Mesa tops for Table of the Sun			X			
	Comb Ridge area south of Hwy 95 (except for proposed campgrounds & Butler wash OHV open area)			X			
	From Indian Creek ACEC to FS boundary			X			
	Bridger Jack Mesa ACEC		X			X	
	San Juan River (portions)		X	X	X	X	
	Highway 276 to Clay Hills Crossing			X			

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
	Lavender Mesa		X	X		X	
	Shay Canyon		X	X		X	
	Colorado River #2		X	X		X	
Fragile Soils/Slopes	Planning Area	CSU	X	X		X	New surface disturbance/construction on slopes between 21-40% would require: an erosion control strategy, reclamation and site plan with a design approved by the BLM prior to construction and maintenance. **Exception:** None **Modification:** None **Waiver:** None **Purpose:** Protect soils and avoid erosion on sloped embankments.
Fragile Soils/Slopes	Planning Area	NSO	X	X		X	Surface occupancy is not allowed on slopes greater than 40%. **Exception:** If after an environmental analysis the authorized officer determines that it would cause undo or unnecessary degradation to pursue other placement alternatives; surface occupancy in the NSO may be authorized. Additionally, a plan would be submitted by the operator and approved by BLM prior to construction and maintenance. **Modification:** None **Waiver:** None **Purpose:** Protect soils, avoid erosion, and maintain public health and safety in sloped embankments.
Cultural	Potential ACEC Alkali Ridge (39,196 acres)	CSU	X	X		X	Cultural properties eligible for the National Register of Historic Places would be surrounded by an avoidance area sufficient to avoid impacts. (Although oil and gas activity must also meet this standard, a CSU lease stipulation is not necessary since this can be accomplished under the terms of the standard lease form and by using best management

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
							practices.) **Exceptions:** An exception could be granted if after an environmental analysis the authorized officer determines that the project would not impair or could benefit the relevant and important values. **Modification:** None **Waiver:** None **Purpose:** Protection and preservation of cultural resources or sites of religious significance to Native Americans that are fragile, sensitive, rare, irreplaceable, unique and/or exemplary.
Cultural	Alkali Ridge Potential ACEC (2,146 acres), National Historic Landmark	NSO	X	X	X	X	No surface occupancy is allowed within the National Historic Landmark. **Exceptions:** An exception could be granted if after an environmental analysis the authorized officer determines that the project would not impair or could benefit the relevant and important values. **Modification:** None **Waiver:** None **Purpose:** Protection and preservation of cultural resources and/or sites of religious significance to Native Americans.
Cultural	Comb Ridge CSMA 38,012 acres (and Butler Wash East of Comb Ridge)	NSO	X	X		X	Cultural properties eligible for the National Register of Historic Places would be surrounded by an avoidance area sufficient to avoid impacts. **Exceptions:** An exception could be granted if after an environmental analysis the authorized officer determines that the project would not adversely impact or could benefit cultural properties. **Modification:** None **Waiver:** None **Purpose:** Protection and preservation of cultural resources

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
							or sites of religious significance to Native Americans that are fragile, sensitive, rare, irreplaceable, unique and/or exemplary.
Cultural	Tank Bench CSMA 2,646 acres (and Butler Wash East of Comb Ridge)	NSO	X	X		X	Cultural properties eligible for the National Register of Historic Places would be surrounded by an avoidance area sufficient to avoid impacts. **Exceptions:** An exception could be granted if after an environmental analysis the authorized officer determines that the project would not adversely impact or could benefit cultural properties. **Modification:** None **Waiver:** None **Purpose:** Protection and preservation of cultural resources or sites of religious significance to Native Americans that are fragile, sensitive, rare, irreplaceable, unique and/or exemplary.
Vegetation	Potential ACEC Bridger Jack	NSO	X			X	Surface occupancy is not allowed on mesa tops. **Exceptions:** An exception could be granted if after an environmental analysis the authorized officer determines that the project would not impair or could benefit the relevant and important values. **Modification:** None **Waiver:** None **Purpose:** Protect near relict vegetation resources.
Visual Resources	Potential ACEC Butler Wash North	NSO	X			X	Surface occupancy is not allowed. **Exceptions:** An exception could be granted if after an environmental analysis the authorized officer determines that the project would not impair or could benefit the relevant and important values. Small signs, kiosks, route designators, etc used to manage activities or resources could be allowed. **Modification:** None

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
							Waiver: None **Purpose:** Protection of high quality visual resources that are fragile, sensitive, rare, irreplaceable, unique and/or exemplary.
Cultural Resources	Potential ACEC Hovenweep	CSU	X	X		X	Cultural properties eligible for the National Register of Historic Places would be surrounded by an avoidance area sufficient to avoid impacts.(Although oil and gas activity must also meet this standard, a CSU lease stipulation is not necessary since this can be accomplished under the terms of the standard lease form and by using best management practices.) **Exceptions:** An exception could be granted if after an environmental analysis the authorized officer determines that the project would not impair or could benefit the relevant and important values. **Modification:** None **Waiver:** None **Purpose:** Protection and preservation of cultural resources or sites of religious significance to Native Americans that are fragile, sensitive, rare, irreplaceable, unique and/or exemplary.
Visual Resources	Potential ACEC Indian Creek	NSO	X	X		X	Surface occupancy is not allowed. **Exceptions:** An exception could be granted if after an environmental analysis the authorized officer determines that the project would not impair or could benefit the relevant and important values. **Modification:** None **Waiver:** None **Purpose:** Protect the VRM I Class visual resources.

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
Visual Resources	Potential ACEC Lockhart Basin	NSO	X			X	Surface occupancy is not allowed **Exceptions:** None. **Modification:** None. **Waiver:** None. **Purpose:** Protect the VRM I Class visual resources in the potential ACEC.
Visual Resources	Potential ACEC Lockhart Basin	CSU		X			Projects must meet VRM III objectives. (Although oil and gas activity must also meet this standard, a CSU lease stipulation is not necessary since this can be accomplished under the terms of the standard lease form and by using best management practices.) **Exceptions:** An exception could be granted if after an environmental analysis the authorized officer determines that the project would not impair or could benefit the relevant and important values. **Modification:** None **Waiver:** None **Purpose:** Protect the VRM III Class visual resources in the potential ACEC.
Relict Vegetation & Visual Resources	Potential ACEC Lavender Mesa	NSO	X	X		X	Surface occupancy on the mesa top is not allowed. **Exceptions:** An exception could be granted for test plots and facilities necessary to study the plant communities, restoration/reclamation activities. An exception could be granted if after an environmental analysis the authorized officer determines that the project would not impair or could benefit the relevant and important values. **Modification:** None **Waiver:** None **Purpose:** Protect relict vegetation resources on the mesa tops.

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
Cultural Resources	Shay Canyon ACEC	NSO	X	X		X	Surface occupancy is not allowed. **Exceptions:** An exception could be granted if after an environmental analysis the authorized officer determines that the project would not impair or could benefit the relevant and important values. **Modification:** None **Waiver:** None **Purpose:** Protection of cultural resources or sites of religious significance to Native Americans that are fragile, sensitive, rare, irreplaceable, unique and/or exemplary.
Cultural, Riparian, Wildlife and Visual Resources	Potential ACEC San Juan River	NSO	X	X		X	No surface occupancy within the river corridor (100 meters of flood plain). **Exceptions:** An exception could be granted if the disturbance is related to recreational facilities or would not impair or could benefit the relevant and important values. **Modification:** None **Waiver:** None **Purpose:** Protect cultural, riparian, wildlife, and visual resources that are fragile, sensitive, rare, irreplaceable, unique and/or exemplary.
Visual Resources	Potential ACEC Valley of the Gods	NSO		X			Surface occupancy is not allowed. **Exceptions:** If after an environmental analysis the authorized officer determines that the project could meet VRM I objectives. **Modification:** None **Waiver:** None **Purpose:** Protect visual resources
Recreation	Planning Area	NSO	X	X	X	X	No surface disturbing activities within 200 meters of all developed recreation sites and within one quarter mile of campgrounds.

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
							Exception: An exception could be granted if the disturbance is related to recreational infrastructure support. If after an environmental assessment it is determined that the visual intrusions and noise can be mitigated so as to not adversely affect the visitor experience of the campers. **Modification:** None **Waiver:** None **Purpose:** Preserve and protect the federal investment in recreation sites and enhance visitor experiences.
Recreation	San Juan River-SRMA Alternative Size A 9,380 acres B 10,203 acres C 9,859 acres D 6,365 acres E 10,203 acres	NSO	X	X	X	X	Surface occupancy is not allowed within the San Juan River SRMA. **Exceptions:** If after an environmental analysis the authorized officer determines that the disturbance is related to or can be shown to benefit recreational experiences. **Modification:** **Waiver:** **Purpose:** Preserve and protect the federal investment in developed and potential recreation sites, and the recreational opportunities and visitors' San Juan River experience.
Wildlife – Desert Bighorn Sheep	Desert Bighorn Lambing and Rutting Areas	TL	X 453,390 ac.			X	No surface disturbing activities or occupancy are allowed from April 1 to July 15 for lambing and from October 15 to December 31 for rutting. **Exception:** The Field Manager may grant an exception after an environmental analysis the authorized officer determines that the animals are not present in the project area or the activity can be completed so as to not adversely affect the animals. Routine operation and maintenance is allowed. **Modification:** The Field Manager may modify the boundaries of the stipulation area if a portion of the area is not being used as desert bighorn lambing or rutting grounds. **Waiver:** A waiver may be granted if the habitat is determined

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
							as unsuitable for lambing and/or rutting grounds. **Purpose:** To minimize disturbance within desert bighorn lambing and rutting grounds.
Wildlife – Desert Bighorn Sheep	Desert Bighorn Lambing and Rutting Areas	TL		X 453,390 ac,			No surface disturbing activities or occupancy are allowed from April 1 to June 15 for lambing and from October 15 to December 15 for rutting. **Exception:** The Field Manager may grant an exception after an environmental analysis the authorized officer determines that the animals are not present in the project area or the activity can be completed so as to not adversely affect the animals. Routine operation and maintenance is allowed. **Modification:** The Field Manager may modify the boundaries of the stipulation area if a portion of the area is not being used as desert bighorn lambing or rutting grounds. **Waiver:** A waiver may be granted if the habitat is determined as unsuitable for lambing and/or rutting grounds. **Purpose:** To minimize disturbance within desert bighorn lambing and rutting grounds.
Wildlife – Desert Bighorn Sheep	Desert Bighorn Lambing and Rutting Areas	TL			X 299,008 ac.		No surface disturbing activities or occupancy are allowed from April 15 to May 15 for lambing and from November 1 to December 15 for rutting. **Exception:** The Field Manager may grant an exception after an environmental analysis the authorized officer determines that the animals are not present in the project area or the activity can be completed so as to not adversely affect the animals. Routine operation and maintenance is allowed. **Modification:** The Field Manager may modify the boundaries of the stipulation area if a portion of the area is not being used as desert bighorn lambing or rutting grounds. **Waiver:** A waiver may be granted if the habitat is determined as unsuitable for lambing and/or rutting grounds. **Purpose:** To minimize disturbance within desert bighorn

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
							lambing and rutting grounds.
Wildlife Resources – Mexican Spotted Owl	Dark Canyon Area (same as potential ACEC polygon)	TL		X	X		Closed for Mexican spotted owl (March 1 – August 31) and desert bighorn sheep (April 1-June 15 for lambing, and October 15 to December 15 for rutting) for balanced alternative. April 15 to May 15 for lambing and November 1 to December 15 for rutting for commodity. Projects must meet VRM III objectives. **Exceptions:** The Field manager may grant an exception on a case-by-case basis if it can be shown that legal rights would be curtailed, the animals are not present in the project location, or the activity can be conducted so as not to adversely affect the animals. An exception could be granted if after an environmental analysis the authorized officer determines that the project could benefit the relevant and important values. **Modification:** None **Waiver:** None **Purpose:** Protect the wildlife values in Dark Canyon.
Wildlife Resources – Gunnison Sage Grouse	Crucial Year Round Habitat – Within 2.0 miles of active strutting ground	CSU	X 145583 ac.			X 145583 ac.	Prohibit year–round construction of fences. Retrofit visual devices on existing fences to prevent collisions. Where opportunity exists, remove existing fences. Prohibit construction of powerlines or other tall structures year-round. CSU for oil and gas leasing activities. Not available for non-ground disturbing geophysical work from March 20 to May 15. Prohibit construction of roads year-round. Prohibit construction of wind power turbines year-round. Avoid all permitted activities from March 20 to May 15. If impracticable, no activity from sunset the evening before to three hours after sunrise the next morning. **Exception:** An exception could be authorized if: (a) there are no practical alternatives, (b) impacts could be fully mitigated, or (c) the action is designed to enhance the resource values.

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
							Modification: None **Waiver:** None **Purpose:** To protect and conserve Gunnison Sage Grouse and their habitat
Wildlife Resources – Gunnison Sage Grouse	Crucial Year Round Habitat – Within 0.6 miles of active strutting ground	CSU		X 145583 ac.			Retrofit visual devices on existing fences to prevent collisions year-round. Where opportunity exists, remove existing fences. Avoid construction of new fences as much as possible. If new fences have to be built, fit with visual devices. Prohibit construction of powerlines or other tall structures year-round. CSU for oil and gas leasing activities. Not available for non-ground disturbing geophysical work from March 20 to May 15. Prohibit construction of roads year-round. Avoid construction of wind power turbines year-round. With the exception of grazing, prohibit all permitted activities from one hour before sunrise to three hours after sunrise from March 20 to May 15. **Exception:** An exception could be authorized if: (a) there are no practical alternatives, (b) impacts could be fully mitigated, or (c) the action is designed to enhance the resource values. **Modification**: None **Waiver:** None **Purpose:** To protect and conserve Gunnison Sage Grouse and their habitat
Wildlife Resources – Gunnison Sage Grouse	Crucial Year Round Habitat – Within 0.25 miles of active strutting ground	CSU			X 70,460 ac.		Avoid construction of fences wherever possible. Avoid construction of powerlines or other tall structures. If impractical, bury powerlines or retrofit them to prevent perching by raptors. CSU for oil and gas leasing activities. Not available for non-ground disturbing geophysical work from March 20 to May 15. Prohibit maintenance and operation activities for mineral production from one hour before sunrise to three hours after sunrise from March 20 to May 15. Prohibit construction of roads year-round. Avoid

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
							construction of wind power turbines year-round. Avoid permitted activities from one hour before sunrise to three hours after sunrise from March 20 to May 15. **Exception:** An exception could be authorized if: (a) there are no practical alternatives, (b) impacts could be fully mitigated, or (c) the action is designed to enhance the resource values. **Modification**: None **Waiver:** None **Purpose:** To protect and conserve Gunnison Sage Grouse and their habitat
Wildlife – Antelope	Pronghorn Fawning Grounds	TL	X 29,363 ac.	X 29,363 ac.	X 29,363 ac.	X	Allow no surface disturbing activities from May 1 to June 15 within pronghorn fawning grounds. (Although oil and gas activity must also meet this requirement, a lease stipulation is not necessary since this can be accomplished under the terms of the standard lease form and by using best management practices.) **Exception:** The Field Manager may grant an exception after an environmental analysis the authorized officer determines that the animals are not present in the project area or the activity can be completed so as to not adversely affect the animals. Routine operation and maintenance is allowed. **Modification:** The Field Manager may modify the boundaries of the stipulation area if a portion of the area is not being used as pronghorn fawning grounds. **Waiver:** May be granted if the fawning grounds are determined to be unsuitable or unoccupied and there is no reasonable likelihood of future use of the fawning grounds. **Purpose:** To minimize stress and disturbance during critical antelope birthing time.
Wildlife – Deer	Deer Winter Range	TL	X 787,919 ac.			X	No surface disturbing activities from November 1 to May 15. **Exception:** The Field Manager may grant an exception after an environmental analysis the authorized officer determines

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
							that the animals are not present in the project area or the activity can be completed so as to not adversely affect the animals. Routine operation and maintenance is allowed. **Modification:** The Field Manager may modify the boundaries of the stipulation area if a portion of the area is not being used as deer winter range. **Waiver:** May be granted if the deer winter range are determined to be unsuitable or unoccupied and there is no reasonable likelihood of future use of the deer winter range. **Purpose:** To minimize stress and disturbance to deer during critical winter months.
Wildlife – Deer	Deer Winter Range	TL		X 370,015 ac.			No surface disturbing activities from November 15 to April 15. **Exception:** The Field Manager may grant an exception after an environmental analysis the authorized officer determines that the animals are not present in the project area or the activity can be completed so as to not adversely affect the animals. Routine operation and maintenance is allowed. **Modification:** The Field Manager may modify the boundaries of the stipulation area if a portion of the area is not being used as deer winter range. **Waiver:** May be granted if the deer winter range are determined to be unsuitable or unoccupied and there is no reasonable likelihood of future use of the deer winter range. **Purpose:** To minimize stress and disturbance to deer during critical winter months.
Wildlife – Deer	Deer Winter Range	TL			X 182,314 ac.		No surface disturbing activities from December 15 to March 31. **Exception:** The Field Manager may grant an exception after an environmental analysis the authorized officer determines that the animals are not present in the project area or the activity can be completed so as to not adversely affect the animals. Routine operation and maintenance is allowed.

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
							Modification: The Field Manager may modify the boundaries of the stipulation area if a portion of the area is not being used as deer winter range. **Waiver:** May be granted if the deer winter range are determined to be unsuitable or unoccupied and there is no reasonable likelihood of future use of the deer winter range. **Purpose:** To minimize stress and disturbance to deer during critical winter months.
Wildlife – Elk	Elk Winter Range	TL	X 191,172 ac.			X	No surface disturbing activities from November 1 to May 15. **Exception:** The Field Manager may grant an exception after an environmental analysis the authorized officer determines that the animals are not present in the project area or the activity can be completed so as to not adversely affect the animals. Routine operation and maintenance is allowed. **Modification:** The Field Manager may modify the boundaries of the stipulation area if a portion of the area is not being used as elk winter range. **Waiver:** May be granted if the deer winter range are determined to be unsuitable or unoccupied and there is no reasonable likelihood of future use of the elk winter range. **Purpose:** To minimize stress and disturbance to elk during critical winter months.
Wildlife – Elk	Elk Winter Range	TL		X 97,470 ac.			No surface disturbing activities from November 15 to April 15. **Exception:** The Field Manager may grant an exception after an environmental analysis the authorized officer determines that the animals are not present in the project area or the activity can be completed so as to not adversely affect the animals. Routine operation and maintenance is allowed. **Modification:** The Field Manager may modify the boundaries of the stipulation area if a portion of the area is not being used as elk winter range. **Waiver:** May be granted if the deer winter range are

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
							determined to be unsuitable or unoccupied and there is no reasonable likelihood of future use of the elk winter range. **Purpose:** To minimize stress and disturbance to elk during critical winter months.
Wildlife – Elk	Elk Winter Range	TL			X 62,684 ac.		No surface disturbing activities from December 15 to March 31. **Exception:** The Field Manager may grant an exception after an environmental analysis the authorized officer determines that the animals are not present in the project area or the activity can be completed so as to not adversely affect the animals. Routine operation and maintenance is allowed. **Modification:** The Field Manager may modify the boundaries of the stipulation area if a portion of the area is not being used as elk winter range. **Waiver:** May be granted if the deer winter range are determined to be unsuitable or unoccupied and there is no reasonable likelihood of future use of the elk winter range. **Purpose:** To minimize stress and disturbance to elk during critical winter months.
Special Status Species - Mexican Spotted Owl (MSO)	MSO Habitat and Nest Sites 121,686 acres	CSU/TL	X	X	X	X	In areas that contain suitable habitat for MSO or designated Critical Habitat, actions would be avoided or restricted that may cause stress and disturbance during nesting and rearing of their young. Appropriate measures would depend on whether the action is temporary or permanent and whether it occurs within or outside the owl nesting season. A temporary action is completed prior to the following breeding season leaving no permanent structures and resulting in no permanent habitat loss. A permanent action continues for more than one breeding season and/or causes a loss of owl habitat or displaces owls through disturbances, i.e., creation of a permanent structure. Current avoidance and

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
							minimization measures include the following: Surveys will be required prior to implementation of the proposed action. All surveys must be conducted by qualified individual(s) acceptable to the BLM. Assess habitat suitability for both nesting and foraging using accepted habitat models in conjunction with field reviews. Apply the conservation measures below if project activities occur within 0.5 mile of suitable owl habitat. Determine potential effects of actions to owls and their habitat. Document type of activity, acreage and location of direct habitat impacts, type and extent of indirect impacts relative to location of suitable owl habitat. Document if action is temporary or permanent. Activities may require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated, and, if necessary, Section 7 consultation reinitiated. Any activity that includes water production should be managed to ensure maintenance of enhancement of riparian habitat. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in canyon habitat suitable for MSO nesting. For all temporary actions that may impact owls or suitable habitat: a. If the action occurs entirely outside of the owl breeding season from **March 1 through August 31**, and leaves no permanent structure or permanent habitat disturbance, the action can proceed without an occupancy survey. b. If the action will occur during a breeding season, a

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
							survey for owls is required prior to commencing the activity. If owls are found, the activity should be delayed until outside of the breeding season. c. Rehabilitate access routes created by the project through such means as raking out scars, re-vegetation, gating access points, etc. For all permanent actions that may impact owls or suitable habitat: a. Survey two consecutive years for owls according to accepted protocol prior to commencing activities. b. If owls are found, no disturbing actions will occur within 0.5 mile of an identified site. If nest site is unknown, no activity will occur within the designated current and historic Protected Activity Center (PAC). c. Avoid permanent structures within 0.5 mile of suitable habitat unless surveyed and not occupied. d. Reduce noise emissions (e.g., use hospital-grade mufflers) to 45 dBA at 0.5 mile from suitable habitat, including canyon rims. Placement of permanent noise-generating facilities should be contingent upon a noise analysis to ensure noise does not encroach upon a 0.5 mile buffer for suitable habitat, including canyon rims. e. Limit disturbances to and within suitable habitat by staying on designated and/or approved routes. f. Limit new access routes created by the project. Modifications to the Surface Use Plan of Operations may be required in order to protect the MSO and/or habitat in accordance with Section 6 of the lease terms, the Endangered Species Act, and the regulations at 43 CFR 3101.1-2. **Purpose:** To protect MSO habitat. **Exception:** An exception may be granted by the Field

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
							Manager if authorization is obtained from USFWS (through applicable provisions of the ESA). The Field Manager may also grant an exception if an environmental analysis indicates that the nature or the conduct of the actions would not impair the primary constituent element determined necessary for the survival and recovery of the MSO and USFWS concurs with this determination. **Modification:** The Field Manager may modify the boundaries of the stipulation area if an environmental analysis indicates and USFWS (through applicable provisions of the ESA) determines a portion of the area is not being used as Critical Habitat. **Waiver:** A waiver may be granted if the MSO is de-listed and the Critical Habitat is determined by USFWS as not necessary for the survival and recovery of the MSO.
Special Status Species - Bald Eagles	Nest sites and winter roost areas within habitat for Bald Eagles 143,421 acres	CSU/TL	X	X	X	X	In areas that contain habitat for the bald eagle, actions would be avoided or restricted that may cause stress and disturbance during nesting and rearing of their young. Appropriate measures will depend on whether the action is temporary or permanent, and whether it occurs within or outside the bald eagle breeding or roosting season. A temporary action is completed prior to the following breeding or roosting season leaving no permanent structures and resulting in no permanent habitat loss. A permanent action continues for more than one breeding or roosting season and/or causes a loss of eagle habitat or displaces eagles through disturbances, i.e., creation of a permanent structure. Current avoidance and minimization measures include the following: 1. Surveys would be required prior to operations unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individual(s), and be conducted according to

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
							protocol. 2. Lease activities would require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures would be evaluated and, if necessary, Section 7 consultation reinitiated. 3. Water production would be managed to ensure maintenance or enhancement of riparian habitat. 4. Temporary activities within 1.0 mile of nest sites would not occur during the breeding season of **January 1 to August 31**, unless the area has been surveyed according to protocol and determined to be unoccupied. 5. Temporary activities within O.5 miles of winter roost areas, e.g., cottonwood galleries, would not occur during the winter roost season of **November 1 to March 31**, unless the area has been surveyed according to protocol and determined to be unoccupied. 6. No permanent infrastructure would be placed within 1.0 mile of nest sites. 7. No permanent infrastructure would be placed within 0.5 miles of winter roost areas. 8. Remove big game carrion to 100 feet from on lease roadways occurring within bald eagle foraging range. 9. Avoid loss or disturbance to large cottonwood gallery riparian habitats. 10. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in suitable habitat. Utilize direction drilling to avoid direct impacts to large cottonwood gallery riparian habitats. Ensure that such direction drilling does not intercept or degrade alluvial aquifers.

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
							11. All areas of surface disturbance within riparian areas and/or adjacent uplands should be re-vegetated with native species. Additional measures may also be employed to avoid or minimize effects to the species between the lease stage and lease development stage. These additional measures would be developed and implemented in consultation with the USFWS to ensure continued compliance with the Endangered Species Act. **Purpose:** To protect bald eagle habitat. **Exception:** An exception may be granted by the Field Manager if authorization is obtained from USFWS (through applicable provisions of the ESA). The Field Manager may also grant an exception if an environmental analysis indicates that the nature of the conduct of the actions, as proposed or conditioned, would not impair the primary constituent element determined necessary for the survival and recovery of the Bald Eagles and USFWS concurs with this determination. **Modification:** The Field Manager may modify the boundaries of the stipulation area if an environmental analysis indicates, and USFWS (through applicable provisions of the ESA) determines that a portion of the area is not being used as Bald Eagle nesting territories. **Waiver:** May be granted if Bald Eagles are de-listed and if USFWS determines it is not necessary to protect nesting territories according to the Endangered Species Act and The Bald Eagle Protection Act or if there is no reasonable likelihood of site occupancy over a minimum 10 year period.
Special Status Species – Southwestern Willow	Southwestern Willow Flycatcher Habitat	CSU/TL	X	X	X	X	In areas that contain riparian habitat within the range for the Southwestern willow flycatcher, actions would be avoided or restricted that may cause stress and disturbance during nesting and rearing of their young. Appropriate measures will depend on whether the action is temporary or permanent,

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
Flycatcher							and whether it occurs within or outside the nesting season. A temporary action is completed prior to the following breeding season leaving no permanent structures and resulting in no permanent habitat loss. A permanent action continues for more than one breeding season and/or causes a loss of habitat or displaces flycatchers through disturbances, i.e., creation of a permanent structure. Current avoidance and minimization measures include the following: 1. Surveys would be required prior to operations unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individual(s) and be conducted according to protocol. 2. Activities would require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures would be evaluated and, if necessary, Section 7 consultation reinitiated. 3. Water production would be managed to ensure maintenance or enhancement of riparian habitat. 4. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in suitable riparian habitat. Ensure that such directional drilling does not intercept or degrade alluvial aquifers. 5. Activities would maintain a 300 feet buffer from suitable riparian habitat year long. 6. Activities within 0.25 mile of occupied breeding habitat would not occur during the breeding season of **May 1 to August 15**. 7. Ensure that water extraction or disposal practices do not result in change of hydrologic regime that would result in loss or degradation of riparian habitat.

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
							8. Re-vegetate with native species all areas of surface disturbance within riparian areas and/or adjacent land. Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the USFWS between the lease sale stage and lease development stage to ensure continued compliance with the ESA. **Purpose:** To protect Southwestern willow flycatcher habitat. **Exception:** An exception may be granted by the Field Manager if authorization is obtained from USFWS (through applicable provisions of the ESA). The Field Manager may also grant an exception if an environmental analysis indicates that the nature of the conduct of the actions, as proposed or conditioned, would not impair the primary constituent element determined necessary for the survival and recovery of the southwestern willow flycatcher and USFWS concurs with this determination. **Modification:** The Field Manager may modify the boundaries of the stipulation area if an environmental analysis indicates, and USFWS (through applicable provisions of the ESA) determines that a portion of the area is not being used as southwestern willow flycatcher habitat. **Waiver:** May be granted if the southwestern willow flycatcher is de-listed and if USFWS determines it is not necessary for the survival and recovery of the southwestern willow flycatcher.
Special Status Species – Critical Habitat of the Endangered Colorado River	Colorado River, Green River, Colorado River and Dolores River Confluence, and all associated back waters	NSO	X	X	X	X	Surface disturbing activities within the 100 year floodplain of the Colorado River, Green River, and at the Dolores/Colorado River confluence would not be allowed. Other avoidance and minimization measures include: • Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All surveys must be conducted

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
Fishes	48,513 acres						by qualified individuals. • Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated. • Water production will be managed to ensure maintenance or enhancement of riparian habitat. • Avoid loss or disturbance of riparian habitats. • Conduct watershed analysis for leases in designated critical habitat and overlapping major tributaries in order to determine toxicity risk from permanent facilities • Implement the Utah Oil and Gas Pipeline Crossing Guidance. • In areas adjacent to 100 year floodplains, particularly in systems prone to flash floods, analyze the risk for flash floods to impact facilities, and use closed loop drilling, and pipeline burial or suspension according to the Utah Oil and Gas Pipeline Crossing Guidance, to minimize the potential for equipment damage and resulting leaks or spills. **Purpose:** To protect critical habitat of the endangered Colorado River fishes. **Exception:** An exception may be granted by the Field Manager if: 1) There is no practical alternative, and 2) the development would enhance riparian/aquatic values. This exception would require consultation with the USFWS. The Field Manager may also grant an exception if an environmental analysis indicates that the nature or the conduct of the actions, as proposed or conditioned, would not impair the primary constituent element determined necessary for the survival and recovery of the Endangered Colorado River , fishes.

Table A.1 Areas Closed to Surface Disturbing Activities

Resource of Concern	Applicable Area	Stipulation Code	Management Alternative				Stipulation Description
			B	C	D	E	
							Modification: The Field Manager may modify the boundaries of the stipulation area if an environmental analysis indicates, and USFWS (through applicable provisions of the ESA) determines a portion of the area is not being used as Critical Habitat. **Waiver:** A waiver may be granted if the Endangered Colorado River Fishes are de-listed and the Critical Habitat is determined by USFWS as not necessary for the survival and recovery of the Endangered Colorado River fishes.

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APPENDIX B. FIRE MANAGEMENT

B.1 DESIRED WILDLAND FIRE CONDITION AND CONDITION CLASS

Major Vegetation Group (% in Planning Area)	DWFC and Actions Needed to Meet DWFC
Salt Desert Scrub (29%)	The DWFC, both outside and inside the WUI, is native, open salt desert scrub vegetation with little to no invasive species cover. Fire would be mostly excluded from these vegetation types. Due to the historical lack of surface fuels, the historical fire return interval is extremely infrequent (FEIS 2004). • Due to the historical lack of fire and current potential for cheatgrass invasion, do not allow wildland fire to burn into salt desert scrub vegetation types. Wildland fire is not desired due to high potential for cheatgrass invasion following wildfire and loss of native salt desert scrub communities. • Treat salt desert scrub types using a combination of mechanical, chemical, seeding and biological treatments to reduce cheatgrass cover and restore native communities. Prescribed fire may be used in conjunction with seeding when part of a cheatgrass control objective (Pellant 2002). Due to the high incidence of cheatgrass in this vegetation type, consider seeding following any surface-disturbing activity. • Following wildland fire, aggressively seed to reduce potential for cheatgrass and other noxious weed invasion.
Pinyon and Juniper Woodland (26%)	Where pinyon and juniper occurred historically, the DWFC both outside and inside the WUI, is open stands of pinyon and juniper with native grass and shrub understory (Miller and Wigand 1994, FEIS 2004). Where pinyon and juniper did not occur historically, the DWFC is the native shrub, grass and forest communities that the pinyon and juniper have invaded. The historical role of fire (estimated 15–50 year fire return interval) prevented encroachment of pinyon and juniper into other vegetation communities (Heyerdahl et al. 2004, Miller and Tausch 2001, Bradley et al. 1992, Romme et al. 2002). Most pinyon and juniper encroachment has occurred in the past 100 years (Miller and Wigand 1994). Follow treatments with seeding in stands that lack native understory vegetation (FEIS 2004). Avoid treatments in old-growth (i.e., pre-settlement stands) pinyon and juniper. Historical occurrence of pinyon and juniper is difficult to map, but pre-settlement trees are generally located in shallow, rocky soils and tend to have a unique growth form characterized by rounded, spreading canopies; large basal branches; large irregular trunks; and furrowed fibrous bark (Miller and Rose 1999). Historic fire return intervals in these protected sites are greater than 100 years (Romme et al. 2002). • When possible, allow wildland fire to play its natural role that mimics the historical fire-return interval and severity in stands that have some cover of native understory vegetation. Due to the high risk of losing key ecosystem components in stands with extremely depauperate native understory, avoid wildland fires in these areas. Prescribed fires should be applied to pinyon and juniper communities when native surface fuels will carry fire and when there is low risk of invasive species.

Major Vegetation Group (% in Planning Area)	DWFC and Actions Needed to Meet DWFC
	• Prescribed fire should be used to approximate historical fire return intervals and promote recovery of the pre-settlement vegetation cover types. Remove most young (<100 years old) pinyon and juniper trees through fire or mechanical treatments (Brockway et al. 2002). In the WUI, construct fuel breaks between BLM and private land or other values at risk. • Following wildfire in areas lacking native understory, aggressively seed to reduce invasive species establishment and to restore native communities.
Sagebrush (18%)	The DWFC, both outside and inside the WUI, is healthy sagebrush defined as diverse age classes with an understory of native grasses and forbs (Paige and Ritter 1999). Research suggests that stand-replacement fires burned every 7–110 years depending on the particular sagebrush species and its associated habitat (Miller 2002, Brown 2000, FEIS 2004). Fire management actions in sagebrush must be carefully balanced between invasive species concerns, wildlife habitat and the need to restore fire. • When possible, allow fire to play its natural role, which mimics the historical fire-return interval and severity in lands that have a low potential for cheatgrass invasion. Areas with low potential for cheatgrass invasion include higher elevation sites and/or sites that have very low incidence of cheatgrass pre-fire. • Treat dense sagebrush (>30%) (Winward 1991) with fire, mechanical, seeding or chemical treatments to reduce sagebrush canopy cover and improve native grass and forb density and cover; an additional objective in treating sagebrush is to remove encroaching pinyon and juniper trees (Miller and Tausch 2001). In the WUI, construct fuel breaks between BLM and private land (or other values at risk) in dense stands of sagebrush. • Following wildfire in lands lacking native understory vegetation, aggressively seed to promote native understory grasses and forbs and reduce invasion of cheatgrass and noxious weeds. Consider including sagebrush in seeding mixes or planting sagebrush seedlings in high-value wildlife areas following large, high-severity wildfires when natural seed sources would be lacking.
Grassland (12%)	Where native grasslands occurred historically, the DWFC outside and inside the WUI is native grass and forb communities. Native grasslands have been lost to pinyon and juniper encroachment, cheatgrass invasion and non-native plant seedings (e.g., crested wheatgrass, perennial ryegrass, etc.). Where non-native grasslands occur, the DWFC is the restoration of the native grassland or shrub community. The historical role of fire in Utah's grasslands was similar to pinyon and juniper and sagebrush community types with fires every 15–50 years (Paysen et al. 2000). • When possible, allow fire to play its natural role, which mimics the historical fire-return interval and severity. • Treat native grasslands with fire, mechanical or chemical treatments to reduce encroaching trees (mainly juniper), shrubs

Major Vegetation Group (% in Planning Area)	DWFC and Actions Needed to Meet DWFC
	and invasive plants. Fire treatments alone should be avoided where there is potential for cheatgrass invasion (areas below 7000 feet that have adjacent cheatgrass populations) (Pellant 2002). In the WUI, consider green stripping between BLM and private lands and other values at risk (Harrison et al. 2002). • Following wildfire in lands lacking native grasses, aggressively seed to reduce potential for cheatgrass and other invasive weeds.
Blackbrush (6%)	The DWFC, both outside and inside the WUI, is composed of dense-to scattered shrubs and dense-to-open native grasses. Evidence suggests Utah's blackbrush communities fail to re-establish following fire (FEIS 2004). • Wildland fire should be avoided in blackbrush communities due to invasive species concerns, historical lack of fire and poor regeneration of blackbrush following fire (Callison et al. 1985). • There is little research on non-fire treatments in blackbrush. Any treatments should be of relatively small size and closely monitored. In the WUI, consider fuels breaks between dense blackbrush stands on BLM land and private land. • Following wildfire, aggressively seed to reduce potential for invasion of cheatgrass and noxious weeds.
Mountain Shrub (2%)	The DWFC outside of the WUI is stands with patches of differing age classes. In the WUI, the DWFC is greatly reduced vegetation density or a conversion to less-flammable vegetation, between BLM and private lands or other values at risk. • When possible, allow fire to play its natural role, which mimics the historical fire-return interval and severity. • Treat large expanses of even-aged, dense, homogenous stands to result in patches of diverse age classes [see Rondeau (2001) for patch size guidance]. To achieve greater habitat diversity and decreased potential for large-scale high-severity fire, reduce invasion of pinyon and juniper and reduce the average age of stands through fire, mechanical or biological (i.e., grazing goats) treatments. In the WUI, consider aggressive vegetation manipulation to create fire breaks in highly flammable shrub types (e.g., Gambel's oak) when there are values at risk. • Since most of these species sprout following wildfire, consider seeding only to reduce potential for invasive weeds.
Mixed Conifer (<1%)	The DWFC outside the WUI is landscapes with a mosaic of age classes (Arno 2000). In the WUI, the DWFC is reduced canopy density and reduced ladder fuels between BLM and private lands and other values at risk. • When possible, allow fire to play its natural role, which mimics the historical fire-return interval and severity in stands with low to moderate fuel loading. In dense stands with high fuel loading, consider mechanical treatments prior to re-introducing fire. • Treat areas to result in a landscape of diverse age classes while retaining patches of large old trees. In the WUI, remove ladder fuels and create shaded fuel breaks between BLM and private land when values are at risk.

Major Vegetation Group (% in Planning Area)	DWFC and Actions Needed to Meet DWFC
	• Consider tree planting following wildland fire to restore or rehabilitate the forest resource to promote forest regeneration.
Ponderosa Pine (<1%)	The DWFC, both outside and in the WUI, is open stands with a native grass and forb understory. • When possible, allow fire to play its natural role, which mimics the historical fire-return interval and severity. Restore fire (natural or prescribed fire) to stands with open to moderately-dense canopies and with native understory. • Consider mechanical treatments in dense stands until they reach a lower FRCC before restoring fire. Reduce juniper encroachment through fire (preferred when fuels conditions allow) or mechanical treatments. In the WUI, remove ladder fuels and create fuel breaks between BLM and private land and other values at risk. • Following wildfires, consider seeding to reduce invasive weeds and planting ponderosa pine seedlings for forest restoration and rehabilitation.
Creosote Bursage (<1%)	The DWFC is for fire to be mostly excluded from these vegetation types. Historically, fire seldom to rarely occurs due to the lack of surface fuels in these communities (FEIS 2004). • Do not allow fire to burn into these vegetation types since fire rarely occurred and the potential for cheatgrass invasion is high. • Treat creosote and bursage types using mechanical, chemical or biological treatments to reduce annual grass cover. • Following wildfire, aggressively seed to reduce potential for annual grasses and other invasive weeds.
Riparian Wetland (<1%)	The DWFC, both outside and inside the WUI, are riparian and wetland areas with the appropriate composition of native species (e.g., reduction of tamarisk and other invasive species). • When possible, allow fire to play its natural role, mimicking the historical fire-return interval and intensity. Allow low to moderate severity fire to burn into riparian and wetland areas when natural ignitions are managed as wildland fire use. • Restore native riparian and wetland species through fire and mechanical treatments. Reduce flammable invasive species along riparian corridors (e.g., tamarisk) through mechanical, chemical, biological and fire treatments. For prescribed fire, allow low intensity fire to back into riparian and wetland areas through ignition outside of these areas. Mechanical treatment as the initial treatment would be emphasized where there is a moderate to high potential for riparian and wetland to be burned to a high severity. • Consider active restoration options when native riparian and wetland communities are unlikely to recover with passive restoration (due to invasive species, stream bank erosion, etc).

Major Vegetation Group (% in Planning Area)	DWFC and Actions Needed to Meet DWFC
Aspen (<1%)	The DWFC, both outside and inside the WUI, is healthy clones with diverse age classes represented and ample regeneration. • When possible, allow fire to play its natural role that mimics the historical fire-return interval and severity since aspen readily sprouts following fire. • Treat aspen stands with fire or mechanical treatments to reduce encroaching junipers and conifers and to stimulate sprouting. If treated aspen stands are small, consider excluding big game and livestock until the regeneration can withstand grazing. In the WUI, consider increasing aspen cover if possible to create a shaded fuel break between private land (and other high value areas) and the more flammable conifer trees on BLM land. • Following wildfire, most aspen stands would need little stabilization, except soil stabilization on steep slopes. However, burned areas may need to be fenced to exclude wildlife and livestock until the regeneration can withstand grazing.

B.2 Fire Management Resource Protection Measures

Resource Protection Measures (RPM) and Applicable Fire Management Practices

RPM CODE	SUP: Wildfire Suppression RX: Prescribed Fire ESR: Emergency Stabilization and Rehabilitation WFU: Wildland fire use for resource benefit NF: Non-fire fuel treatments
NATURAL, BIOLOGICAL AND CULTURAL RESOURCES	
Air	
A-1	Evaluate weather conditions, including wind speed and atmospheric stability, to predict impacts from smoke from prescribed fires and wildland fire use. Coordinate with Utah Department of Environmental Quality for prescribed fires and wildland fire use. (RX, WFU)
A-2	When using chemical fuels reduction methods, follow all label requirements for herbicide application. (NF)
Soil and Water	
SW-1	Avoid heavy equipment use on highly erosive soils (soils with low soil loss tolerance), wet or boggy soils and slopes greater than 30%, unless otherwise analyzed and allowed under appropriate NEPA evaluation with implementation of additional erosion control and other soil protection mitigation measures. (SUP, WFU, RX, NF, ESR)
SW-2	There may be situations where high intensity fire will occur on sensitive and erosive soil types during wildland fire, wildland fire use or prescribed fire. If significant areas of soil show evidence of high severity fire, evaluate area for soil erosion potential and downstream values at risk and implement appropriate or necessary soil stabilization actions such as mulching or seeding to avoid excessive wind and water erosion. (SUP, WFU, RX)

Resource Protection Measures (RPM) and Applicable Fire Management Practices

RPM CODE	SUP: Wildfire Suppression RX: Prescribed Fire ESR: Emergency Stabilization and Rehabilitation WFU: Wildland fire use for resource benefit NF: Non-fire fuel treatments
SW-3	Complete necessary rehabilitation on firelines or other areas of direct soil disturbance, including but not limited to waterbarring firelines, covering and mulching firelines with slash, tilling and/or subsoiling compacted areas, scarification of vehicle tracks, OHV closures, seeding and/or mulching for erosion protection. (SUP, WFU, RX)
SW-4	When using mechanical fuels reduction treatments, limit tractor and heavy equipment use to periods of low soil moisture to reduce the risk of soil compaction. If this is not practical, evaluate sites, post treatment and if necessary, implement appropriate remediation, such as subsoiling, as part of the operation. (NF)
SW-5	Treatments such as chaining, plowing and roller chopping shall be conducted as much as practical on the contour to reduce soil erosion (BLM ROD 13 Western States Vegetation Treatment EIS 1991). (NF, ESR)
SW-6	When using chemical fuel reduction treatments follow all label directions, additional mitigations identified in project NEPA evaluation and the Approved Pesticide Use Proposal. At a minimum, provide a 100-ft-wide riparian buffer strip for aerial application, 25 ft for vehicle application and 10 ft for hand application. Any deviations must be in accordance with the label. Herbicides would be applied to individual plants within 10 ft of water where application is critical (BLM ROD 13 Western States Vegetation Treatment EIS 1991). (NF)
SW-7	Avoid heavy equipment in riparian or wetland areas. During fire suppression or wildland fire use, consult a resource advisor before using heavy equipment in riparian or wetland areas. (SUP, WFU, RX, NF, ESR)
SW-8	Limit ignition within native riparian or wetland areas. Allow low-intensity fire to burn into riparian areas. (RX)
SW-9	Suppress wildfires consistently with compliance strategies for restoring or maintaining the restoration of water quality impaired [303(d) listed] waterbodies. Do not use retardant within 300 feet of water bodies. (SUP, WFU)
SW-10	Plan and implement projects consistent with compliance strategies for restoring or maintaining the restoration of water quality impaired [303(d) listed] waterbodies. Planned ~ activities should take into account the potential impacts on water quality, including increased water yields that can threaten fisheries and aquatic habitat; improvements at channel crossings; channel stability; and downstream values. Of special concern are small headwaters of moderate to steep watersheds; erosive or saline soils; multiple channel crossings; at-risk fisheries; and downstream residents. (RX, NF, ESR)

Resource Protection Measures (RPM) and Applicable Fire Management Practices

RPM CODE	SUP: Wildfire Suppression RX: Prescribed Fire ESR: Emergency Stabilization and Rehabilitation WFU: Wildland fire use for resource benefit NF: Non-fire fuel treatments
Vegetation	
V-1	When restoring or rehabilitating disturbed rangelands. non-intrusive, nonnative plant species are appropriate for use when native species: (I) are not available; (2) are not economically feasible; (3) cannot achieve ecological objectives as well as nonnative species; and/or (4) cannot compete with already established native species (Noxious Weeds Executive Order 13112 2/3/1999; BLM Manual 9015; BLM ROD 13 Western States Vegetation Treatment EIS 1991). (RX, NF, ESR)
V-2	In areas known to have weed infestations, aggressive action should be taken in rehabilitating firelines, seeding and follow-up monitoring and treatment to reduce the spread of noxious weeds. Monitor burned areas and treat as necessary. All seed used would be tested for purity and for noxious weeds. Seed with noxious weeds would be rejected (ROD 13 Western States Vegetation Treatment EIS 1991). (SUP, WFU. RX, NF. ESR)
Special Status Species	
SSS-1	Initiate emergency Section 7 consultation with United States Fish and Wildlife Service (USFWS) upon the determination that wildfire suppression may pose a potential threat to any listed threatened or endangered species or adverse modification of designated critical habitat. (SUP)
SSS-2	Prior to planned fire management actions, survey for listed threatened and endangered and non-listed sensitive species. Initiate Section 7 consultation with USFWS as necessary if proposed project may affect any listed species. Review appropriate management, conservation and recovery plans and include recovery plan direction into project proposals. For non-listed special status plant and animal species, follow the direction contained in the BLM 6840 Manual. Ensure that any proposed project conserves non-listed sensitive species and their habitats and ensure that any action authorized, funded or carried out by BLM does not contribute to the need for any species to become listed. (RX, NF, ESR)
SSS-3	See site-specific conservation measures that will be identified in the Biological Assessment (BA) (BLM 2005). (SUP, WFU, RX, NF, ESR)
Fish and Wildlife	
FW-1	Avoid treatments during nesting, fawning, spawning, or other critical periods for wildlife or fish. (RX, NF, ESR)
FW-2	Avoid if possible or limit the size of, wildland fires in important wildlife habitats such as, mule deer winter range, riparian and occupied sage grouse habitat. Use resource advisors to help prioritize resources and develop Wildland Fire Situation Analyses (WFSAs) and Wildland Fire Implementation Plans (WFIPs) when important habitats may be impacted. (SUP, WFU)
FW-3	Minimize wildfire size and frequency in sagebrush communities where sage grouse habitat objectives will not be met if a fire occurs. Prioritize wildfire suppression in sagebrush habitat with an understory of invasive, annual species. Retain unburned islands and patches of sagebrush unless there are

Resource Protection Measures (RPM) and Applicable Fire Management Practices

RPM CODE	SUP: Wildfire Suppression RX: Prescribed Fire ESR: Emergency Stabilization and Rehabilitation WFU: Wildland fire use for resource benefit NF: Non-fire fuel treatments
	compelling safety, private property and resource protection or control objectives at risk. Minimize burn-out operations (to minimize burned acres) in occupied sage-grouse habitats when there are no threats to human life and/or important resources. (SUP)
FW-4	Establish fuel treatment projects at strategic locations to minimize size of wildfires and to limit further loss of sagebrush. Fuel treatments may include greenstripping to help reduce .the spread of wildfires into sagebrush communities. (RX, NF)
FW-5	Use wildland fire to meet wildlife objectives. Evaluate impacts to sage grouse habitat in areas where wildland fire use for resource benefit may be implemented. (WFU, RX)
FW-6	Create small openings in continuous or dense sagebrush (>30% canopy cover) to create a mosaic of multiple-age classes and associated understory diversity across the landscape to benefit sagebrush-dependent species. (WFU, RX, NF)
FW-7	On sites that are currently occupied by forests or woodlands, but historically supported sagebrush communities, implement treatments (fire, cutting, chaining, seeding etc.) to re- establish sagebrush communities. (RX, NF)
FW-8	Evaluate and monitor burned areas and continue management restrictions until the recovering and/or seeded plant community reflect the desired condition. (SUP, WFU, RX, ESR)
FW-9	Utilize the Emergency Stabilization and Rehabilitation program to apply appropriate post-fire treatments within crucial wildlife habitats, including sage grouse habitats. Minimize seeding with non-native species that may create a continuous perennial grass cover and restrict establishment of native vegetation. Seed mixtures should be designed to re-establish important seasonal habitat components for sage grouse. Leks should not be re-seeded with plants that change the vegetation height previously found on the lek. Forbs should be stressed in early and late brood-rearing habitats. In situations of limited funds for ESR actions, prioritize rehabilitation of sage grouse habitats. (ESR)
Wild Horses and Burros	
WHB-1	Avoid fencing that would restrict access to water. (RX, NF, ESR)
Cultural Resources	
CR-1	Cultural resource advisors should be contacted when fires occur in areas containing sensitive cultural resources. (SUP)
CR-2	Wildland fire use is discouraged in areas containing sensitive cultural resources. A Programmatic Agreement is being prepared to cover the finding of adverse effects to cultural resources associated with wildland fire use. (WFU)

Resource Protection Measures (RPM) and Applicable Fire Management Practices

RPM CODE	SUP: Wildfire Suppression RX: Prescribed Fire ESR: Emergency Stabilization and Rehabilitation WFU: Wildland fire use for resource benefit NF: Non-fire fuel treatments
CR-3	Potential impacts of proposed treatment should be evaluated for compliance with the National Historic Preservation Act (NHPA) and the Utah Statewide Protocol. This should be conducted prior to the proposed treatment. (RX, NF, ESR)
Paleontology	
P-1	Planned projects should be consistent with BLM Manual and Handbook H-8270-1, Chapter III (A) and III (B) to avoid areas where significant fossils are known or predicted to occur or to provide for other mitigation of possible adverse effects.(RX, NF, ESR)
P-2	In the event that paleontological resources are discovered in the course of surface fire management activities, including fires suppression, efforts should be made to protect these resources. (SUP, WFU, RX, NF, ESR) Resource Uses:
Forestry	
F-1	Planned projects should be consistent with HFRA Section IO2(e) (2) to maintain or contribute to the restoration of old-growth stands to a pre-fire suppression condition and. to retain large trees contributing to old-growth structure. (SUP, WFU, RX, NF)
F-2	During planning, evaluate opportunities to utilize forest and woodland products prior to implementing prescribed fire activities. Include opportunities to use forest and woodland product sales to accomplish non-fire fuel treatments. In forest and woodland stands, consider developing silvicultural prescriptions concurrently with fuel treatments prescriptions. (RX, NF)
Livestock Grazing	
LG-1	Coordinate with permittees regarding the requirements for non-use or rest of treated areas. (SUP, WFU, RX, NF, ESR)
LG-2	Rangelands that have been burned, by wildfire, prescribed fire or wildland fire use, would be ungrazed for a minimum of one complete growing season following the burn. (SUP, WFU, RX)
LG-3	Rangelands that have been re-seeded or otherwise treated to alter vegetative composition, chemically or mechanically, would be ungrazed for a minimum of two complete growing seasons. (RX, NF, ESR)
Recreation and Visitor Services	
Rec-1	Wildland fire suppression efforts would preferentially protect Special Recreation Management Areas and recreation site infrastructure in line with fire management goals and objectives. (SUP)
Rec-2	Vehicle tracks created off established routes would be obliterated after fire management actions in order to reduce unauthorized OHV travel. (SUP, WFU, RX, NF, ESR)

Resource Protection Measures (RPM) and Applicable Fire Management Practices

RPM CODE	SUP: Wildfire Suppression RX: Prescribed Fire ESR: Emergency Stabilization and Rehabilitation WFU: Wildland fire use for resource benefit NF: Non-fire fuel treatments
Lands and Realty	
LR-1	Fire management practices would be designed to avoid or otherwise ensure the protection of authorized rights-of-way and other facilities located on the public lands, including coordination with holders of major rights-of-way systems within rights-of-way corridors and communication sites. (WFU, RX, NF, ESR)
LR-2	Fire management actions must not destroy, deface, change or remove to another place any monument or witness tree of the Public Land Survey System. (SUP, WFU, RX, NF, ESR)
Hazardous Waste	
HW-1	Recognize hazardous wastes and move fire personnel to a safe distance from dumped chemicals, unexploded ordnance, drug labs, wire burn sites or any other hazardous wastes. Immediately notify BLM Field Office hazmat coordinator or state hazmat coordinator upon discovery of any hazardous materials, following the BLM hazardous materials contingency plan. (SUP, WFU, RX, NF, ESR)
Mineral Resources	
M-1	A safety buffer should be maintained between fire management activities and at-risk facilities. (SUP, WFU, RX)
SPECIAL DESIGNATIONS	
Wilderness and Wilderness Study Areas (WSAs)	
Wild-1	The use of earth-moving equipment must be authorized by the field office manager. (SUP, WFU, RX, ESR)
Wild-2	Fire management actions would rely on the most effective methods of suppression that are least damaging to wilderness values, other resources and the environment, while requiring the least expenditure of public funds.(SUP, WFU)
Wild-3	A resource advisor should be consulted when fire occurs in Wilderness and WSA. (SUP, WFU)

APPENDIX C. LANDS AND REALTY

C.1 TRACTS IDENTIFIED FOR DISPOSAL

Designation	Legal Description	Geographic Area	Acres
E	T. 36 S., R. 22 E. Sec. 12: lots 1, 2, 4, 6; E½NE¼; SE¼SE¼ Sec. 13: E½NE¼	At Recapture Lake	363.80
A, D	T. 31 S., R. 23 E. Sec. 34: NW¼NW¼	Near U-211 at Photograph Gap	40.00
A, D	T. 32 S., R. 23 E.		
	Sec. 18: NE¼NW¼	Harts Draw	40.00
	Sec. 24: SE¼SW¼	Peters Hill	40.00
	Sec. 35: NW¼SW¼	Northwest of Monticello Airport	40.00
A, D	T. 35 S., R. 23 E. Sec. 16: NE¼NW¼ Sec. 19: NW¼SE¼	Devils Canyon	80.00
A, D	T. 36 S., R 23 E.		
	Sec. 8: NW¼NW¼	Northeast of Recapture Lake	40.00
	Sec. 20: NE¼SE¼	Northeast of Blanding	40.00
A, D	T. 39 S., R. 23 E. Sec. 23: SE¼SE¼	In Navajo Indian Reservation	40.00
A, B, D	T. 39 S., R. 24 E. Sec. 17: S½ Sec. 18: SE¼ Sec. 20: NE¼ Sec. 21; NE¼, S½ Sec. 22: S½ Sec. 27: W½ Sec. 28: NE¼	In Navajo Indian Reservation	1,920.00
A, D	T. 39 S., R. 25 E. Sec 6: NE¼SE¼, S½SE¼ Sec. 7: Lot 2, E½NE¼, SW¼NE¼, SE¼NW¼	In Navajo Indian Reservation	317.85
A, D	T. 31 S., R. 25 E. Sec. 23: S½NE¼, SE¼NW¼, N½SW¼, NE¼SE¼	West Summit Point	240.00
A, D	T. 32 S., R 25 E. Sec. 1: SE¼SW¼ Sec. 12: SW¼NE¼	Summit/West Summit Point	80.00
A, D	T. 38 S., R. 25 E. Sec. 31: Lots 2, 3, 4	North of Hatch Trading Post	109.17

C.1 TRACTS IDENTIFIED FOR DISPOSAL

Designation	Legal Description	Geographic Area	Acres
A, D	T. 39 S., R. 25 E. Sec. 15: S½	East of Hatch Trading Post	320.00
A, D	T. 32 S., R. 26 E. Sec. 14: Lots 1, 2, 3, 4 Sec 15 SE¼SW ¼ Sec. 23: Lots 1, 2, 3, 4 Sec. 26: Lots 1, 2, 3, 4	East Summit	232.35
A, D	T. 35 S., R. 26 E. Sec. 31: S½NW¼, N½SW¼, SW¼SW¼	Cedar Point	200.00
P	T. 34 S., R. 25 E. Sec. 28: NW¼NE¼, NE¼NW¼	East of Monticello	80.00
P	T. 37 S., R. 25 E. Sec. 7: S½NW¼	Bug Point	80.00
P	T. 38 S., R. 24 E. Sec. 13: E½SE¼	Bug Point	80.00
P	T. 36 S., R. 22 E Sec. 13: Lot 7	North of Blanding	40.00
P	T. 35 S., R. 23 E. Sec. 16: S½S½ Sec. 21 NE¼, E½SE¼	Devil's Canyon	400.00
P	T. 35 S., R. 26 E. Sec. 3: S½NW¼, NE¼, SE¼SW¼	Cedar Point	280.00
P	T. 35 S., R. 24 E. Sec. 17: E½ (-10 acres NE corner)	Dodge Point	320.00
P	T. 33 S., R.23 E., Sec. 26 SW¼SW¼ Sec. 35 N½NW¼,W½NW¼NE¼NW¼	Monticello City Water Treatment Facility	82.30
P	T. 42 S., R. 19 E., Sec. 7 Lots 35, 51, 52	Mexican Hat Water Treatment Facility	44.25
P	T. 41 S., R. 21 E., Sec. 5 NW¼, NW¼NE¼, N½SW¼ Sec. 6 E½NE¼, NE¼SE¼	Bluff Airstrip	72.00 (ROW acreage)
P	T. 35 S., R. 24 E., Section 27 NE¼NW¼	Montezuma Creek	9.00

C.1 TRACTS IDENTIFIED FOR DISPOSAL

Designation	Legal Description	Geographic Area	Acres
P	T. 33 S., R. 23 E. Section 17 NW¼NE¼, S½NE¼, SE¼, SE¼SW¼, SW¼NW, N½NW¼	North of Monticello Water Development area for San Juan County	440.0
P	T. 38 S., R. 12 E. Section 34 and 35, Tract 37 T. 39 S., R. 12 E Section 3, Tract 37.	Cal Black Memorial Airport	370.42
Total Acres			**6,440.34**

Legend: Each parcel is designated by letter as to the type(s) of disposal for which it is suitable, and under what authority:

- A Tracts uneconomic to manage, suitable for sale under authority of Section 203(a)(1) of FLPMA
- B Acquired tracts, suitable for sale under authority of Section 203(a)(2) of FLPMA
- C Public objective tracts, suitable for sale under authority of Section 203(a)(3) of FLPMA
- D Tracts suitable for sale under authority of Section 206(a) of FLPMA
- E Tracts suitable for recreation and public purpose (R&PP) patent under authority of the R&PP Act of 1926 and Section 212 of FLPMA
- F Tracts suitable for desert land entry (DLE patent) under authority of the Act of March 3, 1877, as amended by the Act of March 3, 1891
- P Nominations from the public made subsequent to the 1991 RMP

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APPENDIX D. LIVESTOCK GRAZING

D.1 STANDARDS AND GUIDELINES FOR GRAZING MANAGEMENT

BLM has developed the following Fundamentals of Rangeland Health and their companion rules-Standards for Rangeland Health and Guidelines for Grazing Management for BLM in Utah ([BLM-UT-GI-97-001-4000] U.S. DEPARTMENT OF INTERIOR BUREAU OF LAND MANAGEMENT, UTAH STATE OFFICE 1997).

D.1.1 FUNDAMENTALS OF RANGELAND HEALTH

As provided by regulations, developed by the Secretary of the Interior on February 22, 1995, the following conditions must exist on BLM lands:

1. Watersheds are in, or making significant progress toward, properly functioning physical condition, including their upland, riparian –wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, and timing and duration of flow.
2. Ecological processes, including the hydrologic cycle nutrient cycle, and energy flow, are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities.
3. Water quality complies with State water quality standards and achieves, or is making significant progress towards achieving established BLM management objectives such as meeting wildlife needs.
4. Habitats; are, or are making significant progress toward being, restored or maintained for Federal threatened and endangered Species, Federal proposed, Category 1 and 2 Federal candidate and other special status Species.

In 1997, the BLM in Utah developed rules to carry out the Fundamentals of Rangeland health. These are called Standards for Rangeland health and Guidelines for grazing management.

Standards spell out conditions to be achieved on BLM Lands in Utah, and **Guidelines** describe practices that will be applied in order to achieve the Standards.

D.1.2 STANDARDS FOR RANGELAND HEALTH

STANDARD 1. Upland soils exhibit permeability and infiltration rates that sustain or improve site productivity, considering the soil type, climate, and landform.

As indicated by:

1. Sufficient cover and litter to protect the soil surface from excessive water and
2. wind erosion, promote infiltration, detain surface flow, and retard soil moisture loss by evaporation.
3. The absence of indicators of excessive erosion such as rills, soil pedestals. and actively eroding gullies.

4. The appropriate amount, type, and distribution Of vegetation reflecting the presence of (1) the Desired Plant Community IDPCI, where identified in a land use plan, or (2) where the PVC is not identified, a community that equally sustains the desired level of productivity and properly functioning ecological conditions.

STANDARD 2. Riparian and wetland areas are in properly functioning condition. Stream channel morphology and functions are appropriate to soil type, climate and landform.

As indicated by:

1. Stream bank vegetation consisting of or showing a trend toward species with root masses capable of withstanding high stream flow events. Vegetative cover adequate to protect stream banks and dissipate stream flow energy associated with high-water flows. protect against accelerated erosion. capture sediment. and provide for groundwater recharge.
2. Vegetation reflecting: Desired Plant Community. maintenance of riparian and wetland soil moisture characteristics, diverse age structure and composition. high vigor. large woody debris when site potential allows. and providing food. cover and other habitat needs for dependent animal species.
3. Revegetating point bars: lateral stream movement associated with natural sinuosity: channel width. depth, pool frequency and roughness appropriate to landscape position.
4. Active floodplain.

STANDARD 3. Desired species, including native, threatened.

As indicated by:

1. Frequency, diversity, density, age classes, and productivity of desired native species necessary to ensure reproductive capability and survival.
2. Habitats connected at a level to enhance species survival.
3. Native species reoccupy habitat niches and voids caused by disturbances unless management objectives call for introduction or maintenance of nonnative species.
4. Appropriate amount, type, and distribution of vegetation reflecting the presence of (1) the Desired Plant Community DPC, where identified in a land use plan conforming to these Standards, or (2) where the DPC is identified a community that equally sustains the desired level of productivity and properly functioning ecologic processes.

STANDARD 4. BLM will apply and comply with water quality standards established by the State of Utah (R.317-2) and the Federal Clean Water and Safe Drinking Water Acts. Activities on BLM lands will fully support the designated beneficial uses described in the Utah Water Quality Standards {R.317-2) for surface and groundwater. 1

As indicated by:

1. Measurement of nutrient loads, total dissolved solids, chemical constituents, fecal coliform, water temperature and other water quality parameters.
2. Macro-invertebrate communities that indicate water quality meets aquatic objectives.

Because BLM Lands provide forage for grazing of wildlife, wild horses and burros, and domestic livestock, the following rules have been developed to assure that such grazing is consistent with the Standards listed here.

1. BLM will continue to coordinate monitoring water quality activities with other Federal, State and technical agencies.

D.1.3 GUIDELINES FOR GRAZING MANAGEMENT

1. Grazing management practices will be implemented that:
   a. Maintain sufficient residual vegetation and litter on both upland and riparian sites to protect the soil from wind and water erosion and support ecological functions;
   b. Promote attainment or maintenance of proper functioning condition riparian/wetland areas, appropriate stream channel morphology, desired soil permeability and permeability and infiltration, and appropriate soil conditions and kinds and amounts of plants and animals to support the hydrologic cycle, nutrient cycle, and energy flow.
   c. Meet the physiological requirements of desired plants and facilitate reproduction and maintenance of desired plants to the extent natural conditions allow;
   d. Maintain viable and diverse populations of plants and animals appropriate for the site,
   e. Provide or improve within the limits of site potentials, habitat for Threatened or Endangered Species;
   f. Avoid grazing management conflicts with other species that have the potential of becoming protected or special status species;
   g. Encourage innovation, experimentation and the ultimate development of alternatives to improve rangeland management practices;
   h. Give priority to rangeland improvement projects and land treatments that offer the best opportunity for achieving the Standards.
2. Any spring or seep developments will he designed and constructed to protect ecological process and functions and improve livestock, wild horse and wildlife distribution.
3. New rangeland projects for grazing will be constructed in a manner consistent with the Standards. Considering economic circumstances and site limitations, existing rangeland projects and facilities that conflict with the achievement or maintenance of the Standards will be relocated and/or modified.
4. Livestock salt blocks and other nutritional supplements will be located away from riparian/wetland areas or other permanently located, or other natural water sources. It is recommended that the locations of these supplements be moved every year.
5. The use and perpetuation of native species will be emphasized. However, when restoring or rehabilitating disturbed or degraded rangelands nonintrusive, nonnative plant species are appropriate for use where native species (a) are not available, (b) are not economically feasible, (c) can not achieve ecological objectives as well as nonnative species, and/or (d) cannot compete with already established native species
6. When rangeland manipulations are necessary, the best management practices, including biological processes, fire and intensive grazing, will be utilized prior to the use of chemical or mechanical manipulations.
7. When establishing grazing practices and rangeland improvements, the quality of the outdoor recreation experience is to be considered. Aesthetic and scenic values, water, campsites and opportunities for solitude are among those considerations.
8. Feeding of hay and other harvested forage (which does not refer to miscellaneous salt, protein, and other supplements) for the purpose of substituting for inadequate natural

forage will not be conducted on BLM lands other than in (a) emergency situations where no other resource exists and animal survival is in jeopardy, or (b) situations where the Authorized Officer determines such a practice will assist in meeting a Standard or attaining a management objective.

9. In order to eliminate, minimize, or limit the spread of noxious weeds, (a) only hay cubes, hay pellets, or certified weed-free hay will be fed on BLM lands, and (b) reasonable adjustments in grazing methods, methods of transport, and animal husbandry practices will be applied.
10. To avoid contamination of water sources and in advertent damage to non-target species, aerial application of pesticides will not be allowed within 100 feet of a riparian wetland area unless the product is registered for such use by the EPA.
11. On rangelands where a standard is not being met, and conditions are moving toward meeting the standard, grazing may be allowed to continue. On lands where a standard is not being met, conditions are not improving toward meeting the standard or other management objectives, and livestock grazing is deemed responsible, administrative action with regard to livestock will be taken by the Authorized Officer pursuant to CUR 4180.2(c).
12. Where it can he determined that more than one kind of grazing animal is responsible for failure to achieve a Standard, and adjustments in management are required. those adjustments will be made to each kind of animal, based on interagency cooperation as needed. in proportion to their degree of responsibility.
13. Rangelands that have been burned, reseeded or otherwise treated to alter vegetative composition will be closed to livestock grazing as follows: (I) burned rangelands, whether by wildfire or prescribed burning, will be ungrazed for a minimum of one complete growing season following the burn; and (2) rangelands that have been reseeded or otherwise chemically or mechanically treated will be ungrazed for a minimum of two complete growing seasons.
14. Conversions in kind of livestock (such as from sheep to cattle) will be analyzed in light of Rangeland Health Standards. Where such conversions are not adverse to achieving a Standard, or they are not in conflict with BLM land use plans, the conversion will be allowed.

D.2 ALLOTMENT SITUATION SUMMARY

Allotment Status	Number	Percent
Permitted	74	
Not Permitted	1	
Number of Allotments by Class of Livestock		
Cattle	61	
Cattle/Horses	13	
Animal Unit Months		
Active (Cattle)	77,365	
Active (Horses)	1,431	
Total Active Use	78,818	
Suspended	17,173	
Exchange of Use (Other Ownership)	7,299	
Livestock Grazing System		
Season-long	35	
Deferred	11	
Deferred Rotation	28	
Total Acres Within Allotments	**2,268,736**	
BLM	1,761,351	77.6%
State of Utah	190,366	8.4%
Private	53,704	2.4%
National Park Service	261,574	11.5%
Total Acres Excluded From Livestock Grazing	**137,440**	**6.1%**
Allotment Category		
Maintain	9	
Improve	29	
Custodial	36	

D.3 Criteria Used to Determine Allotment Management Category

The criteria used for the placement of the allotments into the category are based on resource potential, resource use conflict, or controversy, opportunity for positive economic return on public investments, and the present management situation. In each category, all items may apply to the allotment or there may be only one specific item that causes the allotment to be placed into the specific category. Specific criteria used for each category is as follows:

D.3.1 Category "M"–Maintaining Existing Resource Conditions

- Present range condition is satisfactory and present management appears satisfactory.
- These allotments are in generally good condition and have no serious resource conflicts under present management.
- Allotments have moderate or high resource production potential, and are producing near their potential (or trend is moving in that direction).
- There are no serious resource conflicts with livestock grazing.
- Opportunities may exist for positive economic return from public investments.

D.3.2 Category "I"–Improve Existing Resource Conditions

- These allotments have unsatisfactory range condition and present management appears unsatisfactory.
- Allotments have moderate to high resource production potential and are producing at low to moderate levels.
- These allotments have potential to improve, or have conflicts that can be resolved through changes in grazing management or investments in range improvement projects.
- These allotments have serious resource use conflicts.
- There is potential for positive economic return on public investment.

D.3.3 Category "C"–Custodial Management

- Allotments have low resource production potential, and are producing near their potential.
- Present range condition is not a factor.
- Present management appears satisfactory, or is the only logical practice under existing resource conditions.
- Opportunities for BLM management are limited because the percentage of public land is low or the acreage of public lands is small.
- Limited resource use conflicts may exist.
- Opportunities for positive economic return on public investments do not exist, or are constrained by technological or economic factors.

APPENDIX 8-A - ALLOTMENT SITUATION

MONTICELLO FIELD OFFICE

Allotment Name	Alkali Canyon	Alkali Point	Bear Trap	Big Indian	Big Westwater	Black Steer	Blue Mountain	Bluff Bench
Allotment Number	#06801	#06802	#04821	#04826	#06826	#06804	#06835	#06803
Allotment Status	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted
Kind(s) of Pemitted Livestock	Cattle/Horses	Cattle/Horses	Catle	Cattle	Cattle	Cattle	Cattle	Cattle
Season of Use	11/1-5/31	6/1-11/30	9/1-12/12	12/5-5/10	10/15-12/15 4/1-5/31	11/16-3/31	7/1-9/30	11/20-2/28
Animal Unit Months(s)								
Active (Cattle)	2,290	304	130	810	50	336	30	64
Active (Horses)	72	36						
Suspended								
Exchange of Use (Other Ownership)		63		22				
Livestock Grazing System	Deferred Rotation	Deferred Rotation	Season-long	Deferred Rotation	Deferred Rotation	Season-long	Season-long	Season-long
Total Acres Within Allotment	26,408	9,334	1,492	10,413	480	9,133	298	951
BLM	23,730	7,473	1,446	7,955	480	4,827	298	216
State of Utah	2,186	1,853		894				104
Private	492	8	45	1,564		4,307		632
National Park Service								
Allotment Category	Improve	Improve	Custodial	Improve	Custodial	Custodial	Custodial	Custodial

APPENDIX 8-A - ALLOTMENT SITUATION, continued

MONTICELLO FIELD OFFICE

Allotment Name	Brown Canyon	Bug Squaw	Bulldog	Cave Canyon	Church Rock	Comb Wash	Corral	Cottonwood
Allotment Number	#06805	#06846	#06806	#06808	#04827	#06836	#06838	#06849
Allotment Status	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted
Kind(s) of Pemitted Livestock	Cattle	Cattle	Cattle	Cattle/Horses	Cattle	Cattle	Cattle	Cattle
Season of Use	11/16-3/15	11/15-5/20	5/18-9/30	11/1-5/15	12/1-5/31	10/16-5/31	5/20-7/19	10/16-6/10
Animal Unit Months(s)								
Active (Cattle)	60	1,465	368	3,184	30	3,796	16	1,434
Active (Horses)				65				
Suspended				2,824		10		746
Exchange of Use (Other Ownership)		33		403		329		125
Livestock Grazing System	Season-long	Deferred Rotation	Season-long	Season-long	Season-long	Deferred Rotation	Season-long	Deferred Rotation
Total Acres Within Allotment	858	18,045	8,253	34,810	5,282	73,591	212	40,638
BLM	858	16,021	8,214	29,324	413	65,398	212	33,404
State of Utah		1,058	1	3,847	3,050	7,139		2,897
Private		967	38	1,639	1,818	1,055		4,337
National Park Service								
Allotment Category	Custodial	Improve	Custodial	Improve	Custodial	Improve	Custodial	Improve

APPENDIX 8-A - ALLOTMENT SITUATION, continued

MONTICELLO FIELD OFFICE

Allotment Name	Cross Canyon	Devils Canyon	Dodge Canyon	Dodge Point	Dry Farm	Dry Valley-Deer Neck	East Canyon	East League
Allotment Number	#06811	#06812	#06813	#06814	#04804	#04820	#04814	#06815
Allotment Status	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted
Kind(s) of Pemitted Livestock	Cattle	Cattle	Cattle	Cattle	Cattle	Cattle	Cattle	Cattle
Season of Use	11/1-5/31	7/7-8/31	5/1-10/15	6/1-10/31	5/5-6/4	12/1-4/30	12/1-4/15	11/1-5/15
Animal Unit Months(s)								
Active (Cattle)	3,600	212	110	30	27	994	1,191	1,359
Active (Horses)								
Suspended	2,198							
Exchange of Use (Other Ownership)	903	4						1,029
Livestock Grazing System	Deferred Rotation	Deferred Rotation	Season-long	Season-long	Season-long	Deferred Rotation	Deferred Rotation	Deferred Rotation
Total Acres Within Allotment	42,109	10,825	1,638	193	730	6,914	5,379	19,549
BLM	33,634	9,653	1,598	175	726	4,172	4,311	14,140
State of Utah	4,740	1,150				927	1,044	5,401
Private	3,735	23	40	18	4	1,815	23	8
National Park Service								
Allotment Category	Improve	Maintain	Custodial	Custodial	Custodial	Maintain	Maintain	Maintain

APPENDIX 8-A - ALLOTMENT SITUATION, continued

MONTICELLO FIELD OFFICE

Allotment Name	East Summit	Hart Draw	Hart Point	Horse Canyon	Horsehead Canyon	Hurrah Pass	Indian Creek	Indian Rock
Allotment Number	#04810	#04811	#04825	#06848	#06816	#04813	#04815	#04822
Allotment Status	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted
Kind(s) of Pemitted Livestock	Cattle	Cattle	Cattle	Cattle	Cattle	Cattle/Horses	Cattle	Cattle
Season of Use	4/1-12/31	10/16-6/15	3/1-5/31	11/1-3/31	5/16-10/31	11/25-4/15	10/1-6/15	11/15-4/15
Animal Unit Months(s)								
Active (Cattle)	13	2,460	1,080	425	144	215	8,518	384
Active (Horses)						47		
Suspended						172		
Exchange of Use (Other Ownership)		72	123	80			150	
Livestock Grazing System	Deferred Rotation	Deferred Rotation	Deferred Rotation	Season-long	Season-long	Deferred Rotation	Deferred Rotation	Season-long
Total Acres Within Allotment	133	80,329	20,003	2,734	4,904	20,253	272,458	4,384
BLM	133	69,470	17,738	2,661	4,904	15,712	228,184	3,785
State of Utah		8,060	2,266	71		4,178	19,485	241
Private		2,799		3		362	4,192	358
National Park Service							20,596	
Allotment Category	Custodial	Improve	Improve	Custodial	Custodial	Improve	Improve	Maintain

APPENDIX 8-A - ALLOTMENT SITUATION, continued

MONTICELLO FIELD OFFICE

Allotment Name	**Johnson Creek**	**Laws**	**Lake Canyon**	**Little Boulder**	**Lone Cedar**	**Long Canyon**	**Lyman**	**Mail Station**
Allotment Number	#06818	#06839	#06833	#06819	#04801	#06820	#06821	#04819
Allotment Status	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted
Kind(s) of Pemitted Livestock	Cattle	Cattle	Cattle/Horses	Cattle	Cattle	Cattle	Cattle	Cattle
Season of Use	6/5-10/14	4/16-11/15	10/6-6/5	5/1-8/31	12/1-4/30	6/16-10/15	3/1-2/28	11/1-4/30
Animal Unit Months(s)								
Active (Cattle)	90	5	4,799	280	1,966	140	6	1,340
Active (Horses)			96					
Suspended			2,040		369			
Exchange of Use (Other Ownership)			1,402					200
Livestock Grazing System	Season-long	Season-long	Deferred Rotation	Deferred Rotation	Deferred Rotation	Season-long	Season-long	Deferred Rotation
Total Acres Within Allotment	779	1,549	623,013	7,084	20,633	1,558	354	7,891
BLM	779	1,280	395,882	6,321	18,426	1,508	317	6,499
State of Utah			41,220	154	1,623		22	1,257
Private		269	4	609	584	50	15	135
National Park Service			185,907					
Allotment Category	Custodial	Custodial	Improve	Maintain	Improve	Custodial	Custodial	Improve

APPENDIX 8-A - ALLOTMENT SITUATION, continued

MONTICELLO FIELD OFFICE

Allotment Name	**McCracken Wash**	**Montezuma Canyon**	**Monticello Cowboy**	**Monument Canyon**	**Muley Point**	**Northeast Summit**	**Owens Dugout**	**Pearson Point**
Allotment Number	#06822	#06823	#04806	#06825	#02485	#06852	#06824	#06845
Allotment Status	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted
Kind(s) of Pemitted Livestock	Cattle	Cattle	Cattle	Cattle/Horses	Cattle	Cattle	Cattle	Cattle
Season of Use	11/15-5/15	11/1-5/31+	11/16-4/30	3/1-2/28	11/1-5/31	4/1-12/31	2/1-4/30	4/15-12/15
Animal Unit Months(s)								
Active (Cattle)	950	1,900	814	721	882	20	275	125
Active (Horses)				429	0			
Suspended		196			413			
Exchange of Use (Other Ownership)			229		492			
Livestock Grazing System	Deferred Rotation	Deferred Rotation	Season-long	Deferred Rotation	Deferred Rotation	Season-long	Deferred Rotation	Deferred Rotation
Total Acres Within Allotment	17,227	39,051	4,826	38,441	37,582	829	2,309	2,777
BLM	16,928	31,464	4,178	35,302	32,450	468	2,273	2,229
State of Utah	195	4,419	639	3,139	3,772		1	549
Private	104	3,168	8			361	35	
National Park Service					1,360			
Allotment Category	Improve	Improve	Maintain	Improve	Improve	Custodial	Custodial	Maintain

APPENDIX 8-A - ALLOTMENT SITUATION, continued

MONTICELLO FIELD OFFICE

Allotment Name	**Perkins Brothers**	**Peters Canyon**	**Peters Point**	**Piute Knoll**	**Rogers**	**Roundup Corral**	**Sage Flat**	**Sage Grouse**
Allotment Number	#06827	#04807	#04805	#06841	#06842	#06847	#06833	#06716
Allotment Status	Permitted	Permitted	Permitted	Permitted	Not Permitted	Permitted	Permitted	Permitted
Kind(s) of Pemitted Livestock	Cattle/Horses	Cattle	Cattle	Cattle		Cattle	Cattle	Cattle
Season of Use	10/1-5/31	11/16-5/16	4/20-12/15	5/1-10/31		6/30&10/1 (over-night)	7/30-10/31	5/1-5/30
Animal Unit Months(s)								
Active (Cattle)	7,191	90	180	30		8	13	7
Active (Horses)	368							
Suspended								
Exchange of Use (Other Ownership)	594							
Livestock Grazing System	Deferred Rotation	Deferred Rotation	Deferred Rotation	Season-long		Season-long	Season-long	Season-long
Total Acres Within Allotment	126,693	2,268	4,726	158	40	57	1,132	2,622
BLM	101,515	**665**	**4,071**	**141**	**40**	**57**	**787**	**320**
State of Utah	8,370	943	642					
Private	3,304	660	13	17			345	2,302
National Park Service	13,504							
Allotment Category	Improve	Improve	Improve	Custodial	Custodial	Custodial	Custodial	Custodial

APPENDIX 8-A - ALLOTMENT SITUATION, continued

MONTICELLO FIELD OFFICE

Allotment Name	Shumway Point	Slickhorn	South Canyon	South Vega	Spring Creek	Spring Creek West	Squaw Canyon[1]	Stateline
Allotment Number	#06850	#06834	#04824	#04800	#04823	#04812	#06828	#04831
Allotment Status	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted
Kind(s) of Pemitted Livestock	Cattle	Cattle/Horses	Cattle	Cattle	Cattle/Horses	Cattle	Cattle	Cattle
Season of Use	12/1-4/30	10/16-6/15	5/16-11/30	1/6-2/28	5/1-10/31	6/16-10/15	12/1-2/28 4/29-5/31	9/1-12/6
Animal Unit Months(s)								
Active (Cattle)	680	1,755	117	15	134	150	789	16
Active (Horses)		40			10			
Suspended	300	1,113						
Exchange of Use (Other Ownership)	80	320						
Livestock Grazing System	Deferred	Deferred Rotation	Season-long	Season-long	Season-long	Season-long	Deferred Rotation	Season-long
Total Acres Within Allotment	3,554	146,131	7,431	615	3,692	1,289	8,465	239
BLM	**2,905**	128,625	6,840	455	1,993	1,280	7,565	239
State of Utah	646	9,387	441				900	
Private	4	640	150	160	1,699	9		
National Park Service		7,479						
Allotment Category	Maintain	Improve	Custodial	Custodial	Improve	Improve	Improve	Custodial

[1]This allotment is being administered by the Durango Field Office

APPENDIX 8-A - ALLOTMENT SITUATION, continued

MONTICELLO FIELD OFFICE

Allotment Name	Stevens	Summit Canyon	Tank Bench-Brushy Basin	Tank Draw	Texas Flat	Upper East Canyon	Upper Mail Station	Vega Creek
Allotment Number	#06830	#04818	#06831	#04802	#02484	#04817	#04893	#04803
Allotment Status	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted	Permitted
Kind(s) of Pemitted Livestock	Cattle/Horses	Cattle	Cattle	Cattle	Cattle/Horses	Cattle	Cattle	Cattle
Season of Use	3/1-2/28	7/1-8/31	10/8-6/30	12/1-4/30	11/1-5/31	5/1-10/31	11/14-2/28	7/1-7/31
Animal Unit Months(s)								
Active (Cattle)	58	41	3,973	1,647	1,046	18	106	80
Active (Horses)	24				28			
Suspended			1,410		504			
Exchange of Use (Other Ownership)			525					
Livestock Grazing System	Season-long	Deferred Rotation	Deferred Rotation	Deferred Rotation	Deferred Rotation	Season-long	Season-long	Season-long
Total Acres Within Allotment	1,391	1,664	79,367	11,306	32,541	1,433	2,092	1,283
BLM	1,076	1,560	66,755	9,454	28,826	670	1,821	445
State of Utah			11,216	1,726	3,715			
Private	315	104	1,396	126		763	271	839
National Park Service								
Allotment Category	Custodial	Custodial	Improve	Improve	Improve	Custodial	Custodial	Custodial

APPENDIX 8-A - ALLOTMENT SITUATION, continued

MONTICELLO FIELD OFFICE

Allotment Name	Verdure Creek	White Canyon	White Mesa	Monu-colo**
Allotment Number	#06832	#06837	#06840	#08038
Allotment Status	Permitted	Permitted	Permitted	Permitted
Kind(s) of Pemitted Livestock	Cattle	Cattle/Horses	Cattle/Horses	Cattle
Season of Use	10/15-5/15	3/1-2/28	12/1-5/31	4/1-5/1
Animal Unit Months(s)				
Active (Cattle)	96	5,400	4,302	41
Active (Horses)		144	72	
Suspended		1,863	3,932	
Exchange of Use (Other Ownership)			502	
Livestock Grazing System	Season-long	Deferred Rotation	Deferred Rotation	Season-long
Total Acres Within Allotment	3,309	226,299	60,892	620
BLM	2,660	171,989	50,304	620
State of Utah	484	17,866	6,418	
Private	165	1,023	4,175	
National Park Service		35,421		
Allotment Category	Custodial	Improve	Improve	Custodial

**This Allotment is part of the Durango Field Office, but administered by the Monticello Field Office, and not included in the summary page

APPENDIX E. RECREATION

E.1 STANDARDS FOR PUBLIC LAND HEALTH AND GUIDELINES FOR RECREATION MANAGEMENT FOR BLM LANDS IN UTAH

E.1.1 INTRODUCTION

The mission of the BLM is to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations. The resources of these lands include timber, minerals, soils, riparian areas, water, air, and vegetation, historical and archaeological sites, wildlife habitats, threatened and endangered species habitats, and wilderness. Recreational use of public land is a highly regarded social value of our society. Recognizing that social and economic factors must be considered in achieving healthy public lands, the Utah BLM, will consult with citizens, interest groups and local governments, to conduct planning, and to establish partnerships with stakeholders to manage and to pursue funding sources. Public lands will be managed so that various services, activities, and all renewable resources of the land are environmentally sustainable and non-renewable resources are recovered in ways that ensure the long-term health of the land.

Standards for Rangeland [ecological] Health of BLM Lands in Utah, and grazing management guidelines to meet these standards, were adopted in May 1997. The following guidelines for recreational use of the public lands are intended to assist in meeting not only the Rangeland [ecological] Health Standards but also to minimize harm to public land values as listed above. A premise of these guidelines is that health of the land and quality of the recreation experience are inseparable.

It is the intent of the following guidelines to encourage and allow for outdoor recreational opportunities, to enhance the quality of the outdoor experience, and to serve diverse recreational interests while minimizing conflicts between various kinds of users. However, recreation on public land is a limited and precious resource whose long-term use is dependent on the users' responsible and ethical behavior.

Field managers are encouraged to establish partnerships with stakeholders affected by guideline implementation. Communication protocols will be implemented to inform and involve those affected stakeholders.

E.1.2 RECREATION MANAGEMENT GUIDELINES

RANGELAND HEALTH STANDARD 1

Upland soils exhibit permeability and infiltration rates that sustain or improve site productivity, considering the soil type, climate, and land form.

1. Designate areas for intensive recreational use or cross-country motorized travel where disturbance of soil and vegetation is acceptable, either because impacts are insignificant and/or temporary or because the value of intensive use of the land outweighs whatever ecological changes may occur. Decisions on such designation should take into account conflicts with other users as well as adverse effects on archaeological or historical sites,

threatened or endangered species habitat, wildlife habitat, or social values such as beauty, solitude, and quiet.

2. In all other areas, travel routes and other disturbances should be kept to the minimum necessary to provide access and visitor facilities appropriate to the area. Through blocking, signing, and public education, unneeded travel routes should be eliminated and rehabilitated and unplanned development of new ones discouraged.
3. It may be necessary to manage some areas to be entirely free of planned travel routes.

RANGELAND HEALTH STANDARD 2

Riparian and wetland areas are in properly functioning condition and stream channel morphology and functions are appropriate to soil type, climate, and land form.

1. Where feasible, and consistent with user safety, developed travel routes should be located/relocated away from sensitive riparian and wetland areas.
2. Camping in riparian areas should be avoided and must be managed, monitored, and modified as conditions dictate to reduce vegetation disturbance and sedimentation.
3. Stream crossings will be limited to the number dictated by the topography, geology, and soil type. Design any necessary stream crossings to minimize sedimentation, soil erosion, and compaction.

RANGELAND HEALTH STANDARD 3

Desired species, including native, threatened, endangered, and special status species, are maintained at a level appropriate for the site and species involved.

1. Protect against the establishment and/or spread of noxious or other weeds from intensive recreation, including the use of riding and pack animals, hiking, motorized, or other mechanized vehicles.
   a. Conduct an educational campaign to inform recreational users about the damage caused by noxious weeds and how their spread can be minimized.
   b. Where appropriate, apply restrictions, e.g., don’t permit surface disturbing activities.
2. Protect wildlife and/or habitat by:
   a. Preserving connectivity and avoiding fragmentation.
   b. Controlling recreational activities that would interfere with critical wildlife stages such as nesting, reproduction, or seasonal concentration areas.
   c. Avoiding creation of artificial attractions such as the feeding of wild animals or improper disposal of garbage.
3. Where necessary, control recreational use by changing location or kind of activity, season, intensity, distribution, and/or duration in order to protect plant and animal communities, especially those containing threatened, endangered, or candidate species.

RANGELAND HEALTH STANDARD 4

BLM will apply and comply with water quality standards established by the State of Utah (R. 317-2) and the Federal Clean Water and Safe Drinking Water Acts. Activities on BLM lands will fully support the designated beneficial uses described in the Utah Water Quality Standards (R. 317-2) for surface and groundwater.

1. Manage recreational uses in coordination with other uses on public lands to comply with applicable water quality standards by:
   a. Identifying areas where recreational activities may seriously impair water quality.
   b. Establishing thresholds for numbers, types, and duration of visitor use, and when those thresholds are reached, by developing facilities and/or possibly limiting or relocating use.
2. Monitor and control disposal of human or domesticated animal waste, trash, and other pollutants to prevent serious impairment of water quality.

E.1.3 IMPLEMENTING THE RECREATION GUIDELINES

The Recreation Guidelines integrate the recreation program with the standards for rangeland health and broadly define the procedures that would be applied to achieve the standards for rangeland health within the recreation program. Implementing the Recreation Guidelines would define a more specific management approach and recommend actual practices that could be followed to implement the Guidelines. The Guidelines in this document are designed as tools to assist managers in implementing recreation management decisions and actions. At this stage, the environmental effects of implementing the guidelines are too broad, speculative, or conjectural to lend themselves to meaningful environmental analysis under the National Environmental Policy Act (NEPA). Furthermore, implementing actions will be subject to further NEPA review and analysis. Therefore, the adoption of the guidelines is categorically excluded from NEPA analysis (516 DM, Chapter 6, Appendix 5, 5.4, categorical exclusions).

As consistent with existing policies, guidance, and budgetary constraints, it is recommended that the BLM do the following:

- Recognize that in some cases various levels of regulations and limits on users are necessary. Restrictions and limitations on public uses should be as small as possible without compromising the primary goal.
- Use on-the-ground presence as a tool to protect public lands.
- Where long-term damage by recreational uses is observed or anticipated, limit or control activities through specialized management tools such as designated campsites, permits, area closures, and limitations on number of users and duration of use. Revise recreation management plans and management framework plans when they prove to be either overly restrictive or inadequate to maintain public land health.
- Coordinate with federal and state agencies, county and local governments, and tribal nations in recreation planning and managing traffic, search and rescue operations, trash control and removal, and public safety.
- Consider and, where appropriate, implement management methods to protect the resource as well as maintain the quality of experience of the various user groups. These could include limitation of numbers, types, timing, season of use and duration of uses.
- Encourage the location of public land recreational activities near highway corridors by placement of appropriate visitor use infrastructure. Provide restrooms and other facilities adequate for anticipated uses at designated campgrounds, trail heads, and other areas where there is a concentration of recreational users.

E.1.4 BUILDING A STEWARDSHIP ETHIC FOR PUBLIC LAND USE

A critical step in achieving and maintaining public land health and enjoyment of the public land is that the users of the public land practice responsible stewardship ethics. All users, from recreationists to commodity producers, should understand, practice and promote behavior that does not damage the environment. Below are recommended strategies to instill principles of public land user ethics:

- Use information and interpretative services as major tools to protect public land health as well as significant natural, cultural, and recreational resources. Where feasible, improve public knowledge by locating kiosks, interpretive signs, and visitor information facilities at visitor contact points. Provide guidebooks and pamphlets for users.
- Incorporate information about public land values and user ethics into the terms and conditions of permits and land use authorizations.
- Increase efforts to educate public land visitors and users about an ethic of responsible use through programs such as Tread Lightly, Leave No Trace, Project Archaeology, the International Mountain Bike Association's Rules of the Trail, and Public Lands Watch program.
- Communicate to the members of the public their individual rights and responsibilities in the use and preservation of public lands, including the recognition of the rights and responsibilities of others.
- Initiate and maintain collaborative partnerships among government agencies, local governments, business communities, volunteers, user groups, stakeholders, educational institutions, individuals, and the private sector to achieve Rangeland Health Standards and implement associated guidelines.
- Encourage the development of a concise educational program to be implemented at the initial point of contact with the public and public land users. The program should promote public land values, knowledge of rights and responsibilities, environmental awareness, and communication between the BLM and the public. It should inform the public about changing management practices and policies. In addition, the educational program should demonstrate the connection between the health of the public land and the benefits users and local communities receive from those lands.
- Encourage the private sector to conduct responsible marketing of activities available on public lands while avoiding use of products and services in ways that may harm public lands.
- Educate the public in proper human and solid waste disposal techniques.

E.1.5 GLOSSARY

Guidelines, Recreation: Recreation management tools, methods, and techniques designed to provide activities, experiences, and benefits for the recreating public while maintaining or achieving healthy public lands as defined by the standards. The recreation guidelines contained in this document are directed toward maintaining or achieving public land health.

Mechanized Vehicle: Any motorized or non-motorized vehicle capable of, or designed for, travel on or immediately over land. An example of a mechanized, but not motorized vehicle is a mountain bike. All motorized vehicles are mechanized.

Motorized Vehicle: Synonymous with off-road and off-highway vehicle. Examples of this type of vehicle include all-terrain vehicles (ATV), sport utility vehicles (SUV), motorboats, and snowmobiles.

Non-Motorized Use: Recreational human and animal foot traffic. Examples include horses, llamas, and other domestic animals. Wheel chairs designed for indoor use as a medical appliance are not considered mechanized.

Protect: To take actions to guard against or minimize injury or loss.

Riparian: Of, on, or relating to the bank of a natural course of water.

Special Status Species/Sensitive Species: Those species designated by a State Director, usually in cooperation with the State agency responsible for managing the species as sensitive.

Standards for Public Land Health: A description of conditions needed to sustain public land health; the standards relate to all uses of the public lands in Utah.

Threatened and Endangered Species: those species officially listed as threatened or endangered by the Secretary of the Interior under the provisions of the Endangered Species Act.

Visitor Use Infrastructure: Amenities such as roads, parking areas, and facilities, to protect the resource and support the recreation user in his/her pursuit of activities, experiences, and benefits.

E.2 Benefits Based Management (BBMs) Goals and Objectives

E.2.1 Cedar Mesa Cultural Special Recreation Management Area

Market Strategy	Destination
Market	International, National, Regional, and Local visitors seeking premier and unique cultural tourism opportunities.
Niche	Cedar Mesa offers visitors the chance to experience a very unique remote canyon system, containing a very high density of world-renowned cultural sites
Management Goals	Integrated management between the BLM and NPS to provide outstanding recreational opportunities and visitor experiences, while protecting natural and cultural resource values.
Management Objectives	By the year 2013, manage this zone to provide opportunities for visitors to engage in Backcountry, middlecountry, frontcountry, and rural cultural appreciation recreation, providing no less than 75% of responding visitors and affected community residents at least a moderate realization of these benefits: (i.e., 3.0 on a probability scale where 1 = not at all, 2 = somewhat, 3 = moderate, 4 = total realization).

Targeted Outcomes		
Primary Activities	**Experiences**	**Benefits**
Cultural site visitation Rock art viewing Backcountry hiking and backpacking Horseback riding Camping OHV riding Wilderness education Research Photography Ranger Station visitation	Achievement/stimulation Sense of leadership Risk Family togetherness Learning about nature Introspection Nostalgia Exercise/physical fitness Physical rest Escape physical pressure Teaching others Sense of place	***Personal:*** Psychological (mental health maintenance) Personal development and growth Personal appreciation and satisfaction Improved physical health ***Household and Community:*** Greater household awareness of and appreciation for cultural heritage Reduced numbers of at-risk youth Enhanced lifestyle ***Economic:*** Reduced health maintenance costs Positive contributions to local-regional economic stability Increased local job opportunities Greater diversification of local job offerings Increased local tourism revenue ***Environmental:*** Maintenance of distinct recreation setting character Reducing looting and vandalism of historic and pre-historic sites Sustaining community's cultural heritage Increased awareness and protection of natural landscapes

E.2.1 Cedar Mesa Cultural Special Recreation Management Area

Setting Prescriptions		
Physical	**Social**	**Administrative**
Backcountry, middlecountry, frontcountry, and rural, which is generally natural in appearance.	See Summary of Impacts Table, Table 2.1 of Chapter 2.	Brochures are available for information opportunities. Agency presence is frequent (Kane Gulch Ranger Station) Mandatory fee permit system Maintain non-motorized and motorized recreation.

E.2.2 Dark Canyon Special Recreation Management Area

Market Strategy	Undeveloped
Market	National, Regional, and Local Visitors seeking premier and unique hiking and backpacking experiences (including Commercial Wilderness Groups).
Niche	Dark Canyon offers visitors the chance to experience a very unique remote canyon system, which begins in the sub-alpine ecological zone and ends in the desert zone on the banks of the Colorado River.
Management Goals	Integrated management between the BLM, USFS and NPS to provide outstanding recreational opportunities and visitor experiences, while protecting natural and cultural resource values.
Management Objectives	By the year 2012, manage this zone to provide opportunities for visitors to engage in Backcountry muscle-powered exercise and cultural appreciation recreation, providing no less than 75% of responding visitors and affected community residents at least a moderate realization of these benefits: (i.e., 3.0 on a probability scale where 1 = not at all, 2 = somewhat, 3 = moderate, 4 = total realization).

Targeted Outcomes		
Primary Activities	**Experiences**	**Benefits**
Backcountry hiking and backpacking Canyoneering Horseback riding Rock Art viewing Cultural site visitation Swimming Wilderness therapy and education	Achievement/stimulation Sense of leadership Risk Family togetherness Learning about nature Introspection Nostalgia Exercise/physical fitness Physical rest Escape physical pressure Teaching others Sense of place	***Personal:*** Psychological (mental health maintenance) Personal development and growth Personal appreciation and satisfaction Improved physical health ***Household and Community:*** Greater household awareness of and appreciation for cultural heritage Reduced numbers of at-risk youth Enhanced lifestyle ***Economic:*** Reduced health maintenance costs Positive contributions to local-regional economic stability Increased local job opportunities Greater diversification of local job

E.2.2 Dark Canyon Special Recreation Management Area

		offerings Increased local tourism revenue ***Environmental:*** Maintenance of distinct recreation setting character Reducing looting and vandalism of historic and pre-historic sites Sustaining community's cultural heritage Increased awareness and protection of natural landscapes
Setting Prescriptions		
Physical Primarily backcountry, which is generally natural in appearance and is primarily non-roaded due to its Wilderness Study Area designation.	**Social** See Summary of Impacts Table, Table 2.1 of Chapter 2.	**Administrative** Brochures are available for information opportunities. Agency presence is minimal Maintain non-mechanized recreation other than designated access roads.

E.2.3 Indian Creek Special Recreation Management Area

Market Strategy	Destination
Market	International, National, Regional, and Local visitors (including commercial groups) seeking premier and unique climbing, hiking, camping, scenic, photographic, and OHV recreation opportunities and experiences in a spectacular American southwest landscape, including Newspaper Rock National Historic Landmark, and is the direct route to the Needles District of Canyonlands National Park.
Niche	Indian Creek offers visitors the chance to experience a very unique remote landscape, which contains a world-renowned sandstone crack climbing area, a high number of cultural sites, a popular OHV access area, rare paleontological formations, and camping opportunities.
Management Goals	Integrated management between the BLM, NPS, and The Nature Conservancy to provide outstanding recreational opportunities and visitor experiences, while protecting natural and cultural resource values.
Management Objectives	By the year 2013, manage this zone to provide opportunities for visitors to engage in Backcountry, Middlecountry, Frontcountry, and Rural activities and cultural appreciation recreation, providing no less than 75% of responding visitors and affected community residents at least a moderate realization of these benefits: (i.e., 3.0 on a probability scale where 1 = not at all, 2 = somewhat, 3 = moderate, 4 = total realization).

E.2.3 Indian Creek Special Recreation Management Area

Targeted Outcomes		
Primary Activities Rock climbing OHV riding Backcountry hiking and backpacking Horseback riding Rock art viewing Sight-seeing Cultural site visitation Swimming Camping Wilderness education Research	**Experiences** Achievement/stimulation Sense of leadership Risk Family togetherness Learning about nature Introspection Nostalgia Exercise/physical fitness Physical rest Escape physical pressure Teaching others Sense of place	**Benefits** ***Personal:*** Psychological (mental health maintenance) Personal development and growth Personal appreciation and satisfaction Improved physical health ***Household and Community:*** Greater household awareness of and appreciation for cultural heritage Reduced numbers of at-risk youth Enhanced lifestyle ***Economic:*** Reduced health maintenance costs Positive contributions to local-regional economic stability Increased local job opportunities Greater diversification of local job offerings Increased local tourism revenue ***Environmental:*** Maintenance of distinct recreation setting character Reducing looting and vandalism of historic and pre-historic sites Sustaining community's cultural heritage Increased awareness/protection of natural landscapes
Setting Prescriptions		
Physical Backcountry, middlecountry, frontcountry, and rural which is generally natural in appearance.	**Social** See Summary of Impacts Table, Table 2.1 of Chapter 2.	**Administrative** Brochures are available for information opportunities. Agency presence is frequent Maintain non-motorized and motorized recreation.

E.2.4 San Juan River Special Recreation Management Area

Market Strategy	Destination
Market	International, National, Regional, and Local visitors (including numerous commercial groups) seeking premier and unique river recreation opportunities and experiences in a spectacular American southwest canyon.
Niche	The San Juan River offers visitors the chance to experience a very unique remote canyon river system, which passes through world-renowned geological formations and riverside cultural sites.
Management Goals	Integrated management between the BLM, NPS, and the Navajo Nation to provide outstanding recreational opportunities and visitor experiences, while protecting natural and cultural resource values.
Management Objectives	By the year 2013, manage this zone to provide opportunities for visitors to engage in Backcountry river-running, camping, and cultural appreciation recreation, providing no less than 75% of responding visitors and affected community residents at least a moderate realization of these benefits: (i.e., 3.0 on a probability scale where 1 = not at all, 2 = somewhat, 3 = moderate, 4 = total realization).

Targeted Outcomes		
Primary Activities	**Experiences**	**Benefits**
Backcountry river-running Backcountry hiking and backpacking Horseback riding Rock art viewing Cultural site visitation Swimming Fishing Camping Wilderness education Commercial river-running River-related research	Achievement/stimulation Sense of leadership Risk Family togetherness Learning about nature Introspection Nostalgia Exercise/physical fitness Physical rest Escape physical pressure Teaching others Sense of place	***Personal:*** Psychological (mental health maintenance) Personal development and growth Personal appreciation and satisfaction Improved physical health ***Household and Community:*** Greater household awareness of and appreciation for cultural heritage Reduced numbers of at-risk youth Enhanced lifestyle ***Economic:*** Reduced health maintenance costs Positive contributions to local-regional economic stability Increased local job opportunities Greater diversification of local job offerings Increased local tourism revenue ***Environmental:*** Maintenance of distinct recreation setting character Reducing looting and vandalism of historic and pre-historic sites Sustaining community's cultural heritage Increased awareness and protection of natural landscapes

E.2.4 San Juan River Special Recreation Management Area

Setting Prescriptions		
Physical	**Social**	**Administrative**
Primarily backcountry and middlecountry, which is generally natural in appearance and is primarily non-roaded.	See Summary of Impacts Table, Table 2.1 of Chapter 2.	Brochures are available for information opportunities. Agency presence is frequent (Sand Island Ranger Station) Mandatory fee permit system Maintain non-mechanized recreation other than designated access roads.

E.2.5 White Canyon Special Recreation Management Area

Market Strategy	Undeveloped
Market	Regional and Local Visitors seeking premier and unique slot canyon hiking and backpacking experiences.
Niche	White Canyon offers visitors the chance to experience very unique slot canyons and the backcountry surrounding Natural Bridges National Monument.
Management Goals	Integrated management between the BLM and NPS (including the Glen Canyon National Recreation Area and Natural Bridges National Monument) to provide outstanding recreational opportunities and visitor experiences, while protecting natural and cultural resource values.
Management Objectives	By the year 2013, manage this zone to provide opportunities for visitors to engage in Backcountry recreation, including camping, providing no less than 75% of responding visitors and affected community residents at least a moderate realization of these benefits: (i.e., 3.0 on a probability scale where 1 = not at all, 2 = somewhat, 3 = moderate, 4 = total realization).

Targeted Outcomes		
Primary Activities	**Experiences**	**Benefits**
Backcountry hiking and backpacking Canyoneering Rock art viewing Cultural site visitation Wilderness therapy and education	Achievement/stimulation Sense of leadership Risk Family togetherness Learning about nature Introspection Nostalgia Exercise/physical fitness Physical rest Escape physical pressure Teaching others Sense of place	***Personal:*** Psychological (mental health maintenance) Personal development and growth Personal appreciation and satisfaction Improved physical health ***Household and Community:*** Greater household awareness of and appreciation for cultural heritage Reduced numbers of at-risk youth Enhanced lifestyle ***Economic:*** Reduced health maintenance costs Positive contributions to local-regional economic stability Increased local job opportunities Greater diversification of local job

E.2.5 White Canyon Special Recreation Management Area

		offerings Increased local tourism revenue ***Environmental:*** Maintenance of distinct recreation setting character Reducing looting and vandalism of historic and pre-historic sites Sustaining community's cultural heritage Increased awareness and protection of natural landscapes
Setting Prescriptions		
Physical Primarily backcountry and middlecountry, which is generally natural in appearance and is primarily non-roaded.	**Social** See Summary of Impacts Table, Table 2.1 of Chapter 2.	**Administrative** Agency presence is minimal Maintain non-mechanized recreation other than designated access roads. Provide primitive campground opportunities May implement permit system, as necessary

APPENDIX F. GUIDANCE FOR PIPELINE CROSSINGS

F.1 HYDRAULIC CONSIDERATIONS FOR PIPELINE CROSSINGS OF STREAM CHANNELS

Pipeline crossings of perennial, intermittent, and ephemeral stream channels should be constructed to withstand floods of extreme magnitude to prevent breakage and subsequent accidental contamination of runoff during high flow events. Surface crossings must be constructed high enough to remain above the highest possible stream flows at each crossing, and subsurface crossings must be buried deep enough to remain undisturbed by scour throughout passage of the peak flow. To avoid repeated maintenance of such crossings, hydraulic analysis should be completed in the design phase to eliminate costly repair and potential environmental degradation associated with pipeline breaks at stream crossings.

F.1.1 SURFACE CROSSINGS

Pipelines that cross stream channels on the surface should be located above all possible flood flows that may occur at the site. At a minimum, pipelines must be located above the 100-year flood elevation, and preferably above the 500-year flood elevation. Procedures for estimating 100-year and 500-year flood magnitudes are described in the U.S. Geological Survey's National Flood Frequency Program (Jennings et al. 1994). Two sets of relationships for estimating flood frequencies at ungauged sites in Utah are included in the NFF program: Thomas and Lindskov (1983) use drainage basin area and mean basin elevation for flood estimates for six Utah regions stratified by location and basin elevation. Thomas et al (1997) also use drainage area and mean basin elevation to estimate magnitude and frequency of floods throughout the southwestern U.S., including five regions that cover the entire state of Utah. Results from both sets of equations should be examined to estimate the 100- and 500-year floods, since either of the relations may provide questionable results if the stream crossing drains an area near the boundary of a flood region or if the data for the crossing approach or exceed the limits of the data set used to develop the equations.

Estimating the depth of flow, or conversely the elevation of the pipeline at the crossing, may be approached a number of ways. The simplest procedure would be based solely on a field reconnaissance of the site, using basic geomorphic principles. Identification of the bank-full elevation and the active floodplain (i.e., floodplain formed by the present flow regime) provides inadequate conveyance for extreme flood events. Past floodplains/present terraces also must be identified, since these represent extreme floods in the present flow regime, especially in arid and semi-arid environments. Pipeline crossings should be constructed to elevate the pipeline above the level of the highest and outermost terrace at the crossing. This level represents the geomorphic surface likely to be associated with the maximum probable flood. Since this method is entirely based on a geomorphic reconnaissance of the site, no flood-frequency analysis is required and no recurrence interval is assigned to the design elevation. While this is the simplest approach to design of the crossing, it likely will result in the most conservative estimate (i.e., highest elevation) for suspension of the pipeline.

A slightly more intensive approach to crossing design is based on the Physiographic Method described by Thomas and Lindskov (1983) for estimating flood depths at ungauged sites. The

procedure utilizes regional regression equations (similar to the flood-frequency equations described above) to estimate depth of flow associated with a specified recurrence-interval flood. Flood depth is then added to a longitudinal survey of the stream channel in the vicinity of the crossing, resulting in a longitudinal profile of the specified flood. Elevation of the flood profile at the point of pipeline crossing is the elevation above which the pipeline must be suspended. While this procedure requires a field survey and calculation of actual flood depths, it may result in a lower crossing elevation (and possibly lower costs) for the pipeline. Also, since the regional regression equations estimate flood depth for specified recurrence-interval floods, it is possible to place a recurrence interval on the crossing design for risk calculations.

It may be possible to reduce pipeline construction costs associated with channel crossings even further with a water-surface-profile model of flow through the crossing site. The water-surface-profile model requires a detailed survey of both the longitudinal channel profile and several cross sections along the stream. Design flows (e.g., 100-year and 500-year floods) are calculated for the channel at the crossing (with the regional regression equations described above) and routed through the surveyed channel reach utilizing a step-backwater analysis. The step-backwater analysis uses the principles of conservation of mass and conservation of energy to calculate water-surface elevations at each surveyed cross section. Since the computation utilizes a detailed channel survey, it is probably the most accurate method to use; however, it is likely the most expensive method for the same reason. The step-backwater computations require an estimate of the Manning n-value as an indicator of resistance to flow, and assume fairly stable channel boundaries. Estimates of the n-value for ungauged sites are a matter of engineering judgment, but n-values typically are a function of slope, depth of flow, bed-material particle size, and bedforms present during the passage of the flood wave. Guidance is available in many hydraulic references (e.g., Chow 1959). The assumption of fairly stable channel boundaries is not always met with sand-bed channels, and is an issue of considerable importance for designing subsurface pipeline crossings as well (see below).

F.1.2 SUBSURFACE (BURIED) CROSSINGS

Since many of the pipelines are small and most of the channels are ephemeral, it is commonplace to bury the pipelines rather than suspending them above the streams. The practice of burying pipelines at channel crossings likely is both cheaper and easier than suspending them above all flood flows; however, an analysis of channel degradation and scour should be completed to ensure the lines are not exposed and broken during extreme runoff events. Without such an analysis, pipeline crossings should be excavated to bedrock and placed beneath all alluvial material.

Buried pipelines may be exposed by stream bed lowering resulting from channel degradation, channel scour, or a combination of the two. Channel degradation occurs over a long stream reach or larger geographic area, and is generally associated with the overall lowering of the landscape. Degradation also may be associated with changes in upstream watershed or channel conditions impacting the water and sediment yield of the basin. Channel scour is a local phenomenon associated with passage of one or more flood events and/or site-specific hydraulic conditions that may be natural or man-caused in origin. Either process can expose buried pipelines to excessive forces associated with extreme flow events, and an analysis of each is required to ensure integrity of the crossing.

Detection of long-term channel degradation must be attempted, even if there is no indication of local scour. Plotting bed elevations against time permits evaluation of bed-level adjustment and indicates whether a major phase of channel incision has passed or is ongoing. However, comparative channel survey data are rarely available for the proposed location of a pipeline crossing. In instances where a gauging station is operated at or near the crossing, it's usually possible to determine long-term aggradation or degradation by plotting the change in stage through time for one or more selected discharges. The procedure is called a specific gauge analysis and is described in detail in the Stream Corridor Restoration manual published by the Federal Interagency Stream Restoration Working Group (1998). When there is no gauging station near the proposed pipeline crossing, nearby locations on the same stream or in the same river basin may provide a regional perspective on long-term channel adjustments. However, specific gauge records indicate only the conditions in the vicinity of the particular gauging station and do not necessarily reflect river response farther upstream or downstream of the gauge. Therefore, it is advisable to investigate other data in order to make predictions about potential channel degradation at a site.

Other sources of information include the biannual bridge inspection reports required in all states for bridge maintenance. In most states, these reports include channel cross-sections or bed elevations under the bridge, and a procedure similar to specific gauge analysis may be attempted. Simon (1989, 1992) presents mathematical functions for describing bed level adjustments through time, fitting elevation data at a site to either a power function or an exponential function of time. Successive cross sections from a series of bridges in a basin also may be used to construct a longitudinal profile of the channel network; sequential profiles so constructed may be used to document channel adjustments through time.

In the absence of channel surveys, gauging stations, and bridge inspection reports (or other records of structural repairs along a channel), it may be necessary to investigate channel aggradation and degradation using quantitative techniques described in Richardson et al. (2001) and Lagasse et al. (2001). Techniques for assessing vertical stability of the channel include incipient motion analysis, analysis of armoring potential, equilibrium slope analysis, and sediment continuity analysis. Geomorphic indicators of recent channel incision (e.g., obligate and facultative riparian species on present-day stream terraces elevated above the water table) also may be helpful for diagnosing channel conditions.

In addition to long-term channel degradation at the pipeline crossing, local scour of the crossing must be addressed for pipeline safety. Local scour occurs when sediment transport through a stream reach is greater than the sediment load being supplied from upstream and is usually associated with changes in the channel cross section. Local scour can occur in natural channels wherever a pipeline crosses a constriction in the channel cross section (contraction scour). Equations for calculating contraction scour generally fall into two categories, depending on the inflow of bed-material sediment from upstream. In situations where there is little to no bed-material transport from upstream (generally coarse-bed streams with gravel and larger bed materials), contraction scour should be estimated using clear-water scour equations. In situations where there is considerable bed-material transport into the constricted section (i.e., for most sand-bed streams), contraction scour should be estimated using live-bed scour equations. Live-bed and clear-water scour equations can be found in many hydraulic references (e.g., Richardson and Davis 2001). In either case, estimates of local scour in the vicinity of the pipeline crossing

must be added to the assessment of channel degradation for estimating the depth of burial for the crossing.

Even in the absence of contraction scour, local scour will still occur in most sand-bed channels during the passage of major floods. Since sand is easily eroded and transported, interaction between the flow of water and the sand bed results in different configurations of the stream bed with varying conditions of flow. The average height of dune bedforms is roughly one-third to one-half the mean flow depth, and maximum height of dunes may nearly equal the mean flow depth. Thus, if the mean depth of flow in a channel was 5 feet, maximum dune height could also approach 5 feet, half of which would be below the mean elevation of the stream bed (Lagasse et al. 2001). Similarly, Simons, Li and Associates (1982) present equations for antidune height as a function of mean velocity, but limit maximum antidune height to mean flow depth. Consequently, formation of antidunes during high flows not only increases mean water-surface elevation by one-half the wave height, it also reduces the mean bed elevation by one-half the wave height. Richardson and Davis (2001) report maximum local scour of one to two times the average flow depth where two channels come together in a braided stream.

Pipeline crossings that are buried rather than suspended above all major flow events should address all of the components of degradation, scour, and channel-lowering due to bedforms described above. In complex situations or where consequences of pipeline failure are significant, consideration should be given to modeling the mobile-bed hydraulics with a numerical model such as HEC-6 (U.S. Army Corps of Engineers 1993) or BRI-STARS (Molinas 1990). The Federal Interagency Stream Corridor Restoration manual (FISRWG 1998) summarizes the capabilities of these and other models, and provides references for model operation and user guides where available.

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APPENDIX G. NOXIOUS WEED CONTROL AND ERADICATION ACT OF 2004

NOXIOUS WEED CONTROL ACT S 144 ES

108th CONGRESS
2d Session
S. 144

AN ACT

To require the Secretary of Agriculture to establish a program to provide assistance to eligible weed management entities to control or eradicate noxious weeds on public and private land.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. NOXIOUS WEED CONTROL AND ERADICATION.

The Plant Protection Act (7 U.S.C. 7701 et seq.) is amended by adding at the end the following new subtitle:

SUBTITLE E--NOXIOUS WEED CONTROL AND ERADICATION

SEC. 451. SHORT TITLE.

This subtitle may be cited as the Noxious Weed Control and Eradication Act of 2004.

SEC. 452. DEFINITIONS.

In this subtitle:

(1) INDIAN TRIBE- The term "Indian Tribe" has the meaning given that term in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450b).

(2) WEED MANAGEMENT ENTITY- The term 'weed management entity" means an entity that--

(A) is recognized by the State in which it is established;

(B) is established for the purpose of or has demonstrable expertise and significant experience in controlling or eradicating noxious weeds and increasing public knowledge and education concerning the need to control or eradicate noxious weeds;

(C) may be multijurisdictional and multidisciplinary in nature;

(D) may include representatives from Federal, State, local, or, where applicable, Indian Tribe governments, private organizations, individuals, and State-recognized conservation districts or State-recognized weed management districts; and

(E) has existing authority to perform land management activities on Federal land if the proposed project or activity is on Federal lands.

(3) FEDERAL LANDS- The term "Federal lands" means those lands owned and managed by the United States Forest Service or the Bureau of Land Management.

SEC. 453. ESTABLISHMENT OF PROGRAM.

(a) In General- The Secretary shall establish a program to provide financial and technical assistance to control or eradicate noxious weeds.

(b) Grants- Subject to the availability of appropriations under section 457(a), the Secretary shall make grants under section 454 to weed management entities for the control or eradication of noxious weeds.

(c) Agreements- Subject to the availability of appropriations under section 457(b), the Secretary shall enter into agreements under section 455 with weed management entities to provide financial and technical assistance for the control or eradication of noxious weeds.

SEC. 454. GRANTS TO WEED MANAGEMENT ENTITIES.

(a) Consultation and Consent- In carrying out a grant under this subtitle, the weed management entity and the Secretary shall--

(1) if the activities funded under the grant will take place on Federal land, consult with the heads of the Federal agencies having jurisdiction over the land; or

(2) obtain the written consent of the non-Federal landowner.

(b) Grant Considerations- In determining the amount of a grant to a weed management entity, the Secretary shall consider--

(1) the severity or potential severity of the noxious weed problem;

(2) the extent to which the Federal funds will be used to leverage non-Federal funds to address the noxious weed problem;

(3) the extent to which the weed management entity has made progress in addressing the noxious weeds problem; and

(4) other factors that the Secretary determines to be relevant.

(c) Use of Grant Funds; Cost Shares-

(1) USE OF GRANTS- A weed management entity that receives a grant under subsection (a) shall use the grant funds to carry out a project authorized by subsection (d) for the control or eradication of a noxious weed.

(2) COST SHARES-

(A) FEDERAL COST SHARE- The Federal share of the cost of carrying out an authorized project under this section exclusively on non-Federal land shall not exceed 50 percent.

(B) FORM OF NON-FEDERAL COST SHARE- The non-Federal share of the cost of carrying out an authorized project under this section may be provided in cash or in kind.

(d) Authorized Projects- Projects funded by grants under this section include the following:

(1) Education, inventories and mapping, management, monitoring, methods development, and other capacity building activities, including the payment of the cost of personnel and equipment that promote control or eradication of noxious weeds.

(2) Other activities to control or eradicate noxious weeds or promote control or eradication of noxious weeds.

(e) Application- To be eligible to receive assistance under this section, a weed management entity shall prepare and submit to the Secretary an application containing such information as the Secretary shall by regulation require.

(f) Selection of Projects- Projects funded under this section shall be selected by the Secretary on a competitive basis, taking into consideration the following:

(1) The severity of the noxious weed problem or potential problem addressed by the project.

(2) The likelihood that the project will prevent or resolve the problem, or increase knowledge about resolving similar problems.

(3) The extent to which the Federal funds will leverage non-Federal funds to address the noxious weed problem addressed by the project.

(4) The extent to which the program will improve the overall capacity of the United States to address noxious weed control and management.

(5) The extent to which the weed management entity has made progress in addressing noxious weed problems.

(6) The extent to which the project will provide a comprehensive approach to the control or eradication of noxious weeds.

(7) The extent to which the project will reduce the total population of noxious weeds.

(8) The extent to which the project promotes cooperation and participation between States that have common interests in controlling and eradicating noxious weeds.

(9) Other factors that the Secretary determines to be relevant.

(g) Regional, State, and Local Involvement- In determining which projects receive funding under this section, the Secretary shall, to the maximum extent practicable--

(1) rely on technical and merit reviews provided by regional, State, or local weed management experts; and

(2) give priority to projects that maximize the involvement of State, local and, where applicable, Indian Tribe governments.

(h) Special Consideration- The Secretary shall give special consideration to States with approved weed management entities established by Indian Tribes and may provide an additional allocation to a State to meet the particular needs and projects that the weed management entity plans to address.

SEC. 455. AGREEMENTS.

(a) Consultation and Consent- In carrying out an agreement under this section, the Secretary shall--

(1) if the activities funded under the agreement will take place on Federal land, consult with the heads of the Federal agencies having jurisdiction over the land; or

(2) obtain the written consent of the non-Federal landowner.

(b) Application of Other Laws- The Secretary may enter into agreements under this section with weed management entities notwithstanding sections 6301 through 6309 of title 31, United States Code, and other laws relating to the procurement of goods and services for the Federal Government.

(c) Eligible Activities- Activities carried out under an agreement under this section may include the following:

(1) Education, inventories and mapping, management, monitoring, methods development, and other capacity building activities, including the payment of the cost of personnel and equipment that promote control or eradication of noxious weeds.

(2) Other activities to control or eradicate noxious weeds.

(d) Selection of Activities- Activities funded under this section shall be selected by the Secretary taking into consideration the following:

(1) The severity of the noxious weeds problem or potential problem addressed by the activities.

(2) The likelihood that the activity will prevent or resolve the problem, or increase knowledge about resolving similar problems.

(3) The extent to which the activity will provide a comprehensive approach to the control or eradication of noxious weeds.

(4) The extent to which the program will improve the overall capacity of the United States to address noxious weed control and management.

(5) The extent to which the project promotes cooperation and participation between States that have common interests in controlling and eradicating noxious weeds.

(6) Other factors that the Secretary determines to be relevant.

(e) Regional, State, and Local Involvement- In determining which activities receive funding under this section, the Secretary shall, to the maximum extent practicable--

(1) rely on technical and merit reviews provided by regional, State, or local weed management experts; and

(2) give priority to activities that maximize the involvement of State, local, and, where applicable, representatives of Indian Tribe governments.

(f) Rapid Response Program- At the request of the Governor of a State, the Secretary may enter into a cooperative agreement with a weed management entity in that State to enable rapid response to outbreaks of noxious weeds at a stage which rapid eradication and control is possible and to ensure eradication or immediate control of the noxious weeds if--

(1) there is a demonstrated need for the assistance;

(2) the noxious weed is considered to be a significant threat to native fish, wildlife, or their habitats, as determined by the Secretary;

(3) the economic impact of delaying action is considered by the Secretary to be substantial; and

(4) the proposed response to such threat--

(A) is technically feasible;

(B) economically responsible; and

(C) minimizes adverse impacts to the structure and function of an ecosystem and adverse effects on nontarget species and ecosystems.

SEC. 456. RELATIONSHIP TO OTHER PROGRAMS.

Funds under this Act (other than those made available for section 455(f)) are intended to supplement, not replace, assistance available to weed management entities, areas, and

districts for control or eradication of noxious weeds on Federal lands and non-Federal lands. The provision of funds to a weed management entity under this Act (other than those made available for section 455(f)) shall have no effect on the amount of any payment received by a county from the Federal Government under chapter 69 of title 31, United States Code.

SEC. 457. AUTHORIZATION OF APPROPRIATIONS.

(a) Grants- To carry out section 454, there are authorized to be appropriated to the Secretary $7,500,000 for each of fiscal years 2005 through 2009, of which not more than 5 percent of the funds made available for a fiscal year may be used by the Secretary for administrative costs.
(b) Agreements- To carry out section 455 of this subtitle, there are authorized to be appropriated to the Secretary $7,500,000 for each of fiscal years 2005 through 2009, of which not more than 5 percent of the funds made available for a fiscal year may be used by the Secretary for administrative costs of Federal agencies.'.

SEC. 2. TECHNICAL AMENDMENT.

The table of sections in section 1(b) of the Agricultural Risk Protection Act of 2000 is amended by inserting after the item relating to section 442 the following:

Subtitle E--Noxious Weed Control and Eradication

Sec. 451. Short title.
Sec. 452. Definitions.
Sec. 453. Establishment of program.
Sec. 454. Grants to weed management entities.
Sec. 455. Agreements.
Sec. 456. Relationship to other programs.
Sec. 457. Authorization of Appropriations.'.

Passed the Senate October 10, 2004.

Attest:

Secretary.

108th CONGRESS
2d Session
S. 144
AN ACT

To require the Secretary of Agriculture to establish a program to provide assistance to eligible weed management entities to control or eradicate noxious weeds on public and private land.

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APPENDIX H. SPECIAL DESIGNATIONS

TABLE OF CONTENTS

H.1 Summary List of Existing and Nominated ACECs – Monticello Field Office

Existing (E) or Nominated	Nominator(s)	Acres of BLM land in proposed boundary	Potential ACEC (Yes/No)	Comments
Alkali Ridge (E)	BLM Monticello	39,202	Yes	
Bridger Jack Mesa (E)	BLM Monticello	6,260	Yes	
Butler Wash North (E)	BLM Monticello	17,463	Yes	
Canyonlands	SUWA	175,365 as nominated	No	See Indian Creek, Bridger Jack Mesa, Lavender, Shay Canyon – all (E)
Cedar Mesa (E)	BLM Monticello, SUWA	320,609 includes Valley of the Gods 34,771	Yes	Compilation of boundary proposal
Dark Canyon (E)	BLM Monticello, SUWA	61,659	Yes	Compilation of boundary proposal
Hovenweep (E)	BLM Monticello	2,438	Yes	Modified from existing
Indian Creek (E) / Lockhart Basin	BLM Monticello, BLM Moab, and SUWA	Indian Creek: 8,509 existing; Lockhart Basin including Indian Creek 56,293	Yes	Compilation of boundary proposals
Lavender Mesa (E)	BLM Monticello	649	Yes	
Monument Canyon	SUWA	46,830 as nominated	No	
Redrock Plateau	SUWA	323,473 as nominated	No	
San Juan River	SUWA	22,179 as nominated; 7,626 as evaluated	Yes	
Scenic Highway Corridor (E)	BLM Monticello	79,017	No	
Shay Canyon (E)	BLM Monticello	119	Yes	Modified from existing
Valley of the Gods	BLM Monticello	34,771 (See Cedar Mesa above)	Yes	Was a Special Emphasis Area within Cedar Mesa
White Canyon	SUWA	101,377 as nominated	No	
Total		512,318		

H.2 Relevance and Importance Criteria Evaluations For Existing and Nominated ACECs

ALKALI RIDGE EXISTING ACEC			
General Location	**General Description**	**Acreage**	**Values Considered**
Alkali Ridge lies between Alkali Canyon and Montezuma Canyon in the eastern portion of the resource area.	This area is one of the best known and influential examples of scientific archeological investigation in the Southwestern United State. There is a National Historic Landmark (2,340 acres) within the ACEC.	39,202	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:

To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:

An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	Yes No	Cultural - This area contains numerous large structural sites that have revealed evidence of the full range of prehistoric pueblo occupation from Basketmaker II to Pueblo III (500-1300 AD) and represent the defining morphological site type for the prehistoric Pueblo II cultural period (900-1150 AD). Scenic – The ID Team determined that scenic relevant resources were not found in the area.
A fish and wildlife resource (including but not limited to habitat and endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).	No	The ID Team determined that a Fish and Wildlife resource was not considered relevant for this area.
A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).	No	The ID Team determined that a natural process or system of relevance was not found in this area.
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).	No	The ID Team found no natural hazards in this area.

Importance:

The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource, value, process, system, or hazard is characterized by one or more of the following:

ALKALI RIDGE EXISTING ACEC		
Important Values	**Yes/No**	**Values and Rationale for Determination**
Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. For Monticello Field Office consideration, criteria for cultural value includes evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.	Yes	Cultural - The cultural resources located in this area are regionally and nationally significant, and include Basketmaker and Pueblo village sites often reaching densities of 200 sites per square mile.
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.	Yes	Cultural - The cultural resources found here are irreplaceable and extremely vulnerable to oil and gas exploration and development, intense pot hunting, increased site visitation, and road maintenance in the area. Vegetative manipulation associated with grazing and agricultural activities has also contributed to damaged cultural resources in the past.
Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.	Yes	Cultural – The area contains the Alkali Ridge National Historic Landmark (2,340 acres), managed for information potential and public values. Cultural resources are the subject of national protective laws, regulations, and policy.
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or public welfare.		None identified.
Poses a significant threat to human life and safety or to property.		None identified.
Summary of Important Values: • The Alkali Ridge ACEC provides protective management for a large number of high density cultural sites of the Basketmaker and Pueblo cultures.		
Suggested Special Management Prescriptions: FLPMA Section 103(a): The term "areas of critical environmental concern" means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.		
Suggested Special Management Conditions, and Notes: Alkali Ridge ACEC (39,202 acres) - Cultural, contains a National Historic Landmark (2,340 acres**) -** would be maintained and would continue to be managed with the current management prescriptions: • Where riparian areas overlap this ACEC, the special conditions for floodplain and riparian /aquatic areas would take precedence. • Requirements of appropriate regulations would be met. • Within the Alkali Ridge NHL, all cultural resources would be avoided by 100 feet. • All cultural properties eligible for the National Register of Historic Places would be surrounded by an avoidance area sufficient to allow permanent protection. • If cultural resources or their avoidance areas cannot be avoided, appropriate mitigation would be applied; such measures range from limited testing to extensive excavation. • In any given situation, mitigation would be designed to fit the specific circumstances and reviewed		

ALKALI RIDGE EXISTING ACEC

by the State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation.

- Open for mineral leasing – Surface use limited by special conditions.
- Open for geophysical work.
- Available for the disposal of mineral materials.
- Open to locatable mineral entry with an approved plan of operations.
- Retained in public ownership and not classified, segregated or withdrawn from entry.
- Available for private and commercial use of woodland products.
- Available to livestock use.
- Available for land treatments or other range improvements.
- Subject to conditional fire suppression.
- OHV use limited to existing roads and trails.
- Managed as VRM Class III.
- Surface disturbance would be limited to what can be successfully established within 5 years after project completion.
- Available for wildlife habitat improvement.

Add the following changes in management prescriptions:

- Surface disturbance would be limited to what can be successfully established within 5 years after project completion - The ID Team recommends deleting the "5 year" requirement from management prescriptions.
- OHV use Limited to Designated roads and trails.
- Woodland Products – ID Team: in conflict, may have to change wood gathering stipulations, area-wide problem.
- Livestock Use – could be restricted if cultural resources are being impacted.
- Available for watershed improvements.
- In vegetative treatments for grazing, avoid cultural sites and NHL. ID Team: Possibly adjust to state no surface disturbing treatments.
- Appropriate Management Response to fire.

Field Manager Concurrence:

___ I concur with the above evaluation of the existing Alkali Ridge ACEC

___ I concur with the above evaluation with the following changes:

_____ Date: _____

Sandra A. Meyers
Field Office Manager

[Notes: The ID Team recommends carrying the existing Alkali Ridge ACEC forward as Management Common to All for protection of cultural values including Alkali Ridge NHL, with some change in the management prescriptions.]

BRIDGER JACK MESA EXISTING ACEC			
General Location	**General Description**	**Acreage**	**Values Considered**
Bridger Jack Mesa is located in the Indian Creek Corridor on the west side of Scenic Highway 211.	Bridger Jack Mesa ACEC covers a large mesa top consisting of pinyon-juniper woodland and sagebrush-grass parks. The mesa is public land except for approximately 420 acres of state land.	6,260	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:
To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:
An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	No	An inventory for cultural resources has not been done in this area.
A fish and wildlife resource (including but not limited to habitat and endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).	No	The ID Team determined that a Fish and Wildlife relevant resource was not found in this area.
A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).	Yes	Near-relict plant community - The near-relict plant community remains unaltered by human intervention. The cliffs surrounding the mesa top form a natural boundary providing a relatively isolated area that has not been grazed since 1957. Bridger Jack Mesa is, therefore, a natural exclosure for study of a vegetative community released from grazing by domestic livestock.
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).	No	The ID Team found no natural hazards in this area.

Importance:
The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource, value, process, system, or hazard is characterized by one or more of the following:

Important Values	Yes/No	Values and Rationale for Determination
Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. For Monticello Field Office	Yes	Near-relict plant community - Bridger Jack Mesa provides a control area to study the recovery of pinyon-juniper woodland and sagebrush-grass communities from livestock grazing. The vegetative community is important for study and comparison purposes to design management for pinyon-juniper

BRIDGER JACK MESA EXISTING ACEC		
consideration, criteria for cultural value include evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.		woodlands and sagebrush-grass communities in other parts of the Colorado Plateau, and is, therefore, more than locally significant.
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.	Yes	Near-relict plant community - The area offers an unimpacted area naturally protected from other resource activities for comparative studies and research.
Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.		None identified
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or public welfare.		None identified
Poses a significant threat to human life and safety or to property.		None identified

Summary of Important Values:

- Near-relict vegetation for comparative studies for rangeland health and management.

Suggested Special Management Prescriptions:

FLPMA Section 103(a): The term "areas of critical environmental concern", means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

Suggested Special Management Conditions, and Notes:

Bridger Jack Mesa ACEC (6,260 acres) - Range Management Program / Near-relict Vegetation value - would be maintained and would continue to be managed with the following management prescriptions:

- Open for mineral leasing – No Surface Occupancy (NSO) on the mesa top; available for geophysical work.
- Closed to the disposal of mineral materials.
- Open to locatable mineral entry with approved plan of operations, subject to stipulations precluding surface use of the mesa top, insofar as possible.
- Retained in public ownership and not classified, segregated, or withdrawn from entry.
- Excluded from livestock grazing, including grazing by saddle stock and pack animals allowed for access.
- Excluded from land treatments or other improvements, except for test plots and facilities necessary for study of the near-relict plant communities.
- Closed to OHV use.
- Subject to conditional fire suppression.
- Managed to limit recreation use if vegetation resources are being damaged.
- Semiprimitive nonmotorized (SPNM) ROS class.
- Excluded from private or commercial use of woodland products, except for limited onsite collection of dead wood for campfires.
- Excluded from wildlife habitat improvements.
- Excluded from watershed control structures.
- Excluded from surface disturbance by mechanized or motorized equipment, except helicopter

BRIDGER JACK MESA EXISTING ACEC
access for scientific study and heliportable equipment; insofar as legally possible. • Excluded from improvements for wildlife habitat, watershed, or vegetative treatments. Add the following changes to management prescriptions based on current BLM policy: • Category 4 mineral leasing within WSA boundary. • Manage WSA as VRM I class. • Appropriate Management Response to fire. • Surface disturbance would be limited to what can be successfully established within 5 years after project completion-- <u>The ID Team recommends deleting the "5 year" requirement from management prescriptions.</u>
Field Manager Concurrence: ___ I concur with the above evaluation of the existing Bridger Jack ACEC ___ I concur with the above evaluation with the following changes: _____ Date: _____ Sandra A. Meyers Field Office Manager
[Notes: The ID Team recommends carrying the existing Bridger Jack ACEC forward as Management Common to All for protection of near-relict plant communities with a few changes in the management prescriptions].

BUTLER WASH EXISTING ACEC			
General Location	**General Description**	**Acreage**	**Values Considered**
Butler Wash North ACEC is located south of and adjacent to Canyonlands National Park, and includes Butler Wash, and several forks of Salt Creek.	The Butler Wash North ACEC is noted for its rugged terrain composed of high buttes, domes, and sandstone spires. The southern part of the ACEC flat areas drop abruptly into the heads of the various forks of Salt Creek.	17,463	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:

To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:

An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	Yes No	Scenic - The scenic values of this area are a continuation of the remarkable rock formations – spires, domes and buttes -- seen in the adjacent Needles District of Canyonlands National Park. Gray, cream, coral and red sandstones band the walls of the canyons of Salt Creek. Cultural – no cultural inventory has been done in this area.
A fish and wildlife resource (including but not limited to habitat and endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).	No	The ID Team determined that a fish and wildlife relevant resource was not found in this area.
A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).	No	The ID Team determined that a natural process or system of relevance was not found in this area.
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).	No	The ID Team found no natural hazards in this area.

Importance:

The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource, value, process, system, or hazard is characterized by one or more of the following:

Important Values	Yes/No	Values and Rationale for Determination
Has more than locally significant qualities which give it special worth, consequence, meaning,	Yes	Scenic - The scenic values are important to regional, national, and international visitors who travel to Canyonlands NP and backpack into the remote, natural

BUTLER WASH EXISTING ACEC		
distinctiveness, or cause for concern, especially compared to any similar resource. For Monticello Field Office consideration, criteria for cultural value include evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.		areas adjacent to the park. Salt Creek is one such area. The scenic values of the park and those of the Butler Wash North ACEC are not separated at the boundary but are interrelated with the national park.
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.	Yes	Scenic - Without protective management prescriptions, the unique scenic values could be damaged by other resource uses, such as potential oil and gas development, mineral disposal, and increasing recreational vehicle activities.
Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.		None identified.
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or public welfare.		None identified.
Poses a significant threat to human life and safety or to property.		None identified.

Summary of Important Values:

- Scenic quality.

Suggested Special Management Prescriptions:

FLPMA Section 103(a): The term "areas of critical environmental concern", means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

Suggested Special Management Conditions, and Notes:

Butler Wash North ACEC (17,463 acres) - Scenic value **-** would continue to be managed with the following management prescriptions under a No Action alternative:

- Managed under the special conditions developed for ROS-P class areas.
- Open for mineral leasing – No Surface Occupancy; however, the area manager would grant an exception to the NSO stipulation in the event it is determined through an EA, or EIS if necessary, with the adoption and use of appropriate mitigation measures, that the project would meet visual quality standards for the area.
- Available for geophysical work.
- Closed to disposal of mineral materials.
- Open to mineral entry with an approved plan of operations.
- Retained in public ownership and not classified, segregated, or withdrawn from entry.
- Excluded from private and commercial use of woodland products, except for limited onsite collection of dead wood for campfires.
- Available for livestock use.
- Subject to conditional fire suppression, with motorized suppression methods used only if necessary to protect life or property.
- Closed to OHV use.
- Managed to limit recreation use if scenic values are being damaged.
- Managed as VRM Class I.

BUTLER WASH EXISTING ACEC
• Add the following change to the management prescriptions: • Surface disturbance would be limited to what can be successfully established within 1 year after project completion - The ID Team recommends deleting the "1 year" requirement from management prescriptions.
Field Manager Concurrence: ___ I concur with the above evaluation of the existing Butler Wash North ACEC ___ I concur with the above evaluation with the following changes: _____ Date: _____ Sandra A. Meyers Field Office Manager
[**Notes**: The ID Team recommends that Butler Wash North ACEC be included in a range of alternatives to protect scenic values. An alternative to the current ACEC management is that the scenic values of Butler Wash North could be protected under the VRM class objectives].

CEDAR MESA EXISTING ACEC			
General Location	**General Description**	**Acreage**	**Values Considered**
Cedar Mesa ACEC is located on the southern boundary of the field office bounded by Comb Wash on the east, Highway 163 and Glen Canyon NRA on the south and State Highway 276 on the west. The Valley of the Gods area is in the southeastern portion of the ACEC bounded on the west by Rte 261 and on the south by St 163.	This ACEC encompasses the Grand Gulch Archeological District, the Grand Gulch Primitive Area, and two special emphasis areas, Grand Gulch for its cultural emphasis, and Valley of the Gods for its scenic values.	295,335 (Includes 4,240 acres in Grand Gulch, and 34,771 in Valley of the Gods)	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:

To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:

An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	Yes Yes Yes	Cultural - The Grand Gulch/Cedar Mesa area was extensively occupied by the Puebloan culture from before CE 500 to 1270. In surveyed areas, site densities of 20-200 sites per square mile have been recorded. The sites are of many types and include lithic scatters, petroglyph and pictograph panels, Basketmaker pit houses and pit structures, Puebloan kivas, multi-room surface swellings, granaries, and cliff dwellings. Many are nearly or totally in tact. The area probably contains the greatest concentration of Basketmaker II and III sites in the Southwest. Grand Gulch is also known particularly for its well preserved cliff dwellings and variety of rock art. Five major sets of data [artifacts, environment, stratigraphy, architecture, and rock art] are available for scientific study and visitor viewing. Recent research has demonstrated that Grand Gulch/Cedar Mesa has been occupied for over 7,000 years. Most of the occupation has taken place in the large dry alcoves, but some sites are also located on the benches at the bottom of the gulch. Cultural sites are present in the Arch Canyon area of the existing Cedar Mesa ACEC. Arch Canyon ruin has unique architectural elements that are one-of-a-kind in this area. Scenic - Valley of the Gods Special Emphasis Area (31,387 acres) is a valley of multi colored, differently - shaped sandstone buttes and spires, surrounded on the north and east by high canyon walls. There is an unpaved rough dirt road [17 miles] running through the area that provides a different scenic view looking in every direction.
A fish and wildlife resource (including but not limited to habitat and	Yes	Fish and Wildlife- Arch Canyon: T & E species – designated critical habitat for Mexican spotted owl, and

CEDAR MESA EXISTING ACEC		
endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).		potential habitat for the Southwestern willow flycatcher. Sensitive species: Bluehead sucker, Flannelmouth sucker. Riparian habitat essential for amphibians and neo-tropical migratory birds.
A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).	No	The ID Team determined that a natural process or system of relevance was not found in this area.
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).	No	The ID Team found no natural hazards in this area.
Importance: The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource, value, process, system, or hazard is characterized by one or more of the following:		
Important Values	**Yes/No**	**Values and Rationale for Determination**
Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. For Monticello Field Office consideration, criteria for cultural value include evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.	Yes Yes Yes	Cultural - Cultural resources in the Cedar Mesa/Grand Gulch area are of regional, national, and worldwide significance because of the wealth of intact Basketmaker and Pueblo cliff dwellings; preservation of the sites is excellent. Scenic - The Valley of the Gods area draws regional, national and international visitation to its unique and accessible scenic vistas. Fish and Wildlife - Arch Canyon: Designated critical habitat for Mexican spotted owl, and state sensitive species are present in Arch Canyon.
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.	Yes Yes	Cultural - Protection of the fragile cultural resources found here is important because they are irreplaceable and extremely vulnerable to activities that create adverse change in the sites. Intense recreational use threatens the cultural resources through surface collection, site trampling, pot hunting, and the consequent increase in erosion. This refers to both Grand Gulch and Arch Canyon sites. Scenic - The incursion of some uses and activities could cause adverse surface disturbance and damage to the scenic quality and value of the Valley of the Gods area.
Has been recognized as warranting protection in order to satisfy national	Yes	Cultural - The Cedar Mesa/Grand Gulch area is listed in the National Register of Historic Places. Even though

CEDAR MESA EXISTING ACEC		
priority concerns or to carry out the mandates of FLPMA.	Yes	numerous artifacts have been removed from the area, both legally and illegally since the 1890s, an enormous amount of material remains for scientific study by archeologists. Grand Gulch/Cedar Mesa is the location where Richard Wetherill was finally able to demonstrate that a cultural groups he identified as the Basketmakers predated the prehistoric Pueblo people. This concept has become a basic underpinning of Southwestern Archeology, and is one of the significant discoveries in North American Archeology. Cultural resources are the subject of national protective laws, regulations, and policy. <u>Fish and Wildlife</u> Arch Canyon – T & E species have designated critical habitat; and state sensitive species are present in Arch Canyon.
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or public welfare.		None identified.
Poses a significant threat to human life and safety or to property.		None identified.

Summary of Important Values:

- Cultural site types with densities between 20-200 sites per square mile in surveyed areas;
- The Valley of the Gods Special Emphasis Area has nationally recognized scenic values; and
- The Arch Canyon area has nationally listed fish / wildlife habitat, and cultural values – Mexican spotted owl and Southwestern willow flycatcher, and presence of state sensitive species: Bluehead sucker, Flannelmouth sucker.

Suggested Special Management Prescriptions:

FLPMA Section 103(a): The term "areas of critical environmental concern", means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

Suggested Special Management Conditions, and Notes:

Cedar Mesa ACEC (295,335 acres) - Cultural includes Grand Gulch Archaeologic District, Recreation/Primitive Area/Natural Area values **-** would be maintained and would continue to be managed under the Cultural and Recreation/Scenic programs with the following management prescriptions:

<u>Cedar Mesa</u>:

- The Scenic Highway Corridor overlaps; the special conditions for Scenic Highway Corridor ACEC take precedence.
- Where riparian areas overlap Cedar Mesa ACEC, the special conditions for floodplains and riparian/aquatic areas take precedence.
- The ROS special conditions include both P and SPNM classes apply, and would be managed for these classes.
- Measures that limit surface disturbance serve cultural resource objectives by reducing direct and indirect impacts.
- Cultural properties eligible for the National Register of Historic Places would be surrounded by an avoidance area sufficient to allow permanent protection.
- If cultural resources or their avoidance areas cannot be avoided, appropriate mitigation would be applied; such measures range from limited testing to extensive excavation.

CEDAR MESA EXISTING ACEC

- In any given case, mitigation would be designed to fit the specific circumstances and reviewed by the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation. THE Cedar Mesa Management Plan developed for the ACEC would guide sire protection, data recovery, and all other necessary cultural management activities.
- Surface disturbance would be limited to what can be successfully established within 5 years after project completion - The ID Team recommends deleting the "5 year" requirement from management prescriptions.
- Open for mineral leasing [categories 2, 3, and 4]– Surface use limited by special conditions.
- Available for geophysical work.
- Open to disposal of mineral materials.
- Open to mineral entry with an approved plan of operations.
- Retained in public ownership and not classified, segregated, or withdrawn from entry.
- Available for livestock use.
- Available for land treatments or other range improvements.
- Available for wildlife habitat improvements.
- Subject to conditional fire suppression with motorized suppression methods used only if necessary to protect life or property.
- Excluded from surface disturbance by mechanized or motorized equipment.
- OHV use Limited to designated roads/trails.
- Available for private and commercial use of woodland products in designated areas, except that onsite collection of dead fuelwood for campfires would be allowed throughout the area.

Add the following changes to management prescriptions for Cedar Mesa ACEC:

- Category 4 mineral leasing within WSA boundary, otherwise, mineral lease equivalent of category 2 with avoidance of cultural sites.
- Manage WSA as VRM I class.
- Woodcutting is restricted in WSAs.
- Appropriate Management Response to fire.
- Open for disposal of mineral materials with compliance for protection of cultural resources.
- Woodland Harvest – ID Team: see general woodland alternatives development – popular with NA. Consultation with Native Americans will take place.
- Available for watershed improvements.
- Surface disturbance would be limited to what can be successfully established within 5 years after project completion - The ID Team recommends deleting the "5 year" requirement from management prescriptions.

Grand Gulch (37,433 acres) - Special Emphasis Area for Cultural and Recreational [natural values associated with primitive recreation] / Scenic values

- Managed for ROS P class to provide primitive recreation opportunities in the ROS areas.
- ROS P class areas protected from surface disturbance to the maximum extent possible.
- Closed to mineral leasing in Grand Gulch Special Emphasis area.
- Open to leasing with NSO in ROS p class areas.
- Available for geophysical work except Grand Gulch Special Emphasis area.
- Closed to disposal of mineral materials.
- Retained in public ownership and classified as segregated from entry (a Secretarial withdrawal would be requested).
- Excluded from private and commercial use of woodland products, except for limited onsite collection of dead wood for campfires.
- Available for livestock use, except Grand Gulch itself, below Kane Gulch fence to the confluence with the San Juan River.
- Closed to OHV use.
- Managed to limit recreation use if cultural resources or scenic values are being damaged
- Managed as VRM I class in WSA.

CEDAR MESA EXISTING ACEC

- Subject to conditional fire suppression with motorized suppression methods used only if necessary to protect life or property.
- Excluded from surface disturbance by mechanized or motorized equipment.
- Mining Entry – has it been withdrawn? Still segregated? Maxine will check and fix it.
- Livestock used excluded from Grand Gulch itself.
- Surface disturbance – ID Team.
- Excluded from habitat and watershed improvements, with stipulations that exempt special circumstances from exclusion, such as fire management, ruin stabilization, or excluded unless no practical alternative exists and then it would be minimal, only as necessary to achieve.
- Excluded from range improvements except for non-motorized weed removal.

Valley of the Gods (34,771 acres) - Special Emphasis Area for Scenic Value

- Surface disturbance would be managed to be compatible with VRM I class criteria.
- Open for mineral leasing – No Surface Occupancy; however, the manager would grant an exception to the NSO stipulation in the event it is determined through an EA or EIS, if necessary, with the adoption and use of appropriate mitigation measures, that the project would meet visual quality standards for the area.
- Available for geophysical work.
- Available for disposal of mineral materials with an approved plan of operations.
- Open to mineral entry with an approved plan of operations.
- Retained in public ownership and not classified, segregated, or withdrawn from entry.
- Available for private and commercial use of woodland products in designated areas, except that onsite collection of dead fuelwood for campfires would be allowed throughout the area.
- Available for livestock use.
- Managed as VRM I class, with projects that meet these visual quality standards allowed.
- Subject to conditional fire suppression.
- OHV use on designated roads/trails.
- Subject to conditional fire suppression.
- Open for improvements of vegetation.

Add the following management prescriptions for the area of potential **Arch Canyon Special Emphasis Area (2,910 acres):**

- Surface disturbance would be limited to what can be successfully established within 1 year after project completion - The ID Team recommends deleting the "1 year" requirement from management prescriptions.
- Open for mineral leasing with No Surface Occupancy.
- Closed to disposal of mineral materials.
- Open to mineral entry with approved plan of operations.
- Retained in public ownership and not classified, segregated, or withdrawn from entry.
- Closed to livestock use.
- Either Closed to OHV use OR Designated to existing road and trails with seasonal closures – See OHV determination alternatives.
- Excluded from use of woodland products except for limited onsite collection of dead wood for campfires.
- Subject to conditional fire suppression with motorized suppression methods used only if necessary to protect life and property.
- Managed as VRM inventoried class.
- Open for improvements in habitat, and watershed.
- Open for vegetative treatments.

Notes: Documented public interest includes concern by professional archeologists, recreational users, individuals, and the Utah SHPO over preserving the cultural resources found here [Cedar Mesa] for public and scientific uses.

CEDAR MESA EXISTING ACEC
Field Manager Concurrence: ___ I concur with the above evaluation of the existing Cedar Mesa ACEC with Special Emphasis Areas of Grand Gulch and Valley of the Gods, and potentially Arch Canyon as a Special Emphasis Area for fish / wildlife, and cultural values within the Cedar Mesa ACEC ___ I concur with the above evaluation with the following changes: _____ Date: _____ Sandra A. Meyers Field Office Manager
[The ID Team recommends that the existing Cedar Mesa ACEC be carried forward as Management Common to All, with the changes noted above to management prescriptions for protection of the unique, exemplary cultural values; or within the following potential alternatives: The ID Team recommends that the Valley of the Gods be included in a range of alternatives as either a stand-alone potential ACEC and therefore, released as a Special Emphasis Area from within the boundaries of the Cedar Mesa ACEC. If the Valley of the Gods is determined a stand-alone ACEC, the Scenic relevant value follows the Valley of the Gods and is deleted from the values determined for Cedar Mesa ACEC, leaving Cedar Mesa as a potential ACEC for cultural value. The ID Team recommends that Arch Canyon be considered a Special Emphasis Area for fish / wildlife, cultural values within the Cedar Mesa ACEC. See Maps]

DARK CANYON EXISTING ACEC			
General Location	**General Description**	**Acreage**	**Values Considered**
Dark Canyon ACEC is located on the western boundary of the field office adjacent to Glen Canyon NRA on the west, and on the east the Dark Canyon Wilderness Area (45,000 acres) of the Manti-LaSal NF.	Dark Canyon ACEC is surrounded by National Forest and National Park Service lands. This area is primitive, roadless and undeveloped in nature. It is limited to access due to the canyon rims which form a natural boundary, which help to protect its natural scenery and wildlife values. The area includes Dark, Gypsum, and Fable Valley and several smaller side canyons all of which are part of the Colorado River drainage.	61,659	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:

To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:

An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	Yes No	Scenic - Dark Canyon is one of the deepest canyon systems in the region. The remote location, dramatic rugged terrain, and undeveloped naturalness of the area contribute to an area of high scenic value. The canyon has unobstructed and expansive views including 1,200 foot vertical cliffs, rimrock, outcrops and spires, pour offs and potholes, and color contrasts between soil and rock, flowing water, and diverse vegetation. Cultural: The density of cultural sites in this area is not as prevalent as in Alkali Ridge or Cedar Mesa, thus fewer sites are impacted. No cultural resource inventory has been done in this area.
A fish and wildlife resource (including but not limited to habitat and endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).	Yes Yes Yes	Wildlife - Dark Canyon is within designated critical habitat for the Mexican spotted owl. Important habitat for peregrine falcon and other raptors. The peregrine falcon has been delisted; however, it is mandated that management support the continued viability of the species. Presence of a large variety of wildlife including at the lower elevations ringtail cats, desert bighorn sheep, and bobcats; at the higher elevations, black bear, deer, elk, and mountain lions.
A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological	No	The ID Team determined that a natural process or system of relevance was not found in this area.

DARK CANYON EXISTING ACEC		
features).		
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).	No	The ID Team found no natural hazards in this area.
Importance: The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource, value, process, system, or hazard is characterized by one or more of the following:		
Important Values	**Yes/No**	**Values and Rationale for Determination**
Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. For Monticello Field Office consideration, criteria for cultural value include evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.	Yes Yes Yes No	Scenic – The naturalness of the area, the elevations changes and vertical canyon walls, with the diversity of vegetation and rock formations contribute, and the national and international recognition of Dark Canyon as a destination contributes to its importance with more than locally significant quality. The proximity to Glen Canyon NRA, the Colorado River, Canyonlands NP, and the Manti-LaSal National Forest contribute to Dark Canyon as a visitation destination for primitive backcountry experience. Wildlife – Designated critical habitat for Mexican spotted owl, a T & E species. Important habitat for peregrine falcon and other raptors – it is mandated that management support the continued viability of the peregrine falcon. Presence of a large variety of wildlife including at the lower elevations ringtail cats, desert bighorn sheep, and bobcats; at the higher elevations, black bear, deer, elk, and mountain lions. These species are found in other areas locally.
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.	Yes Yes	Scenic – This area includes a variety of terrain not usually found in a desert environment – mountainous (8,800 feet) to the desert (3,700 feet) with a wide range of visual diversity. There is potential for adverse impacts due to the increasing recreational use and activities in the Dark Canyon area. Wildlife - Designated critical habitat for Mexican spotted owl; owl pairs are known to inhabit Dark Canyon.
Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.	Yes	Wildlife - Designated critical habitat for Mexican spotted owl, a T & E species.
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or		None identified.

DARK CANYON EXISTING ACEC		
public welfare.		
Poses a significant threat to human life and safety or to property.		None identified.

Summary of Important Values:

- Scenic quality;
- Mexican Spotted owl critical habitat and presence; and
- Important habitat for peregrine falcon and other raptors.

Suggested Special Management Prescriptions:

FLPMA Section 103(a): The term "areas of critical environmental concern", means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

Suggested Special Management Conditions, and Notes:

Dark Canyon ACEC - Recreation/Natural Area values, Visual/VRM, 61,659 acres - would be maintained and would continue to be managed with the following management prescriptions:

- Closed to mineral leasing.
- Closed to mineral entry.
- Segregated from entry.
- Closed to livestock use.
- Subject to conditional fire suppression.
- Closed to OHV use.
- Managed as VRM I class.
- Closed to gathering of woodland products.
- <u>Surface disturbance if can be reclaimed after 1 year ID Team recommends that this prescription be taken out of the management prescriptions.</u>

Add the following change to management prescriptions:

- Conditionally allowed improvements for wildlife habitat, watershed, and vegetative treatments that meet VRM I class management.

Field Manager Concurrence:

___ I concur with the above evaluation of the existing Dark Canyon ACEC

___ I concur with the above evaluation with the following changes:

_____ Date: _____

Sandra A. Meyers

Field Office Manager

[Notes: The ID Team recommends that the existing Dark Canyon ACEC be carried forward as Management Common to All, with the change noted above to management prescriptions for protection of the scenic and wildlife values.]

HOVENWEEP EXISTING ACEC			
General Location	**General Description**	**Acreage**	**Values Considered**
Hovenweep ACEC is located on the eastern boundary of the field office and adjacent to Hovenweep National Monument (NPS).	Hovenweep ACEC is adjacent to the Square Tower Unit of Hovenweep National Monument (NPS), and was designated to protect cultural and wildlife values with two special emphasis areas, Cajon Pond (10 acres), and a visual protection zone (880 acres) for the unobstructed viewing of cultural sites.	1,798 plus about 620 acres [See Notes below] Total of 2,438	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:

To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:

An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	Yes Yes	Scenic – The visual protection zone [Special Emphasis Area 880 acres] provides for unobstructed viewing of cultural sites at Hovenweep NM. Cultural – An adjacent area in Colorado was designated as Canyons of the Ancients National Monument (COANM) on June 9, 2000 by Presidential proclamation to protect cultural and natural resources on a landscape scale. Hovenweep ACEC contains cultural resources in the same vicinity and of the same types, and adds cohesiveness to the management of the cultural resources of the two National Monuments.
A fish and wildlife resource (including but not limited to habitat and endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).	Yes	Wildlife – Habitat Management –The Special Emphasis Area at Cajon Pond, a constructed reservoir covering approximately 10 acres, provides important habitat for migrating waterfowl and other wildlife in a desert, semi-arid climate that has very little surface water present.
A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).	No	The ID Team determined that a natural process or system of relevance was not found in this area.
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).	No	The ID Team found no natural hazards in this area.

Importance

The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource,

HOVENWEEP EXISTING ACEC		
value, process, system, or hazard is characterized by one or more of the following:		
Important Values	**Yes/No**	**Values and Rationale for Determination**
Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. For Monticello Field Office consideration, criteria for cultural value include evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.	Yes Yes	Scenic, Cultural – Hovenweep ACEC provides an additional area of protection to cultural values of the NPS Hovenweep National Monument located on the Utah / Colorado border, and consistency with COANM on the western Colorado border. Wildlife – Habitat Management - Included in the items listed under the cooperative management agreement (1987) with the National Park Service for Hovenweep NM were the protection and maintenance of wildlife habitat [resources] that enhance viewing associated with interpretive efforts, and the protection of riparian zones and springs associated with cultural resources.
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.	Yes Yes	Cultural – The Hovenweep ACEC provides an opportunity to provide interagency cooperation and coordination of protection of unique, irreplaceable cultural values managed by multiple agencies. Wildlife – Habitat Management - A riparian area with cattails and sedges, Cajon Pond provides cover and a food source for several species of wildlife and migrating waterfowl; some waterfowl inhabit the area year-round.
Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.	Yes	Scenic, Cultural, Wildlife Habitat Management – Hovenweep ACEC provides an additional area of protection to the NPS Hovenweep National Monument located on the Utah / Colorado border. In April 1987 a document titled, *Cooperative Management Strategies* was signed by the BLM Colorado State Director, the BLM Utah State Director, and the NPS Regional Director of the Rocky Mountain Region. The strategies were developed for a "Resource Protection Zone associated with the Square Tower, Holly, Hackberry, and Cutthroat Castle units of Hovenweep National Monument. …These strategies are intended to provide for the protection, research, and interpretation of cultural resources within the resource protection zone while maintaining the concept of multiple-use on BLM lands." Hovenweep ACEC connects the adjacent boundary of COANM in Colorado for the same purpose, protection of cultural values. Cultural resources are the subject of national protective laws, regulations, and policy.
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or public welfare.		None identified.
Poses a significant threat to human life and safety or to property.		None identified.
Summary of Important Values:		

HOVENWEEP EXISTING ACEC

- Cultural values and a visual protection zone for Hovenweep National Monument (NPS-Cultural); and
- Wildlife habitat / riparian zone associated with interagency cultural resources by joint agency agreement.

Suggested Special Management Prescriptions:

FLPMA Section 103(a): The term "areas of critical environmental concern", means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

Suggested Special Management Conditions, and Notes:

Hovenweep ACEC (1,798 acres) - Cultural, Habitat Management values - would be maintained with the following management prescriptions -

Cultural/Visual zone:

- Where riparian areas overlap Hovenweep ACEC, the special conditions for floodplains and riparian/aquatic areas take precedence.
- Measures that limit surface disturbance serve cultural resource objectives by reducing direct and indirect impacts.
- Within Hovenweep ACEC, cultural properties eligible for the National Register of Historic Places would be avoided by 100 feet.
- Cultural properties eligible for the National Register of Historic Places would be surrounded by an avoidance area sufficient to allow permanent protection.
- If cultural resources or their avoidance areas cannot be avoided, appropriate mitigation would be applied; such measures range from limited testing to extensive excavation.
- In any given case, mitigation would be designed to fit the specific circumstances and reviewed by the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation. THE Cedar Mesa Management Plan developed for the ACEC would guide sire protection, data recovery, and all other necessary cultural management activities.
- Revegetation efforts with surface disturbance must be successfully established within 5 years after project completion - The ID Team recommends deleting the "5 years" requirement from management prescriptions.
- Open for mineral leasing – surface use limited by special conditions.
- Open for geophysical work.
- Closed to disposal of mineral materials.
- Open to mineral entry with an approved plan of operation.
- Retained in public ownership and not classified, segregated, or withdrawn from entry.
- Available for livestock use.
- Subject to conditional fire suppression.
- OHV use limited to designated roads/trails in entire area.
- Excluded from private or commercial use of woodland products, except for limited onsite collection of dead wood for campfires.
- Open for improvement in habitat, watershed and vegetation treatments.

Visual Protective Zone (880 acres):

- Open for mineral leasing with stipulations to prevent surface occupancy (Category 3).
- Excluded from watershed and grazing (vegetative) treatment improvement.

Cajon Pond (Habitat):

- Open for mineral leasing and other surface uses with stipulations to prevent surface occupancy or surface disturbance during the shorebird and waterfowl courtship and nesting season (March 1 through June 30, (category 2).
- Excluded from livestock use within the fenced portion (about 1 acre).

Notes: The Hovenweep ACEC provides a visual buffer for Hovenweep National Monument (NPS), protection of like-cultural values, and a wildlife habitat/riparian zone associated with interagency cultural resources.

HOVENWEEP EXISTING ACEC
Field Manager Concurrence: ___ I concur with the above evaluation of the existing / modified Hovenweep ACEC ___ I concur with the above evaluation with the following changes: _____ Date: _____ Sandra A. Meyers Field Office Manager
[Proposal for Modification - Potential Increase in Hovenweep ACEC boundary and acreage: Since the designation of this ACEC in the 1991 RMP, BLM has acquired an additional parcel of land, approximately 620+ acres, that is adjacent on the east of the BLM Hovenweep ACEC and a state section, and is also on the western boundary of the Canyon of the Ancients NM (COANM) in Colorado. It is proposed that this parcel of approximately 620+ acres be added to the current BLM Hovenweep ACEC. The additional acreage will fill in a previously privately owned parcel between the two national monuments and contribute to consistent management of the cultural value. Hovenweep National Monument is under the jurisdiction of the National Park Service, and COANM is under the jurisdiction of the Colorado BLM, both are areas established to protect cultural values. The added acreage would be contiguous with the current BLM [Utah] Hovenweep ACEC; the total acres of the ACEC including the acquisition would be 2,438. See Maps]

INDIAN CREEK EXISTING ACEC			
General Location	**General Description**	**Acreage**	**Values Considered**
Indian Creek ACEC is located in the northern area of the FO, east of and adjacent to Canyonlands NP / Needles District.	The Indian Creek ACEC protects the scenic view from Needles Overlook across BLM land into Canyonlands NP. The area includes the lower end of Indian Creek and Rustler Canyon. The ACEC is corresponds roughly with the Indian Creek WSA, but is slightly larger.	8,509	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:

To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:

An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	Yes No	Scenic – The Indian Creek ACEC is noted for its incised, meandering canyons which wind through dark red mudstones, forming many rounded spires, and "hoo-doos", boulders atop eroded rock that look like mushrooms. These various formations continue uninterrupted into the national park. Cultural – No cultural inventory has been done in this area.
A fish and wildlife resource (including but not limited to habitat and endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).	No	The ID Team determined that a fish and wildlife relevant resource was not found in this area.
A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).	No	The ID Team determined that a natural process or system of relevance was not found in this area.
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).	No	The ID Team found no natural hazards in this area.

Importance;

The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource, value, process, system, or hazard is characterized by one or more of the following:

Important Values	Yes/No	Values and Rationale for Determination
Has more than locally significant qualities which give it special worth,	Yes	Scenic - The scenic values are based on the rock formations in the area similar to those found in

INDIAN CREEK EXISTING ACEC		
consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. For Monticello Field Office consideration, criteria for cultural value include evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.		Canyonlands NP, which contains some of the most unique land forms in the world [Shiozwa and Larson, 1980]. Visitors from around the world come to view this area from overlooks across BLM land and NPS Canyonlands NP.
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.	No	Scenic – Although the area is scenic quality A when viewed from the overlook, from the basin it appears less natural due to resource activities that have taken place in the past within the basin, and which could further impact the scenic values.
Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.		None identified.
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or public welfare.		None identified.
Poses a significant threat to human life and safety or to property.		None identified.
Summary of Important Values: • Scenic value - viewshed from overlooks into Canyonlands NP.		
Suggested Special Management Prescriptions: FLPMA Section 103(a): The term "areas of critical environmental concern", means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.		
Suggested Special Management Conditions, and Notes: Indian Creek ACEC – Scenic value – 8,509 acres, would be maintained and would continue to be managed with the flowing management prescriptions: • Almost all of the ACEC would be in ROS-P class areas. • Surface disturbance would be limited to that for which vegetation could be successfully within 1 year after project completion. • All vegetation must be with native species naturally occurring in the vicinity. • Open for mineral leasing with stipulations to prevent surface occupancy (category 3) NSO; however, the are manager would grant an exception to the NSO stipulation in the event it is determined through and EA or EIS, is necessary, with the adoption and use of appropriate mitigation measures, that the project would meet visual quality standards for the area. • Available for geophysical work. • Closed to disposal of mineral materials. • Open to mineral entry with an approved plan of operations. • Retained in public ownership and not classified as segregated, or withdrawn from entry. • Excluded from private and commercial use of woodland products, except for limited onsite collection of dead wood for campfires. • Available for livestock use. • Closed to OHV use.		

INDIAN CREEK EXISTING ACEC
• Managed to limit recreation use if scenic values are being damaged. • Managed as VRM I class. • **Subject to conditional fire suppression, with motorized suppression methods used only if necessary to protect life and property.**
Field Manager Concurrence: ___ I concur with the above evaluation of the existing Indian Creek ACEC ___ I concur with the above evaluation with the following changes: _____ Date: _____ Sandra A. Meyers Field Office Manager
[Notes: The ID Team determined that protection of the scenic value of the existing Indian Creek ACEC could be managed based on VRM I under the ROS-P class, and suggested a range of alternatives which could include No Action; release of this ACEC with protection as noted for VRM class objectives; or inclusion of the nominated potential Lockhart Basin ACEC to include Indian Creek ACEC area.]

LAVENDER MESA EXISTING ACEC			
General Location	**General Description**	**Acreage**	**Values Considered**
Lavender Mesa ACEC covers the top of Lavender Mesa, which is located in the Indian Creek corridor of the FO.	Lavender Mesa is isolated and inaccessible to man and herbivores by ground routes, even small mammals such as rabbits and mice appear to be absent. The mesa top provides a relict plant community environment. Most of the mesa is pinyon-juniper woodland with a small 20 acre sagebrush-grass park.	649	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:

To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of Relevance: and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:

An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	No No	Scenic: The ID Team determined that scenic relevant resources were not found in this area. Cultural/Historic: No inventory has been done in this area.
A fish and wildlife resource (including but not limited to habitat and endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).	No	The ID Team determined that a fish and wildlife relevant resource was not found in this area.
A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).	Yes	Relict plant community - The vegetative community present on the top of Lavender Mesa is unique because it has developed without the influence of grazing animals and most other mammals. The area is ecologically relevant because it presents an isolated, relict plant community that remains unaltered by human or animal intervention.
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).	No	The ID Team found no natural hazards in this area.

Importance:

The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource, value, process, system, or hazard is characterized by one or more of the following:

Important Values	Yes/No	Values and Rationale for Determination
Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. For Monticello Field Office consideration,	Yes	Relict plant community - The vegetative community is important for study and comparison purposes to design management for pinyon-juniper woodland and sagebrush-grass communities in other parts of the Colorado Plateau.

LAVENDER MESA EXISTING ACEC		
criteria for cultural value include evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.		
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.	Yes	Relict plant community - The area offers an unimpacted area naturally protected from other resource activities for comparative studies and research.
Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.		None identified.
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or public welfare.		None identified.
Poses a significant threat to human life and safety or to property.		None identified.

Summary of Important Values:

- Relict vegetation for comparative studies for rangeland health and management.

Suggested Special Management Prescriptions:

FLPMA Section 103(a): The term "areas of critical environmental concern", means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

Suggested Special Management Conditions, and Notes:

Lavender Mesa ACEC - Grazing Management Program – Near-relict Vegetation, 649 acres - would be maintained and would continue to be managed with the following management prescriptions:

- Managed to provide a baseline for rangeland studies through research and experiments and to allow for SPNM recreation.
- Managed as ROS-SPNM class.
- Open for mineral leasing with an approved plan of operations, subject to stipulations precluding surface use of the mesa top insofar as possible (NSO).
- Available for geophysical work.
- Closed to disposal of mineral materials.
- Open to mineral entry with an approved plan of operations, subject to stipulations precluding surface use of the mesa top insofar as possible.
- Retained in public ownership and not classified, segregated, or withdrawn from entry.
- Excluded from private or commercial use of woodland products, except for limited onsite collection of dead wood for campfires.
- Excluded from livestock grazing, including grazing by saddle stock and pack animals allowed for access.
- Excluded from land treatments or other improvements, except for test plots and facilities necessary for study of relict plant communities.
- Excluded from wildlife habitat improvements.
- Excluded from watershed control structures.
- Subject to conditional fire suppression.
- Closed to OHV use.

LAVENDER MESA EXISTING ACEC
• Surface disturbance would be limited to that for which revegetation could be successfully established within 5 years after project completion. • Excluded from surface disturbance by mechanized or motorized equipment, except helicopter access for scientific study and heliportable equipment, insofar as possible. Add the following changes to the management prescriptions: • Surface disturbance would be limited to that for which revegetation could be successfully established within 5 years after project completion - The ID Team recommends deleting the "5 years" requirement from management prescriptions. • Vegetative treatment would be allowed to control invasive species and for rehabilitation of disturbed surfaces.
Field Manager Concurrence: ___ I concur with the above evaluation of the existing Lavender Mesa ACEC ___ I concur with the above evaluation with the following changes: _____ Date: _____ Sandra A. Meyers Field Office Manager
[Notes: The ID Team recommends carrying the existing Lavender Mesa ACEC forward as Management Common to All for protection of Relict plant communities with a few changes in the management prescriptions.]

SCENIC HIGHWAY CORRIDOR EXISTING ACEC			
General Location	**General Description**	**Acreage**	**Values Considered**
The Scenic Highway Corridor ACEC covers a visual zone along Highways U-95, U-261, and U-276, and part of the White Canyon viewshed. With the exception of the White Canyon viewshed, the corridor is approximately 1 mile wide. The ACEC includes portions of the canyons north of White Canyon – Fortknocker, Short, Long, Cheesebox, Hideout, and K & L, and surrounds Natural Bridges National Monument (320 acres).	Scenic Highway Corridor ACEC is managed to maintain scenic quality as viewed from the highways (Utah- 95, 261, and 276) in the corridor. In the White Canyon viewshed (U-95 west from U-276), the south boundary of the corridor is the toe of the slope of Fry Point and Windgate Mesa. The north boundary is generally the toe of the slopes of the mesas north of White Canyon. The ACEC contains part of Butler Wash Archaeologic District (2,030 acres), and overlaps a portion of Cedar Mesa ACEC (21,380 acres).	79,017	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:

To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:

An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	No	Cultural - The corridor runs through the existing Cedar Mesa ACEC, which is protected for cultural values. However, the corridor is ½ mile wide on each side of the highway and does not include cultural sites that could be considered relevant. Other cultural values are not generally present within the 1 mile width of the remaining corridor.
	No	Scenic – The ID Team considered the scenic qualities of the area along the corridor and determined both in 1987 and in 2004 that scenic quality was not present as defined by ACEC criteria. The viewsheds and canyons are typical of those found throughout the Colorado Plateau. In the 1991 RMP the Field Office agreed to recognize the visual elements of the highway corridor and their importance to tourism to the state due to the cooperative study efforts in the late 1970's with the state, county and other federal agencies *["U-95", An Interagency Highway Corridor Study of Utah State Highways U-95, U-261, U-263, U-276, Notom Road."]* Route U-95 was subsequently designated [after 1987] a Scenic By-way by the State of Utah*. [Proposed RMP FEIS, Volume 1, Page 1-197, pp 1].*

SCENIC HIGHWAY CORRIDOR EXISTING ACEC		
A fish and wildlife resource (including but not limited to habitat and endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).	No	The ID Team determined that a fish and wildlife relevant resource was not found in this area.
A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).	No	The ID Team determined that a natural process or system of relevance was not found in this area.
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).	No	The ID Team found no natural hazards in this area.
Importance: The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource, value, process, system, or hazard is characterized by one or more of the following:		
Important Values	**Yes/No**	**Values and Rationale for Determination**
Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. For Monticello Field Office consideration, criteria for cultural value include evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.		No relevant value found.
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.		No relevant value found.
Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.		None identified.
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or public welfare.		None identified.
Poses a significant threat to human life and safety or to property.		None identified.

SCENIC HIGHWAY CORRIDOR EXISTING ACEC

Summary of Important Values:

- The ID Team determined that the Scenic Highway Corridor does not meet ACEC criteria for relevance and importance.

Suggested Special Management Prescriptions:

FLPMA Section 103(a): The term "areas of critical environmental concern", means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

Suggested Special Management Conditions, and Notes

The current management prescriptions for the Scenic Highway Corridor (79,017 acres) are included below:

- Surface disturbance would be limited to that for which revegetation could be successfully established within 5 years after project completion.
- All revegetation must be with native species naturally occurring in the area.
- Open for mineral leasing with stipulations to prevent surface occupancy (Category 3); however, the area manager would grant an exception to the NSO stipulation in the event it is determined through and EA or EIS, if necessary, with the adoption and use of appropriate mitigation measures, that the project would meet visual quality standards for the area.
- Available for geophysical work.
- Open to mineral entry with an approved plan of operations.
- Available for disposal of mineral materials subject to visual quality considerations.
- Retained in public ownership and not classified, segregated or withdrawn from entry.
- Available for private and commercial use of woodland products in designated areas except that onsite collection of dead fuelwood for campfires would be allowed throughout the area.
- Available for livestock use.
- OHV use is limited to existing roads and trails, except Grand Gulch SRMA OHV use is limited to designated roads and trails.
- Managed to limit recreation use if scenic values are being damaged.
- Managed as VRM I class, with projects that meet these visual quality standards allowed (those recreation development projects proposed in the 4333 section of this plan would not have to meet the VRM class standards.
- Subject to conditional fire suppression.

Field Manager Concurrence:

___ I concur with the above evaluation of the existing Scenic Highway Corridor ACEC

___ I concur with the above evaluation with the following changes:

_____ Date: _____

Sandra A. Meyers
Field Office Manager

[Notes: The ID Team considered the relevance and importance of the Scenic Highway Corridor and determined it did not meet ACEC criteria. The team recommends that management under other designations within the Cedar Mesa area (WSA, ACEC, SRMA and VRM) would provide protection for scenic values for the area that the corridor passes through. The remaining area could be managed under the inventoried VRM class.]

SHAY CANYON EXISTING ACEC			
General Location	**General Description**	**Acreage**	**Values Considered**
Shay Canyon ACEC is located in the southern portion of the Indian Creek corridor and is adjacent to the northern boundary of the Manti-LsSal National Forest.	Shay Canyon ACEC includes sections of the upper Indian Creek drainage with a Special Emphasis Area for the protection of aquatic and riparian habitat, delineated as a 275-foot corridor along upper Indian Creek. There are dinosaur tracks in the bedrock of Shay Canyon and sweeping panels of rock art on the cliff walls.	Existing: 3,560 Recommended Modification: 119	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:

To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:

An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	Yes	Cultural / Paleontological - Rock art sites are the significant cultural resources along Indian Creek. Native Americans who have visited these sites recognize images that relate to their migration history. Dinosaur tracks in the bottom of the Shay Canyon streambed are a unique visual reminder of the area's distant geologic and natural past.
A fish and wildlife resource (including but not limited to habitat and endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).	No	The ID Team evaluated Shay Canyon that was previously listed as a Special Emphasis Area and determined that there are no relevant fish or wildlife resources currently in the area.
A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).	No	The ID Team determined that a natural process of system of relevance was not found in this area.
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).	No	The ID Team identified no natural hazards in the area.

Importance:

The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource, value, process, system, or hazard is characterized by one or more of the following:

Important Values	Yes/No	Values and Rationale for Determination
Has more than locally significant	Yes	Cultural / Paleontological - Cultural resources in this

SHAY CANYON EXISTING ACEC		
qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. For Monticello Field Office consideration, criteria for cultural value include evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.		area represent the interface between two prehistoric cultural groups: Anasazi and Fremont. This interface is represented in the unique motifs in the rock art. The area provides an opportunity for cultural scientific research, and paleontology study. This is a heavily traveled area by visitors to the Needles District of Canyonlands National Park; Rte 211 is the only way into and out of the park. Needles District reported visitation of 44,333 vehicles in 2003, and 44,400 through the end of July 2004.
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.	Yes	Cultural / Paleontological – Rock art panels are extensive in the area of Shay Canyon and subject to adverse change and damage that can be irreparable without special management attention.
Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.	Yes	Cultural – Cultural resources are the subject of national protective laws, regulations, and policy.
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or public welfare.		None identified.
Poses a significant threat to human life and safety or to property.		None identified.
Summary of Important Values: • Cultural / Paleontological values.		
Suggested Special Management Prescriptions: FLPMA Section 103(a): The term "areas of critical environmental concern", means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.		
Suggested Special Management Conditions, and Notes Shay Canyon ACEC (3,560 acres) - Cultural, and Special Emphasis Area for conservation value - would be maintained with the following management prescriptions: • Where riparian areas overlap part of Shay Canyon ACEC, the special conditions for floodplains and riparian/aquatic areas take precedence. • Measures that limit surface disturbance serve cultural resource objectives by reducing direct and indirect impacts. • Within Shay Canyon ACEC, cultural properties eligible for the National Register of Historic Places would be surrounded by a buffer sufficient to allow permanent protection. If cultural resources or their buffers cannot be avoided, appropriate mitigation would be applied; such measures range from limited testing to extensive excavation. • In any given case, mitigation would be designed to fit the specific circumstances and reviewed by the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation. THE Cedar Mesa Management Plan developed for the ACEC would guide sire protection, data recovery, and all other necessary cultural management activities. • Revegetation efforts for surface disturbance must be successfully established within 5 years after project completion.		

SHAY CANYON EXISTING ACEC

- Open for mineral leasing – Surface use limited by special conditions.
- Open for geophysical work.
- Available for disposal of mineral materials.
- Open to mineral entry with an approved plan of operations.
- Retained in public ownership and not classified, segregated, or withdrawn from entry.
- Excluded from private and commercial use of woodland products except for limited onsite collection of dead fuelwood for campfires.
- Available for livestock use.
- Managed as VRM Class I, with projects that meet these visual quality standards allowed.
- Subject to conditional fire suppression.
- OHV use limited to designated roads/trails.
- Open for improvements in habitat and watershed.

Field Manager Concurrence:

___ I concur with the above evaluation of the existing and modified potential Shay Canyon ACEC

___ I concur with the above evaluation with the following changes:

_____ Date: _____

Sandra A. Meyers
Field Office Manager

[Proposed Modification: The Shay Canyon ACEC boundary could be modified to include only the area surrounding the mouth of Shay Canyon which includes paleontological and cultural sites. Newspaper Rock, further up Indian Creek, is protected through designation as a National Historic Landmark. The Indian Creek stream corridor, likewise, is protected through management conditions for floodplains / riparian areas and does not currently have relevant fish resource values.

The ID Team suggests the modified Shay Canyon ACEC (119 acres) with reduced boundaries in one alternative, and that the Special Emphasis Area for riparian and aquatic conservation be released from all alternatives.]

LOCKHART BASIN ACEC NOMINATION			
General Location	**General Description**	**Acreage**	**Values Considered**
The Lockhart Basin ACEC nomination area is bounded on the north by the Colorado River, on the east by the cliffs of Hatch Point [the Moab and Monticello FOs boundary], and on the west by Canyonlands National Park. The southern boundary lies north of the falls on Indian Creek.	The Lockhart Basin ACEC nomination includes lower Indian Creek, Rustler, Horsethief, and Lockhart Canyons and is nominated to protect scenic values as viewed from the Canyon Rims Overlook.	56,293	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:
To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:
An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	Yes Yes	Scenic - The landform within the north-central nominated area is typified by outstanding rock formations, including rounded spires, high, truncated ledges, and cliffs. Colors range from light pink and white sandstone along the lower Indian Creek areas to white, pink, red, and dark reddish-purple in the ledges and various formations. The color contrasts change by time of day and light cast on the formations. Cultural - The cultural inventory areas within Lockhart Basin reveal a low site density but represent multi-cultural occupations, unique to the canyonlands area of Utah.
A fish and wildlife resource (including but not limited to habitat and endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).	No	Fish and Wildlife - The ID Team determined that there were no relevant wildlife values for this area.
A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).	No	Natural Systems and Processes – The ID Team determined that there were no relevant Natural Systems and Process values for this area.
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).	No	Area not nominated for this natural hazards.

LOCKHART BASIN ACEC NOMINATION		
Importance: The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource, value, process, system, or hazard is characterized by one or more of the following:		
Important Values	**Yes/No**	**Values and Rationale for Determination**
Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. For Monticello Field Office consideration, criteria for cultural value includes evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.	Yes Yes	Scenic – The overlooks from the Needles Overlook provide an extensive viewshed of miles of vistas looking deep into Canyonlands NP. The unique characteristics of landforms, the National Park, the relative pristine nature of the land, the sensitivity of visitors to scenic resources, and the ability of the visitor to view the area from many vantage points makes this an extraordinary and important visual resource. Cultural – unique multi-component sites.
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.	Yes	Scenic - The canyon area below the overlook rim has also been used for grazing and recreation, and for exploration for oil and gas and hardrock minerals. The area is popular for OHV recreational use, and some primitive hiking and camping, primarily along the boundary of Canyonlands NP, which are reasons why this area needs special management attention to protect it from irreparable damage.
Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.		None identified.
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or public welfare.		None identified.
Poses a significant threat to human life and safety or to property.		None identified.
Summary of Important Values: • Scenic quality; and • Cultural values.		
Suggested Special Management Prescriptions: FLPMA Section 103(a): The term "areas of critical environmental concern", means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.		
Suggested Special Management Conditions, and Notes: See management prescriptions for Indian Creek existing ACEC.		

LOCKHART BASIN ACEC NOMINATION
Field Manager Concurrence: ___ I concur with the above evaluation of the potential Lockhart Basin ACEC ___ I concur with the above evaluation with the following changes: _____ Date: _____ Sandra A. Meyers Field Office Manager
[Notes: The ID Team recommended that Lockhart Basin ACEC nomination be included in a range of alternatives, in conjunction with the Indian Creek existing ACEC, for consideration in the planning process.]

VALLEY OF THE GODS ACEC NOMINATION			
General Location	**General Description**	**Acreage**	**Values Considered**
Valley of the Gods lies north of US Highway 163 extending north to the south cliff line of Cedar Mesa. The Valley of the Gods is currently a Special Emphasis Area within the Cedar Mesa existing ACEC.	Valley of the Gods is nominated as a potential ACEC by the BLM Monticello Field Office ID Team based on scenic values of quality and diversity of landforms.	34,771	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:

To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:

An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	No Yes	Cultural – The ID Team determined that cultural resources have not been inventoried in this area. Scenic – Panoramic views can be seen from the highways bordering the area and from the Valley of the Gods Loop (graded gravel and clay, 17 miles) Road. The eroded, wind-sculpted spires and buttes, and long rock fins resemble animals or "gods". Seven Sailors, Rooster Butte, Setting Hen Butte, Pyramid Peak, Castle Butte, and Bell Butte are found here. The West Fork of Lime Creek, Lime Creek, and the northwest portion of Lime Ridge are included in this area.
A fish and wildlife resource (including but not limited to habitat and endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).	No	The ID Team determined that a fish and wildlife relevant resource was not found in this area.
A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).	No	The ID Team determined that a natural process or system of relevance was not found in this area.
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).	No	The ID Team found no natural hazards in this area.

Importance:

The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource, value, process, system, or hazard is characterized by one or more of the following:

VALLEY OF THE GODS ACEC NOMINATION		
Important Values	**Yes/No**	**Values and Rationale for Determination**
Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. For Monticello Field Office consideration, criteria for cultural value include evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.	Yes	Scenic – Valley of the Gods provides significant vistas to those who travel the roads surrounding the nominated ACEC area. The Valley of the Gods is important to regional, national and international visitors who view and photograph the scenery. The majority of those who travel the highway system do not take advantage of backcountry scenery in a natural setting, instead, the view from the roads are their scenic experience in the area. The BLM, the county and the state have promoted the loop road as part of the Trail of the Ancients.
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.	Yes	Scenic - Without protective management prescriptions, the unique scenic values could be damaged by other resource uses, such as potential oil and gas development or mineral-material disposal. Special management attention would limit surface disturbance to protect scenery from potential adverse impacts.
Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.		None identified.
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or public welfare.		None identified.
Poses a significant threat to human life and safety or to property.		None identified.
Summary of Important Values: • Scenic values.		
Suggested Special Management Prescriptions: FLPMA Section 103(a): The term "areas of critical environmental concern", means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.		
Suggested Special Management Conditions, and Notes: Valley of the Gods potential ACEC –34,771 acres, with the following proposed management prescriptions: • Surface disturbance would be managed to be compatible with VRM I class criteria. • Surface disturbance would be limited to what can be successfully established within 1 year after project completion. Revegetation must be with native species naturally occurring in the area. • Open for mineral leasing – No Surface Occupancy; however, the manager would grant an exception to the NSO stipulation in the event it is determined through an EA or EIS, if necessary, with the adoption and use of appropriate mitigation measures, that the project would meet visual quality standards for the area. • Available for geophysical work. • Open to disposal of mineral materials. • Open to mineral entry with an approved plan of operations. • Retained in public ownership and not classified, segregated, or withdrawn from entry. • Available for livestock use. • Available for land treatments or other range improvements.		

VALLEY OF THE GODS ACEC NOMINATION
• Available for wildlife habitat improvements. • Subject to conditional fire suppression with motorized suppression methods used only if necessary to protect life or property. • Excluded from surface disturbance by mechanized or motorized equipment. • OHV use Limited to designated roads/trails. • Available for private and commercial use of woodland products in designated areas, except that onsite collection of dead fuelwood for campfires would be allowed throughout the area.
Field Manager Concurrence: ___ I concur with the above evaluation of the potential Valley of the Gods ACEC ___ I concur with the above evaluation with the following changes: _____ Date: _____ Sandra A. Meyers Field Office Manager
[Notes: The ID Team suggested that Valley of the Gods could be considered for potential ACEC status within a range of alternatives that include leaving it as a Special Emphasis Area within the Cedar Mesa ACEC; releasing it from special designation with management under the VRM class objectives; or as a stand-alone ACEC for scenic values.]

CANYONLANDS ACEC NOMINATION			
General Location	**General Description**	**Acreage**	**Values Considered**
Area east of Canyonlands NP south to the National Forest Boundary. No specific boundaries were described; hand drawn boundaries were overlaid on an indistinct map. Map seemed to match that on-file by SUWA for the Redrock Wilderness Proposal boundaries. [This nomination has within its boundaries the following existing ACECs: Shay Canyon (Cultural), Lavender and Bridger Jack Mesas (Relict-plant communities), and Indian Creek (Visual).]	The proposed ACEC holds the landscape of infinitely twisted canyons, high domes, cliffs, mesas and anticlines that borders Canyonlands National Park. Creeks flow down from the nearby Abajo Mountains (NF), creating important riparian corridors and carving interesting formations. The road to the Needles Overlook and Highway 211 to Squaw Flat run through and along the edge of the area. Newspaper Rock, a unique and important archaeological site, adjoins the southern edge. Bridger Jack Mesa, Harts Point and Horsehead Rock provide long views of the canyon country. One of these views is of Lockhart Basin, which is below the popular Needles Overlook.	175,365	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:
To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:
An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	No	Scenic – Mentioned in the nomination specifically was Hart's Point; this is not unique in itself and is inventoried as VRM IV. Hart's Point overlook with views into Canyonlands NP is considered scenic. The existing Indian Creek ACEC (Scenic) is located within this nomination yet covers less than 5% of this total nominated area.
	Yes	Cultural – report says that "12,000 acres ….have been identified by BLM… for cultural resources". [Number not based on any known real data BLM is aware of].
	Yes	The current existing Shay Mesa (Cultural) ACEC encompasses only 3,560 acres or 2% of the nominated area.
	No	"Countless archeological sites are scattered throughout the remaining lands within the proposed ACEC." – This is possible but BLM surveys have not been completed to substantiate this statement.
A fish and wildlife resource (including but not limited to habitat and endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).		Wildlife –
	No	- Southwestern willow flycatcher – no currently occupied habitat.
	No	-Critical habitat for sensitive species ["critical" is Fish Wildlife Service (FWS) term]; not occurring in this area for these species / may provide habitat but not critical.
		Pronghorn, western red bat ringtail cat, dwarf shrew,

CANYONLANDS ACEC NOMINATION		
	No	Virgin River montane vole, Great Plains rat snake, Swainson's hawk , Spotted ground squirrel, Utah milk snake, many lined-skink , desert bighorn sheep -- none of these species are considered sensitive by the State of Utah for San Juan County.
	No	Bats: big free-tailed bat, fringed myotis, spotted bat, Townsend's big-eared bat - found in a wide range of habitats available throughout Utah; there is no information to show that these bats have a strong affinity to the nominated ACEC area.
	No	Sage grouse – is sensitive, but does not occur nor have habitat in this nominated area.
	Yes	Bald eagle - a T&E species; winters throughout the field office area, but not specifically reliant on this area for winter habitat, nor does it nest in resource area
	No	Ferruginous hawk – potentially present, but don't know where located, typically nests in higher elevations than nominated area.
	No	Peregrine falcon – not state sensitive species, found throughout field office area, not just in this area.
	No	Burrowing owl – no known in this area.
	No	Lewis' woodpecker – is state sensitive species, but typically found at higher elevations than this nominated area.
	No	
A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).	No	-Spineless hedgehog cactus, delisted in 1993.
	No	-Jane's globemallow, Tuhy aromatic scurf-pea, and Chatterley's onion - could occur in this area but have not been identified.
	No	-Moab woodyaster, Eastwood monkeyflower - not in area of nomination.
	Yes	-Relic [relict] plant communities on Lavender Mesa are present and protected under the existing Lavender Mesa ACEC.
	Yes	-Rock formations are examples of unique erosion processes.
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).	No	Area not nominated for this value.
Importance: The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource, value, process, system, or hazard is characterized by one or more of the following:		
Important Values	**Yes/No**	**Values and Rationale for Determination**
Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness,	Yes	Scenic – The nominated area includes the existing Indian Creek ACEC, which is less than 5% of the total acreage of this nomination. The importance of the area

CANYONLANDS ACEC NOMINATION		
or cause for concern, especially compared to any similar resource. For this field office consideration, criteria for cultural value include evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.		for scenic value of Indian Creek ACEC is due to its inclusion in the viewshed into Canyonlands NP.
	Yes	Cultural – Sites are present in the area; currently there is an existing ACEC (Shay Canyon) for cultural values within a small portion of the nominated area. However, the nomination descriptions did not describe sites or the cultural value in terms of more than locally significant qualities for importance. The area within this nomination determined by the BLM ID team to be relevant and important is considered in the Shay Canyon existing and potential ACEC.
	No	Wildlife – Bald eagle, a T & E species, is present during the winter in the resource area but there are no nesting birds. This species is present throughout the field office area and the State of Utah; it is not, therefore, more than locally significant for special management attention.
	No	Natural Systems & Processes - - Geologic/Rock formations - examples of unique erosion processes: this general comment describes much of the entire resource field area in terms of rock formations, and is not unique to this area.
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.	No	Scenic - The viewshed area is comprised primarily of large rock formations, many of them in the far distance and located within Canyonlands NP. In general, these formations are not vulnerable to on–the-ground impacts. There is no special management attention needed to preserve formations or their scenic quality of this large nominated acreage; the VRM inventory class management provides necessary protection.
	Yes	Natural Systems & Processes - - Relict plant communities on Lavender Mesa and Bridger Jack Mesa existing ACECs are present and are currently protected under the existing ACECs, which lie within this larger nominated ACEC area.
	No	- Geologic/Rock formations examples of unique erosion processes: these formations hundreds of feet high will continue in their erosion process, and are not threatened by impacts on-the-ground.
Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.		None identified.
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or public welfare.		None identified.
Poses a significant threat to human life and safety or to property.		None identified.

CANYONLANDS ACEC NOMINATION
Summary of Important Values: • Scenic value, which is present in an area looking west from Hart's Point Overlook into Canyonlands NP and is protected under the existing Indian Creek ACEC; • Cultural value, which is currently protected under the existing Shay Canyon ACEC, or could be protected under the potential modified Shay Canyon ACEC; and • Relict plant communities on Lavender and Bridger Jack Mesas, which are currently protected under the existing ACECs by the same names.
Suggested Special Management Prescriptions: FLPMA Section 103(a): The term "areas of critical environmental concern", means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.
Suggested Special Management Conditions, and Notes See management prescriptions under existing Lavender and Bridger Jack Mesas existing ACECs, Shay Canyon existing ACEC, and Indian Creek existing ACEC.
Field Manager Concurrence: ___ I concur with the above evaluation of the Canyonlands ACEC nomination ___ I concur with the above evaluation with the following changes: _____ Date: _____ Sandra A. Meyers Field Office Manager
[Notes: The ID Team determined that the entire nomination acreage (175,365 acres) does not meet the relevance and importance criteria for the values listed. However, the existing ACECs, Lavender Canyon, Bridge Jack Mesa, Shay Canyon, and Indian Creek, provide protection for values found to have relevance and importance: relict plant communities, cultural, and scenic, respectively.]

CEDAR MESA ACEC NOMINATION			
General Location	**General Description**	**Acreage**	**Values Considered**
Located in the area south of UT 95, west of Comb Ridge, north of a portion of Glen Canyon NRA, and bounded on the east by Highway 276.	This is an area of diverse terrain from high elevations to desert washes. Large numbers of cultural sites are located within the area, as well as backcountry access for primitive recreation and cultural visitation.	379,336	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:
To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:
An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	Yes	Scenic: Valley of the Gods: Panoramic views can be seen from the highways bordering the area and from the Valley of the Gods Loop 17-mile [dirt] Road. [See Valley of the Gods ACEC nominated evaluation].
	Yes	Scenic: Comb Ridge: "the arching spine of Comb Ridge is a remarkable sight" from the highway.
	Yes	Cultural: The Grand Gulch/Cedar Mesa area was extensively occupied by the Puebloan culture from before CE 500 to 1270. In surveyed areas, site densities of 20-200 sites per square mile have been recorded. The sites are of many types and include lithic scatters, petroglyph and pictograph panels, Basketmaker pit houses and pit structures, Puebloan kivas, multi-room surface swellings, granaries, and cliff dwellings. Many are nearly or totally in tact.
	Yes	Cultural – Arch Canyon ruin has unique architectural elements that are one-of-a-kind in this area.
	No	Cultural – The area west of Grand Gulch was recommended in the nomination to be included within the boundaries of the ACEC. The ID Team determined that the area west of Grand Gulch does not possess site density in numbers comparable to those in either Grand Gulch or Cedar Mesa, nor are there conflicts or potential impacts on the west to the extent that they occur in Grand Gulch or on the mesa top (Cedar Mesa) that would warrant special management attention.
A fish and wildlife resource (including but not limited to habitat and endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).		Wildlife:
	Yes	Fish and Wildlife – Arch Canyon: T & E species – designated critical habitat for Mexican spotted owl, and potential habitat for the Southwestern willow flycatcher. Sensitve species - Bluehead sucker, Flannelmouth sucker.
	No	- Black-footed ferret -Federally endangered: extirpated from field office area (no longer present).
	Yes	- Ferruginous hawk - sensitive [state] species-– winters in

CEDAR MESA ACEC NOMINATION		
		pinyon-juniper (P-J) woodland.
	No	- Mule deer [crucial winter range is designated], desert shrew, western red bat, ringtail cat, dwarf shrew, Virgin River montaine vole, the Utah night lizard, Swainson's hawk, osprey, spotted ground squirrel, Pacific chorus frog, many-lined skink [found in moist areas near water, not in area], and the desert bighorn sheep: none are listed as sensitive.
	Yes	- Peregrine falcon - . This species is delisted but support continues to be mandated to ensure the continued viability of the species.
	Yes	- Bald eagle – winter range, present but no breeding in area; ubiquitous range over the state of Utah.
	No	- Burrowing owl – not in area.
	No	- Big free-tailed bat, Townsend's big-eared bat, fringed myotis bats – no information to show that these bats have a strong affinity to this area.
	No	- Bobolink – found between the pinyon-juniper and shrub, usually in NF, not in this area; burrowing owl [present in open grass lands, not treed area] – not present in area; sage grouse – not found in this area; Lewis' woodpecker – is state sensitive but breeding area is typically in ponderosa pine forests, not in this area.
A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).		Natural Systems and processes:
	No	- Navajo sedge: Federally listed plant species, not found in this area (found in ledges of the Navajo sandstone formation on the San Juan River); whiteflower penstemon – not present in this area.
	No	-Monument milkvetch - potentially located in the northern part of San Juan County in Canyonlands NP; alcove bog-orchid, Hole in the Rock prairie clover, Kachina daisy – all could possibly be in the area but have not been identified.
	No	- Comb Wash buckwheat –removed from special species status list; Franklin's ceanothus, not sensitive species; Bluff buckwheat, not sensitive species.
	Yes	- Cronquist milkvetch – located in the bottom of Comb Wash, which is outside of the existing ACEC area though within the nominated area boundaries.
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).	No	Area not nominated for this value.
Importance: The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource, value, process, system, or hazard is characterized by one or more of the following:		

CEDAR MESA ACEC NOMINATION		
Important Values	**Yes/No**	**Values and Rationale for Determination**
Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. For Monticello Field Office consideration, criteria for cultural value include evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.	Yes	Scenic - Valley of the Gods - The Valley of the Gods is important to regional, national and international visitors who view and photograph the scenery. [See Valley of the Gods nominated ACEC evaluation.]
	No	Scenic - Comb Ridge – not located within boundary of existing Cedar Mesa ACEC. ID Team determined that Comb Ridge within a different management category type than the existing Cedar Mesa ACEC boundaries.
	Yes	Cultural - The area probably contains the greatest concentration of Basketmaker II and III sites in the Southwest. Grand Gulch is also known particularly for its well preserved cliff dwellings and variety of rock art. [See existing Cedar Mesa ACEC evaluation].
	Yes	Cultural - Arch Canyon – there are site types in the proposed historic district for this area.
		Wildlife -
	No	- Ferruginous hawk – winters in pinyon-juniper (P-J) woodlands, there are hundreds of thousands of acres of P-J in the resource area, not limited to Cedar Mesa.
	No	- Peregrine falcon – may be present but most birds are found in the San Juan River ecosystem, their natural habitat.
	No	- Bald eagle – no breeding areas in Cedar Mesa; eagle is found throughout the State of Utah.
	Yes	Fish and Wildlife – Arch Canyon: Designated critical habitat for T & E species – Mexican spotted owl; state sensitive species, Bluehead sucker, Flannelmouth sucker, are present in Arch Canyon.
		Natural Systems and Processes
	No	- Kachina daisy - not known if it is present in this area.
	No	- Cronquist milkvetch – not located within the area of the existing ACEC; the ID Team determined that extending the boundaries to include Comb Wash and Ridge was not a practical management action due to change in use and activities and their differing management needs.
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.	Yes	Scenic - Valley of the Gods - Some resource uses and activities could cause adverse surface disturbance and impacts to the scenic quality / value of the area.
	Yes	Fish and Wildlife – Arch Canyon: Designated critical habitat for T & E species – Mexican spotted owl; state sensitive species are present in Arch Canyon.
Has been recognized as warranting protection in order to satisfy national priority concerns or	Yes	Cultural - The Cedar Mesa/Grand Gulch area is listed in the National Register of Historic Places.

CEDAR MESA ACEC NOMINATION		
to carry out the mandates of FLPMA.	Yes	Fish and Wildlife Arch Canyon – Designated critical habitat for T & E species; and state sensitive species are present.
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or public welfare.		None identified.
Poses a significant threat to human life and safety or to property.		None identified.

Summary of Important Values:

- Scenic quality in the Valley of the Gods area;
- Cultural values in the Cedar Mesa/Grand Gulch and Arch Canyon areas; and
- Fish / wildlife values in the Arch Canyon area, designated critical habitat for T & E species – Mexican spotted owl; habitat for Southwestern willow flycatcher, and state sensitive species- Bluehead sucker, Flannelmouth sucker.

Suggested Special Management Prescriptions:

FLPMA Section 103(a): The term "areas of critical environmental concern", means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

Suggested Special Management Conditions, and Notes

See management prescriptions listed under Cedar Mesa Existing ACEC evaluation, Grand Gulch Special Emphasis Area, and for Arch Canyon potential Special Emphasis Area under existing Cedar Mesa ACEC.

Field Manager Concurrence:

___ I concur with the above evaluation of the Cedar Mesa ACEC nomination

___ I concur with the above evaluation with the following changes:

_____ Date: _____

Sandra A. Meyers

Field Office Manager

[Notes: The ID Team determined that the nominated area, including west of Grand Gulch and east of the existing Cedar Mesa ACEC boundary, do not have relevant and important values as compared with those within the existing ACEC boundaries. These two areas are within a different management category type and have different management needs.

The ID Team recognizes that the relevant resources as in this nomination compare to the ones in the existing Cedar Mesa ACEC, the Special Emphasis Area of Valley of the Gods, and additionally, a potential Special Emphasis Area for fish / wildlife and cultural values in Arch Canyon, which is a part of the existing Cedar Mesa ACEC. [See evaluation for Existing Cedar Mesa ACEC].

The ID Team recommends that the existing Cedar Mesa be carried forward in the following range of alternatives; No Action; maintain the existing Cedar Mesa ACEC with release of the Special Emphasis Area Valley of the Gods; maintain the existing Cedar Mesa ACEC and designate a potential Special

Emphasis Area for Arch Canyon to protect fish/wildlife values, or some combination of the above.]

DARK CANYON ACEC NOMINATION			
General Location	**General Description**	**Acreage**	**Values Considered**
The Dark Canyon nominated area is located on the western field office boundary adjacent to Glen Canyon NRA, and from the southern boundary of Canyonlands NP south to the Manti-LaSal NF and includes the areas of Bulter Wash, Beef Basin, and Dark Canyon.	The Dark Canyon/Butler Wash/Beef Basin area is one of the least accessible areas in southern Utah, and encompasses a wide range of elevation changes, a diversity of scenic viewing opportunities, and a variety of plant, and animal habitats and species.	163,678	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:

To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:

An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	Yes No	Scenic – The proposed ACEC holds every type of beautiful view imaginable, from snow-capped mountaintops cloaked in dark forests, across expansive mesas, down redrock cliffs, to green creekside grasses sprouting from red sand. Twisted junipers cling to cliffs that rise 2,000 feet above the canyon floors. Cultural – "Cultural resources, including petroglyphs and cliff dwellings, are thick through the entire region." - The ID Team determined that because the density of cultural sites in this area is likely not as prevalent as in Alkali Ridge or Cedar Mesa, and sites are less impacted because they are off the beaten path, that the cultural value was not relevant.
A fish and wildlife resource (including but not limited to habitat and endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).	Yes Yes No Yes Yes No	Wildlife – - Mexican spotted owl – Dark Canyon is within designated critical habitat for the owl. - Sensitive [state] species - ferruginous hawk – winters in pinyon-juniper (P-J) woodland. - Mule deer [crucial winter range is designated], desert shrew, western red bat, Great Plains rat snake, ringtail cat, dwarf shrew, Virgin River montaine vole, the Utah night lizard, Swainson's hawk, osprey, spotted ground squirrel, Pacific chorus frog, many-lined skink [found in moist areas near water, not in area], and the desert bighorn sheep: none of these species are listed as sensitive. -Important habitat for peregrine falcon may be present in this area. - Bald eagle no breeding areas here, ubiquitous range over the state of Utah. - Burrowing owl – not in area.

DARK CANYON ACEC NOMINATION		
	No No	- Big free-tailed bat, Townsend's big-eared bat, fringed myotis bats – no information to show that these bats have a strong affinity to this area. - Bobolink – found between the pinyon-juniper and shrub, usually in NF - not in this area; burrowing owl [present in open grass lands, not treed area] – not present in area; sage grouse – not found in this area; Lewis' woodpecker – is state sensitive but breeding area is typically in ponderosa pine forests [at higher elevations as in NF]- not in this area.
A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).	 No No Yes No No No No	Natural process of system – - Whiteflower penstemon – not present here. - Monument milkvetch - potentially located in the northern part of San Juan County in Canyonlands NP, north of this nominated area. - Kachina daisy – possibly could be present, habitat is seasonally wet seeps, not identified in area. - Comb Wash buckwheat - removed from sensitive species list. - Franklin's ceanothus – not sensitive species; Bluff buckwheat - not sensitive species. - Alcove bog-orchid, Hole in the Rock prairie clover - could possibly be in the area but not identified. - Cronquist milkvettch – sensitive species but not present in this area.
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).	No	This value was not submitted.
Importance: The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource, value, process, system, or hazard is characterized by one or more of the following:		
Important Values	**Yes/No**	**Values and Rationale for Determination**
Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. For Monticello Field Office consideration, criteria for cultural value include evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.	Yes Yes No No Yes	Scenic – Dark Canyon is a destination for visitors regionally, nationally and internationally because of its remoteness, scenery, and opportunity for primitive backcountry travel in a large canyon system. Wildlife – - Mexican spotted owl – designated critical habitat and pairs known to inhabit. - Ferruginous hawk – winters in P-J woodlands, there are hundreds of thousands of acres of P-Jin the resource area not limited to Dark Canyon. - Bald eagle - eagle found throughout the State of Utah. - Peregrine falcon - provides important habitat for peregrine falcon and other raptors.

DARK CANYON ACEC NOMINATION		
	No	Natural Systems and Processes Kachina daisy – not identified in this area.
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.	Yes	- Peregrine falcon – provides important habitat for peregrine falcon and other raptors.
Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.		None identified.
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or public welfare.		None identified.
Poses a significant threat to human life and safety or to property.		None identified.

Summary of Important Values:

- Scenic quality;
- Wildlife values, Dark Canyon is within designated critical habitat for the Mexican spotted owl; and
- Important habitat for peregrine falcon.

Suggested Special Management Prescriptions:

FLPMA Section 103(a): The term "areas of critical environmental concern", means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

Suggested Special Management Conditions, and Notes:

See the management prescriptions listed for the Existing Dark Canyon ACEC evaluation.

Field Manager Concurrence:

___ I concur with the above evaluation of the Dark Canyon nomination

___ I concur with the above evaluation with the following changes:

_____ Date: _____

Sandra A. Meyers
Field Office Manager

[Notes: The ID Team determined that the entire nomination acreage (163,678 acres) does not meet the relevance and importance criteria for the values listed. However, the existing Dark Canyon ACEC provides protection for the values found to have relevance and importance: scenic and wildlife.]

MONUMENT CANYON ACEC NOMINATION			
General Location	**General Description**	**Acreage**	**Values Considered**
Monument Canyon nominated ACEC area is located on the eastern edge of the field office at the Colorado border, and north of Navajo Nation lands.	The nominated Monument Canyon ACEC area includes Tin Cup Mesa, Cross Canyon, Monument Canyon and the upper part of Montezuma Creek. Portions of the area are currently designated WSAs.	46,830	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:

To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:

An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	No No	Scenic – The ID Team determined that this area does not have scenic qualities, nor is it unique within the larger resource area. Cultural – Ruins occur throughout the canyons and mesas. Tin Cup Mesa has some cultural sites; however, the ID Team determined that the density of cultural sites in this area is likely not as prevalent as in Alkali Ridge or Cedar Mesa, and sites are less impacted because they are off the beaten path. Based on criteria, the ID Team determined that the cultural value was not relevant.
A fish and wildlife resource (including but not limited to habitat and endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).	No No No No No No No	Wildlife: -Federally endangered black-footed ferret: extirpated from field office area (no longer present). - Ferruginous hawk - winters in pinyon-juniper woodland typically not found in this area. - Mule deer [crucial winter range is designated], desert shrew, western red bat, ringtail cat, Utah milk snake, dwarf shrew, Virgin River montaine vole, the Utah night lizard, Swainson's hawk, osprey, spotted ground squirrel, Pacific chorus frog, many-lined skink [found in moist areas near water, not in area], and the desert bighorn sheep: none of these species are listed as sensitive. - Burrowing owl – not in area. - Big free-tailed bat, Townsend's big-eared bat, fringed myotis bats – no information to show that these bats have a strong affinity to this area. - Sage grouse – sensitive but not found in this area. - Lewis' woodpecker – is state sensitive but breeding area is typically in ponderosa pine forests not in this area.
A natural process or system (including but not limited to endangered,		Natural Systems and processes:

MONUMENT CANYON ACEC NOMINATION		
sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).	No	-Natural Riparian Ecosystems – ID Team did not identify any riparian systems in this area.
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).	No	None identified in proposal.
Importance: The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource, value, process, system, or hazard is characterized by one or more of the following:		
Important Values	**Yes/No**	**Values and Rationale for Determination**
Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. For Monticello Field Office consideration, criteria for cultural value include evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.		No relevant value found.
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.		No relevant value found.
Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.		No relevant value found.
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or public welfare.		None identified.
Poses a significant threat to human life and safety or to property.		None identified.
Summary of Important Values: • The ID Team determined there are no relevant values were present in this area.		

MONUMENT CANYON ACEC NOMINATION
Suggested Special Management Prescriptions: FLPMA Section 103(a): The term "areas of critical environmental concern", means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.
Suggested Special Management Conditions, and Notes The ID Team determined there are no relevant values were present in this area.
Field Manager Concurrence: ___ I concur with the above evaluation of the Monument Canyon Nominated ACEC ___ I concur with the above evaluation with the following changes: _____ Date: _____ Sandra A. Meyers Field Office Manager

REDROCK PLATEAU ACEC NOMINATION			
General Location	**General Description**	**Acreage**	**Values Considered**
The Redrock Plateau ACEC nomination is located in the southwestern corner of the field office (FO) area. It is bounded by routes U-95 on the north and U-276 on the partially on the east, and Glen Canyon NRA on the south and western FO boundaries.	Sheer-sided canyons cut the area, high mesas, and eroded badlands make up this varied landscape. A part of this proposed ACEC is the existing Mancos Mesa WSA.	323.473	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:
To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:
An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	Yes	Scenic – The area encompasses a large diverse geographic region which displays a landscape of canyons, cliffs, desert and badlands, high mesas sandy washes.
	No	Cultural – "The proposed ACEC is rich in significant cultural resources." The ID Team determined that the density of cultural sites in the area is likely not high, nor are the resources unique to the area or that would require special management for protection.
A fish and wildlife resource (including but not limited to habitat and endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).		Wildlife –
	No	- Ringtail cat, dwarf shrew, and Virgin River vole – these species are not sensitive.
	Yes	- Ferruginous hawk - sensitive species-– winters in pinyon-juniper woodland.
	Yes	- Peregrine falcon - could be found in the area but usual habitat is along the San Juan River.
	Yes	- Bald eagle – present but no breeding areas, ubiquitous range over the state of Utah].
	No	- Burrowing owl – not in area.
	No	- Big free-tailed bat, Townsend's big-eared bat, fringed myotis bats – no information to show that these bats have a strong affinity to this area ; spotted ground squirrel, not a sensitive species and can be found throughout the field office area.
	Yes	-Desert bighorn sheep – largest FO herd found in this area, not a sensitive species.
A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).		Natural Systems and Processes –
	No	- Sage, blackbrush, and rabbitbrush communities – not unique, these plant communities are found within the entire Colorado Plateau.
	No	- Hole in the Rock prairie clover – could possibly be present but not identified.
	No	- Whiting indigo bush – not a sensitive species, present in the Mancos area.
	No	- Copper Canyon milkvetch – could possibly be present

REDROCK PLATEAU ACEC NOMINATION		
	Yes	in area but not identified. - Relict plant communities – some are located on Mancos Mesa.
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).		No hazards were identified in this area.
Importance: The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource, value, process, system, or hazard is characterized by one or more of the following:		
Important Values	**Yes/No**	**Values and Rationale for Determination**
Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. For Monticello Field Office consideration, criteria for cultural value include evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.	No No No No No No	Scenic – The area is large and replicates most desert scenery present within the Colorado Plateau. Wildlife - Ferruginous hawk - winters in p-j woodlands, there are hundreds of thousands of acres of p-j in the resource area, not limited to this section of the resource area. - Peregrine falcon – not usually found in this type of area, usual habitat is along the San Juan River. - Bald eagle – present but no breeding areas here, ubiquitous range over the state of Utah. - desert bighorn sheep – not a sensitive species, herds occur in other areas of the field office. Natural Systems and Processes - Relict plant communities – not unique, inaccessible on mesa top and within WSA, does not need special management attention for protection.
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.		None identified.
Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.		None identified.
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or public welfare.		None identified.
Poses a significant threat to human life and safety or to property.		None identified.

REDROCK PLATEAU ACEC NOMINATION
Summary of Important Values: • The ID Team determined there are no relevant values were present in this area.
Suggested Special Management Prescriptions: FLPMA Section 103(a): The term "areas of critical environmental concern", means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.
Suggested Special Management Conditions, and Notes: Notes: The ID Team determined that the nomination acreage (323,473 acres) does not meet the relevance and importance criteria for the values listed.
Field Manager Concurrence: ___ I concur with the above evaluation of the Redrock Plateau ACEC nomination ___ I concur with the above evaluation with the following changes: _____ Date: _____ Sandra A. Meyers Field Office Manager

SAN JUAN RIVER ACEC NOMINATION			
General Location	**General Description**	**Acreage**	**Values Considered**
The San Juan River ACEC nomination is located along the river from west of Bluff, UT to the boundary of Glen Canyon NRS, with the Navajo Nation on the southern portion of the river center line.	The San Juan River ACEC nomination includes the many varied rock formations and cultural sites along the river banks, the diversity of rock, water and vegetation views, and the riparian nature of the river corridor. A portion of the nominated area lies within the San Juan River SRMA.	22,179 as nominated 7,626 as recommended	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:
To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:
An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	Yes Yes	Scenic – The scenery along the San Juan River includes tilted formations as the river crosses Comb Ridge, steep vertical cliffs hundreds of feet high with walls of interbedded sandstone and limestone, and the 1,200 foot high walls of the Goosenecks, one of the best examples of entrenched meanders in the United States. Riparian areas with various hues of green set off the water course and rock presenting a diverse and varied scenic viewing area. Cultural – The rock art along the San Juan River is unsurpassed, recognized as "Type Sites" for their specific rock art motifs. Cultural sites are present along the river banks and within the tributaries of the San Juan River
A fish and wildlife resource (including but not limited to habitat and endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).	Yes	Fish and Wildlife – The San Juan River has a unique endemic fish population, and designated habitat for the endangered Colorado pikeminnow and the Razorback sucker, as well as the state sensitive Flannelmouth sucker. Bighorn sheep inhabit the rocky precipices of the lower river. Used by migrating Southwestern willow flycatcher (T&E), and Yellowbilled cuckoo (candidate specie). Important riparian habitat for several species of wildlife including the bighorn sheep, amphibians, neo-tropical birds, and waterfowl.
A natural process or system (including but not limited to endangered, sensitive, or threatened plant species;	Yes	Natural Systems and Processes – -Riparian systems – found in all areas of the San Juan River corridor.

SAN JUAN RIVER ACEC NOMINATION		
rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).	Yes Yes Yes	-Hanging gardens / Navajo sedge – occurs in the ledges of the Navajo sandstone formation. Hanging gardens are unique herbaceous communities that develop under certain geologic and climatic features in arid to semi-arid climates. They are fed by groundwater aquifers in either fine-grained sandstones or in limestones, and exist on cliff faces or in undercut alcoves. Hanging garden vegetation is structurally and floristically distinct from other spring-supported vegetation in the American southwest. -Sensitive species: Western hophornbeam, Alcove Rock daisy, Howel scorpion weed, Bluff phacelia, and Cooper Canyon milkvetch. Geologic features: Goosenecks - entrenched meanders of the San Juan River.
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).	No	Area not nominated for natural hazards.
Importance: The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource, value, process, system, or hazard is characterized by one or more of the following:		
Important Values	**Yes/No**	**Values and Rationale for Determination**
Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. For Monticello Field Office consideration, criteria for cultural value include evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.	Yes Yes Yes Yes Yes	Scenic – Visitors come to the San Juan River as a destination for river trips at least in part because of the unique desert river scenery. Thousands of visitors a year also view the river from the overlook at Goosenecks State Park to get a close look at the entrenched meanders hundreds of feet below. Cultural – The density and types of cultural sites along the San Juan River corridor are significant, and subject to impacts from use and potential resource development. Wildlife – T & E and state sensitive species present: Colorado pikeminnow and the Razorback sucker, as well as the State sensitive Flannelmouth sucker. Natural Systems and Processes – - Hanging Gardens / Navajo sedge – are present within the Navajo sandstone formation along the river. Hanging garden vegetation is structurally and floristically distinct from other spring-supported vegetation in the American southwest. - T&E and state sensitive species: Western hophornbeam, Alcove Rock daisy, Howel

SAN JUAN RIVER ACEC NOMINATION		
	Yes	scorpionweed, Bluff phacelia, and Cooper Canyon milkvetch. Geologic features: - Geologic Features / Goosenecks – Visitors from the world over stop to view the entrenched meanders of the San Juan River and viewed from more than 1,000 feet above at the Goosenecks State Park overlook.
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.	Yes Yes Yes Yes Yes	Scenic – It is unlikely that the scenic qualities of the massive rock formations will be adversely affected. However, surface disturbances from increased use and other resource activities could impact the scenic values. Cultural – Cultural sites are particularly subject to adverse impacts along the river due to the heavy visitation in the area, as well as subject to damage by other resource activities. Wildlife – The T & E Colorado pikeminnow and the Razorback sucker, as well as the State sensitive Flannelmouth sucker are rare, unique, and vulnerable to adverse change. Natural Systems and Processes – -Riparian systems – extensive riparian areas are rare in the desert climate and provide habitat for T&E and sensitive species, wildlife and for neo-tropical migratory birds. The riparian areas are subject to adverse impact from increased use of the waterway and other resource uses and activities including potential development. T&E species: -Navajo sedge, Western hophornbeam, Alcove Rock daisy, Howel scorpionweed, Bluff phacelia, and Cooper Canyon milkvetch.
Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.	Yes	Cultural - Cultural resources are the subject of national protective laws, regulations, and policy. Many are eligible for the National Historic Register.
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or public welfare.		None identified.
Poses a significant threat to human life and safety or to property.		None identified.
Summary of Important Values: • Scenic quality; • Cultural values; and • Wildlife, and riparian ecosystems: T & E fish species - the Colorado pikeminnow, the Razorback sucker; the state sensitive Flannelmouth sucker; the following T & E plant species: Navajo sedge, Western hophornbeam, Alcove Rock daisy, Howel scorpion weed, Bluff phacelia, and Cooper Canyon milkvetch.		
Suggested Special Management Prescriptions:		

SAN JUAN RIVER ACEC NOMINATION

FLPMA Section 103(a): The term "areas of critical environmental concern", means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

Suggested Special Management Conditions, and Notes:

Management prescriptions for the San Juan River potential ACEC (7,626 acres) include:

- ROS-P class conditions for the San Juan River.
- Excluded from private and commercial use of woodland products, except for onsite collection of dead wood for campfires.
- Available for livestock use.
- Excluded from new land treatments.
- Managed to allow cultural resources to remain subject to natural forces.
- Managed as VRM I class, with only those projects that meet class I objectives allowed.
- Excluded from surface disturbance by mechanized or motorized equipment.

Within the SRMA:

- ROS-SPM class would allow motorized boat use on the San Juan.
- Managed to maintain an environment of isolation insofar as allowed by river permit and patrol system.
- Management aimed at maintaining safety and the riverine ecosystem.
- Withdrawn from mineral entry.
- Surface disturbance from mining activities on existing claims would be limited to the extent possible without curtailing valid existing rights.
- The area above the rim in the vicinity of the Bluff airport lease would be available for mineral materials disposal.
- No vehicle access would be allowed from Comb Wash downstream to Lime Creek and below Mexican Hat Bridge (except for motorized boat use on the river).
- On an area closed to OHV use, a plan of operations is required for any mining – related activity other than casual use.
- OHV use is Limited with seasonal restrictions to protect bighorn sheep lambing and rutting areas.
- Watershed control structures are subject to surface restrictions and seasonal restrictions to protect bighorn sheep lambing and rutting areas.
- Vehicle access in other areas within the SRMA would be limited to designated roads and trails.
- **Subject to fire suppression to protect riparian habitat.**

Notes: The ID Team found relevant and important values present within the San Juan River corridor within the area from the centerline of the river to the rim on the northern side of the river / or the boundary of the riparian area.

Field Manager Concurrence:

___ I concur with the above evaluation of the existing San Juan River ACEC nomination

___ I concur with the above evaluation with the following changes:

_____ Date: _____

Sandra A. Meyers
Field Office Manager

[The ID Team determined that the relevant and important values are not present outside of the San Juan River corridor area. In a range of alternatives the potential San Juan River ACEC could include the length of the BLM river area from west of Montezuma Creek to the Glen Canyon National Recreation Area (NRA) boundary; or from Comb Ridge at the river to the Glen Canyon NRA boundary. See Map

WHITE CANYON ACEC NOMINATION			
General Location	**General Description**	**Acreage**	**Values Considered**
White Canyon ACEC nomination is located north of State Highway 95, east of the Manti-LaSal NF, the canyons north of White Canyon, and includes the area surrounding Natural Bridges NM.	The area includes the canyon drainages of White Canyon - Short, Long, Gravel, Fortknocker, Hideout, K & L, Armstrong and Tuwa canyons and an area known as Cheesebox Canyon, which is a WSA.	101,377	Scenic Cultural Wildlife Natural Systems and Processes

Evaluation Criteria:

To be considered as a potential ACEC and analyzed in resource management plan alternatives, an area must meet the criteria of relevance and importance, as established and defined in 43 CFR 1610.7-2.

Relevance:

An area meets the "relevance" criterion if it contains one or more of the following:

Relevant Values	Yes/No	Rationale for Determination
A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).	Yes	Scenic – Although similar to other areas locally, White Canyon drainages provide a deeply incised slickrock canyon system that is known for treacherous slot canyons that flood with storm run-off.
	Yes	Cultural – The canyons contain cultural sites, and sites related to Utah's early Anglo history.
A fish and wildlife resource (including but not limited to habitat and endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).	No	Fish and Wildlife – "critical habitat for Mexican spotted owl and the Southwestern willow flycatcher" – No critical habitat in this area.
	No	- Mule deer, Western red bat, ringtail cat, dwarf shrew, osprey, Swainson's hawk, Lewis' woodpecker, big free-tailed bat, fringed myotis, Townsend's bat, spotted ground squirrel, Albert's squirrel, and many-linked skink – no information to show that these bats have a strong affinity to this area and none of these are sensitive species.
	No	- Three-toed woodpecker – not habitat for this species, they typically live in conifer forests at 8,000 feet.
	Yes	- Peregrine falcon - not a sensitive species, but could be found in this area.
	Yes	- Bald eagle - a T&E species, winters throughout the field office area, but not specifically reliant on this area for winter habitat, nor does it nest in resource area.
A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities which are terrestrial, aquatic, or riparian; or rare geological features).		Natural Systems and Processes –
	No	- Rock violet, sheathed deathcamus, indigo bush, white flower penstemon, monument milkvetch –could possibly be found in the aea but not identified.
	No	- Kachina daisy – could possibly be found in this area, not identified; usually found in hanging gardens.
	No	- Perennial steams in area – ID Team determined there are no perennial streams in this area.
	No	- Springs in area: there are springs throughout the FO area, this is not unique.

WHITE CANYON ACEC NOMINATION		
Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs, determined through the resource management planning process that it has become part of a natural process).	No	Area not nominated for natural hazards.
Importance: The resource, value, process, system, or hazard described above as relevant must have substantial significance and values in order to satisfy the "importance" criteria. This generally means that the resource, value, process, system, or hazard is characterized by one or more of the following:		
Important Values	**Yes/No**	**Values and Rationale for Determination**
Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource. For Monticello Field Office consideration, criteria for cultural value include evaluation of the nature of the cultural resource: types of sites, the density of sites, and the existing impacts to the resource.	No No No No	Scenic – The canyon systems are not easily visible from the highway because they are visually blocked by a lower bench along the mesa. Views in the northern area of the nominated area include the plateaus south of Dark Canyon. These areas are similar to the high, rolling plateaus common in San Juan County. The view of the area looks towards the mountains but doesn't capture the deep canyons; instead you see the sage brush areas in the foreground. The area on the eastern end of the nominated area provides similar terrain to the viewer. Cultural – The steep, narrow canyons tend to make the cultural sites inaccessible and difficult to identify. The density and site types are not comparable to the Alkali Ridge and Cedar Mesa cultural sites within the field office resource area. Wildlife – - Peregrine falcon - not state sensitive species, found throughout field office area not just in this area. - Bald eagle – no nesting areas in this FO; ubiquitous throughout state of Utah.
Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.	No	Cultural – The special conditions developed for sites eligible for listing on the National Register would be sufficient to protect cultural values present; the intensive level of management associated with ACEC designations was not found to be needed to protect cultural resources for this area.
Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of FLPMA.		None identified.
Has qualities which warrant highlighting in order to satisfy public or management concerns about safety or public welfare.		None identified.
Poses a significant threat to human life and safety or to property.		None identified.

WHITE CANYON ACEC NOMINATION
Summary of Important Values: • The ID Team determined there are no relevant values were present in this area.
Suggested Special Management Prescriptions: FLPMA Section 103(a): The term "areas of critical environmental concern", means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.
Suggested Special Management Conditions, and Notes: Notes: The ID Team determined that the nomination acreage (101,377 acres) does not meet the relevance and importance criteria for the values listed. The area could be managed through VRM class objectives.
Field Manager Concurrence: ___ I concur with the above evaluation of the White Canyon ACEC nomination ___ I concur with the above evaluation with the following changes: _____ Date: _____ Sandra A. Meyers Field Office Manager

H.1 Wild and Scenic Rivers Study Process

H.1.1 Introduction

Through the Wild and Scenic Rivers Act (WSRA) of 1968, Congress established legislation to protect and preserve designated rivers throughout the United States in their free-flowing condition. Section 5(d)(1) of the WSRA directs federal agencies to consider the potential for national wild, scenic, and recreational river areas in all planning for the use and development of water and related land resources. A Wild and Scenic River review is being conducted as part of the Resource Management Plan (RMP) revision for the Monticello (Utah) Field Office that was initiated June 4, 2003.

H.1.2 Overview of the Review Process

An evaluation of the current status of watercourses within federal jurisdictions is completed by federal agencies to determine their eligibility for inclusion by Congress in the National Wild and Scenic River System (NWSRS). BLM's policy is to evaluate all potentially eligible rivers to determine if they are free-flowing and have any Outstandingly Remarkable Values (ORVs) that are river-related and regionally and/or nationally significant. If these factors are met, the river/segments are determined eligible and tentative classifications of wild, scenic or recreational are made based on the current level of human development and use associated with the eligible rivers/segments.

Public input is solicited during the eligibility process and incorporated into the study. For eligible rivers/sections, the evaluation passes to the Suitability phase for continued study and public involvement. The Suitability phase is embedded within the Resource Management Plan (RMP) process, as impacts of management of the eligible river corridors are addressed in the Draft Environmental Impact Statement (DEIS). The suitability determination for each of the eligible river(s)/segments is made at the end of the planning process, and is provided in the Record of Decision (ROD).

The river corridors of those eligible river(s)/segments found suitable are managed as described in the ROD for the RMP, to maintain their free-flowing nature, to preserve or enhance the identified (ORVs), and to ensure that any development is consistent with the tentative classifications identified in the ROD. Those segments determined non suitable are released from further evaluation as potential Wild and Scenic Rivers and are managed for other uses in accordance with the ROD for the RMP.

Finally, recommendations for any suitable river segments are forwarded to Congress for their consideration as to whether such river(s)/segments should be included within the NWSRS. There is no specific time requirement for the completion of this reporting phase. However, it is assumed that reporting will be done some time following completion of the RMP.

H.1.3 History of Wild and Scenic River Process – Monticello Field Office

On January, 25, 1991, an Addendum to the San Juan [Resource Area] Management Situation Analysis, 4333 Recreation Management clarifying the status of the Monticello Field Office's Wild and Scenic River planning process was written by the Mont FO:

> At the time the San Juan Management Situation Analysis (MSA) was written (1984-1985), BLM guidance for wild and scenic river eligibility was to consider only those rivers identified in the 1982 Nationwide Rivers Inventory. These included the Colorado River, San Juan River, and White Canyon. These three river segments were the only rivers considered for eligibility and (were) included in the RMP process. The analysis of these rivers was printed in Appendix DD of the September 1987 Proposed Resource Management Plan". [These original findings are available at the MFO, WSR Administrative Record.]
>
> The 1970 USDA/USDI list of rivers did not list any rivers in Utah. Neither the public nor the State of Utah identified any river as potentially eligible for Wild and Scenic designation during the planning process up until the protest period. During the protest period on the RMP, American Rivers suggested several other rivers as candidates for study as potential wild and scenic rivers. These included Indian Creek, Dark Canyon, Red Canyon, Cedar Canyon, Moki Canyon, Grand Gulch, Comb Wash, and Montezuma Canyon.
>
> After the San Juan FEIS was completed, new BLM guidance stated all rivers in San Juan Resource Area would be evaluated for wild and scenic river status in the RMP. Since the RMP was already in the final stages of completion, it was decided to finalize the RMP without consideration of additional rivers. It was recognized that additional planning would be needed to evaluate the other rivers under the wild and scenic rivers program. Suitability of the original three eligible river segments, as well as any additional rivers determined eligible, will be considered in a future plan amendment.

The Resource Management Plan, ROD, dated March 1991, included interim management guidelines for "portions of the San Juan and Colorado Rivers, and the White Canyon drainage" under the Wild and Scenic Rivers System (RMP, March 1991, pp. 98-100).

On May 24, 1991, a Notice of Intent (NOI) to plan was published in the Federal Register (Vol. 56, No. 101):

> [UT-062-4333-12] San Juan and San Rafael Resource Areas, Utah; Intent to Conduct Further Planning. AGENCY: BLM, Interior. ACTION: Notice of Intent to do further planning within the San Juan and San Rafael Resource Areas, Utah, for consideration of potential additions to the National Wild and Scenic Rivers System, and call for public nomination of eligible river segments.

In April 1992 the Monticello Field Office (then identified as the San Juan Resource Area) completed its preliminary inventory and assessment of the rivers within its jurisdiction. The wild and scenic river (WSR) inventory, preliminary eligibility determination, and tentative classification process included public input suggestions, Utah rivers listed in Nationwide Rivers Inventory (NRI), American Rivers List, USDA/USDI lists, and professional input from subject

matter specialists in the field office. Preliminary findings were that of the 164 watercourses reviewed in 1992, 16 were eligible for suitability study and consideration (MFO Administrative Record).

The NOI for the current RMP was published June 4, 2003 in the Federal Register Vol. 68, No. 107 [UT 060-1610-DO-016J, UT 090-1610-DO-017J]. A news release, specifically stating intent to include wild and scenic river review in the planning process, was published in the local newspaper, the San Juan Record, June 25, 2003.

The current (2003) WSR eligibility determination process begins where the 1991-1992 process stopped. The April 1992 WS Table (see Attachment A) provided the starting point for current evaluation of river(s)/segments based on current guidelines described herein. Authorities and Guidelines

H.1.4 AUTHORITIES AND GUIDELINES

The following documents were utilized in guiding the WSR planning process through the Eligibility/Tentative Classification phase:

- BLM IM 2004-196, Clarification of Policy in the BLM Manual Section 8351, Wild and Scenic Rivers, with respect to Eligibility Criteria and Protective Management, June 21, 2004.
- BLM, Instruction Memorandum No. UT 2004-011, Wild and Scenic River Eligibility Process Review.
- BLM, Instruction Memorandum No. 98-129, dated June 25, 1998, Protective Management Policy and Guidance for Identified BLM Eligible River Segments Evaluated Pursuant to the WSRA w/attachment – Solicitor Memo dated 11/12/97.
- BLM Memorandum, MS 8351, Clarification of Policy in the BLM Manual 8351 Related to Eligibility of River Segments Evaluated Pursuant to Section 5(d)(1) for the WSRA and Their Protection Afforded under the NEPA and Section 202 and 302 of the FLPMA, WO, April 8, 2004.
- Interagency Wild and Scenic Rivers Coordination Council, 1982. Contains various technical papers relating to evaluation of Wild and Scenic Rivers (see website at: www.nps.gov/rivers/publications.html).
- Memorandum of Understanding (MOU), Governor (State of Utah), Regional Forester (Intermountain Region B, U.S. Forest Service), State Director (BLM), Regional Director (Rocky Mountain Region B, National Park Service), 1997. Defines coordination between Federal and State agency and local government for planning efforts, public education and outreach, and conducting studies.
- USDI-USDA Guidelines for Eligibility, Classification, and Management of River Areas. September 7, 1982. Until 1988 this was the only guidance available to the BLM.
- Wild and Scenic Rivers Act, P.L. 90-542, as amended. Congressional legislative direction for Wild and Scenic River planning.
- Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation and Management, Bureau of Land Management Manual - 8351, 1992 and changes as of 1993. (Sections 1601.03, I; 1623.41A 2d). Establishes BLM policy, program direction, and procedural standards for fulfilling requirements of the Wild and Scenic Act (WSRA).

- Wild and Scenic River Review in the State of Utah, Process and Criteria for Interagency Use, July, 1996 ["Blue Book"]. This document outlines the process and criteria for achieving consistency within the BLM, NPS, and Forest Service planning efforts for WSR eligibility reviews, including public involvement and local government coordination. The following key points regarding the nature of Outstandingly Remarkable Values as outlined in the WSRA of 1968 are addressed specifically:
  - All values assessed should be directly river-related;
  - Resources should be at least regionally significant to be deemed outstandingly remarkable;
  - Features that are regionally exemplary, as well as those that are rare or unique [or exemplary] should be considered.

H.1.5 ELIGIBILITY DETERMINATION BY BLM INTERDISCIPLINARY TEAM

An interdisciplinary (ID) team was established comprising specialists in the disciplines of archeology, wildlife biology, range management, minerals, recreation, lands-realty, visual resource management, GIS, NEPA and planning, as well as field personnel from the San Juan River Unit and Kane Gulch (Grand Gulch) Ranger Station (Table 1).

Table 1. Monticello Field Office Interdisciplinary Team Members

Scott Berkenfield	Supv. Recreation Planner, Acting Field Manager	Co-Lead WSR, Scenic, Recreation, Management Considerations
Todd Berkenfield	Asst to Planner, WSR	Co-Lead WSR
Andy Boone	GIS Specialist	Recreation, Maps
Rick Boretti	San Juan River Ranger	Recreation, Wildlife/Birds
Paul Curtis	Rangeland Specialist	Grazing, Ecology, Riparian
Dale Davidson	Archeologist	Historic, Cultural
Ted McDougall	Solid Minerals	Minerals, Geology
Maxine Deeter	Lands & Realty, VRM	Scenic, Lands
Scott Edwards	Kane Gulch Ranger	Scenic, Recreation
Laura Edwards	Kane Gulch Ranger	Scenic, Recreation
Linda Richmond	San Juan River Ranger	Scenic, Recreation
Nick Sandberg	Assistant Field Manager	Grazing, Historic WSR Process
Summer Schulz	Rangeland Specialist	Vegetation, Weeds, Grazing
Nancy Shearin	Archeologist	Historic, Cultural
Gary Torres	NEPA Coordinator, Planner	NEPA, Planning
Tammy Wallace	Wildlife Biologist	Fish, Wildlife, Air & Water

Team members used the Wild and Scenic River Review in the State of Utah, Process and Criteria for Interagency Use, July 1996, ("Blue Book"), which provides interagency guidelines for Utah wild and scenic river studies as agreed to by Utah offices of the Bureau of Land Management (BLM), National Park Service (NPS), and United States Forest Service (USFS), as the main reference for the current eligibility process.

The following sections outline the considerations made in the ID team's evaluation process.

H.1.5.1 Identification of Potentially Eligible Rivers

The following sources were used to help identify all potentially eligible rivers:

a. Nationwide Rivers Inventory (NRI) list, NPS 1995, (Utah modified Oct 5, 2001)
b. American Rivers (ARI) Outstanding List, May 1991
c. 1970 USDA/USDI list, and 1972 list
d. A Citizen's Proposal to Protect the Wild Rivers of Utah, 1997 (Utah River Council, URC)
e. Identified in public scoping
f. Identified by Federal Agencies, State of Utah, Native American Tribes, local governments, and professional specialists within the BLM MFO.

To assure that no potentially eligible rivers were left out, the Monticello ID team reviewed 1:100,000 scale maps of HUC watercourse data. The MFO drainages are mapped at a 1:100,000 scale with the 16 river(s)/segments found eligible in 1992 delineated on five overlapping area resource maps. These were used as the basis for the current eligibility evaluation process.

The starting point for the 2003 Monticello Field Office WSR evaluation process was the 1992 list of 164 field office area watercourses. The ID team reviewed each river/segment for eligibility, using up-to-date guidelines.

H.1.5.2 Consideration of Free-flowing Character

For a river to be eligible for inclusion in the National Wild and Scenic River System, it must be free-flowing. All rivers in Monticello Field Office area are considered free-flowing because they:

- exist in their natural condition
- flow in natural condition
- have few impoundments
- have few diversions
- have no straightening
- have no rip-rapping
- have no modifications such as channelization

The San Juan River as it flows on BLM land is regulated upstream by the Navajo Dam, which is operated by the Bureau of Reclamation. Guidelines indicate that there are "many segments in the NWSRS which are downstream from major dams or even between dams", and that "structures within the study reach will not by themselves render a river ineligible." The guidelines also note "For purposes of eligibility determination, the volume of flow is sufficient if it is enough to maintain the outstandingly remarkable values identified within the segment" (BLM 8351.3.1B1).

H.1.5.3 Identification of Outstandingly Remarkable Values (ORVs)

For a river to be eligible for inclusion in the NWSRS, it must possess one or more outstandingly remarkable values (ORVs) within the river corridor (generally ¼ miles of the high water mark on each side of the river). Each value must be river-related, of at least regional significance, and should be rare, unique and/or exemplary.

Considerations for ORVs are listed in the "Blue Book" as follows:

- **Scenery (S):** Diversity of view, Special Features, Seasonal Variations, Cultural Modifications
- **Fish (F):** Habitat Quality, Diversity of Species, Value of Species, Abundance of fish, Natural Reproduction, Size and Vigor of Fish, Cultural/Historic Importance, Recreational Importance, Access
- **Recreation, Water Oriented and General (R):** Length of Season, Flow, Diversity of Use, Experience Quality, Scenery/Naturalness, Access, Level of Use, Associated Opportunities, Attraction, Sites and Facilities
- **Wildlife (W):** Habitat Quality, Diversity of Species, Abundance of Species, Natural Reproduction, Size and Vigor of Species, Cultural/Historic Importance, Recreational Importance, Access
- **Geologic (G):** Feature Abundance, Diversity of Features, Educational/Scientific
- **Historic (H):** Significance, Site Integrity, Educational/Interpretation, Listing/Eligibility
- **Cultural (C):** Significance, Current Uses, Number of Cultures, Site Integrity, Education/ Interpretation, Listing/ Eligibility
- **Ecological (E):** Species Diversity, Ecological Function, Rare Communities, Education/Scientific

The planning process for wild and scenic rivers prescribes that in order to be outstandingly remarkable, resources under review are found significant either regionally and/or nationally. The Wild and Scenic River Review in the State of Utah, p.5, states that "the determination of the appropriate region of comparison is left to the individuals involved in the ongoing planning effort", and, "that an appropriate region(s) [be] explicitly defined and that the methodology herein described [be] applied within that region(s)."

The Monticello Field Office is located in Southeastern Utah in the middle of the Colorado Plateau Physiographic Province, a large geographic region encompassing portions of four states, Utah, Colorado, New Mexico and Arizona. The ID team determined that the comparison would be based on eco-regions (subregions of the Colorado Plateau area) as described in the Ecological Subregions of the United States, produced by the U.S. Forest Service (USFS) in 1993.

The USFS document lists Subregions and Sections based on Ecological Units. The framework provides a systematic method for classifying and mapping areas of the Earth based on associations of ecological factors that change at different spatial scales (WO ECOMAP TEAM, 1993). Ecological types and Ecological Units are developed at various scales by integrating multiple components including climate, physiography, geology, soils, water, and potential natural vegetation (FSM2060, FSH 2090.11). The primary purpose for delineating Ecological Units is to identify land and water areas at different hierarchical levels that have similar capabilities and potentials for management.

A discussion among WSR planners in BLM Utah and USFS in May 2002 resulted in a summary of that discussion being e-mailed to federal agency wild and scenic river planners in Utah. It was recommended that the use of Ecological Units at the Section level of hierarchy was the best choice for regions of comparison.

Subregions within the Ecological Units are characterized by combinations of climate, geomorphic process, topography, and stratigraphy. Within Subregions, Sections are broad areas

of similar regional climate, geomorphic process, stratigraphy, geologic origin, and drainage networks (WO ECOMAP TEAM 1993).

The recommendation stated, "ecological sections are the best choice for regions of comparison. [They] define distinct breaks in major ecological systems defined by geology, geomorphology, climate, etc. They are the breaks that are most visible on the landscape, and provide an excellent context for relative consistency in scenic and other resource values for a region of comparison."

The following is a list of the Subregions/Sections initially considered as region(s) of comparison by the Mont FO ID team in their 2003 evaluation of the area's watercourses for potential eligibility as wild and scenic rivers:

- Subregion: Colorado Semi-Desert / Chapter 36
  - Sections: Grand Canyon (313A)
    Navajo Canyonlands (313B)
    Painted Desert (313D)
- Subregion: Arizona-New Mexico Mountains Semi-Desert – Open Woodland – Coniferous Forest – Alpine Meadow / Chapter 38
  - Section: White Mountain-San Francisco Peaks-Mogollon Rim (M313A)
- Subregion: Southern Rocky Mountain Steppe – Open Woodland – Coniferous Forest – Alpine Meadow / Chapter 43
  - Sections: Overthrust Mountains (M331D)
    Uinta Mountains (M332E)
    South Central Highlands ((M331G)
    Northern-Central Highland and Rocky Mountains (M331H)
- Subregion: Intermountain Semi-Desert and Desert / Chapter 47
  - Sections: Bonneville Basin (341A)
    Northern Canyon Lands (341B)
- Subregion: Nevada-Utah Mountains Semi-Desert – Coniferous Forest – Alpine Meadow / Chapter 49
  - Sections: Tavaputs Plateau (M341B)
    Utah High Plateaus Mountains (M341C)

The above mentioned Subregions and Sections for Region of Comparison were further defined by the ID team during the evaluation process. This list was narrowed (see below) to the specific Sections utilized for final comparison by the ID Team for each ORV.

- Scenic and Recreation:
  - Grand Canyon Lands Section (313A)
  - Navajo Canyon Lands Section (313B)
  - Northern Canyonlands Section (341B)
- Fish/Wildlife/Ecology:
  - Grand Canyon Lands Section313A)
  - Navajo Canyon Lands Section(313B)
  - Bonneville Basin Section (341A)

  - Northern Canyonlands Section (341B)
  - Tavaputs Plateau Section (M341B)
- Geology:
  - Grand Canyon Lands Section (313A)
  - Navajo Canyon Lands Section (313B)
- Historic/Cultural:
  - Grand Canyon Lands Section (313A)
  - Navajo Canyon Lands Section (313B)
  - White Mountain-San Francisco Peaks-Mogollon Rim Section (M313A)

Each resource was considered within the specific set of regions for comparison (noted above). The ID team determined if each resource considered was regionally and/or nationally significant, showing exemplary and/or rare and unique qualities. Guidelines from the Utah "Blue Book" indicating that "Resources should be at least regionally significant to be deemed outstandingly remarkable" were followed. Significance was evaluated by the ID team using all available information including personal knowledge, written data sources, and field trips.

The ID team subject matter specialists evaluated whether or not ORVs exist for each of the 167 river(s)/segments. From this list, 21 river(s)/ segments were initially identified as potentially eligible. In the following round of discussion and evaluation, of the 21 river(s)/segments inventoried, 16 were determined eligible and 3 not eligible (Lake Canyon, South Cottonwood Canyon, and Montezuma Creek) due to the lack of regionally significant ORVs. Three evaluated river/segments were combined into a single river area: Fish Creek Canyon, Owl Creek Canyon, and McLeod Canyon. These three canyons lie within the same drainage system, and exhibit the same outstandingly remarkable values and levels of significance.

H.1.5.4 TENTATIVE CLASSIFICATION

A tentative classification of "wild", "scenic", or "recreational" was determined for each eligible river/segment. The four key elements in evaluating tentative classification are:

Water Resources Development
Shoreline Development
Accessibility
Water Quality

Tentative classifications are based on the type and degree of human development associated with the river and adjacent lands as they exist at the time of the evaluation:

- A "wild" river is free of impoundments, with shorelines or watersheds essentially primitive and unpolluted waters.
- A "scenic" river may have some development, and may be accessible in places by roads.
- A "recreational" river is accessible by road or railroad, may have more extensive development along its shoreline, and may have undergone some impoundment or diversion in the past.

Criteria for the classification of river areas as wild, scenic and recreational are summarized in Table 2 below.

Table 2. Classification Criteria for Wild, Scenic, and Recreational River Areas

Attribute	Wild	Scenic	Recreational
Water Resources Development	Free of impoundment.	Free of impoundment.	Some existing impoundment or diversion. The existence of low dams, diversions, or other modifications of the waterway is acceptable, provided the waterway remains generally natural and riverine in appearance.
Shoreline Development	Essentially primitive. Little or no evidence of human activity. The presence of a few inconspicuous structures, particularly those of historic or cultural value, is acceptable. A limited amount of domestic livestock grazing or hay production is acceptable. Little or no evidence of past timber harvest. No ongoing timber harvest.	Largely primitive and undeveloped. No substantial evidence of human activity. The presence of small communities or dispersed dwellings or farm structures is acceptable. The presence of grazing, hay production, or row crops is acceptable. Evidence of past or ongoing timber harvest is acceptable, provided the forest appears natural from the riverbank.	Some development. Substantial evidence of human activity. The presence of extensive residential development and a few commercial structures is acceptable. Lands may have been developed for the full range of agricultural and forestry uses. May show evidence of past and ongoing timber harvest.
Accessibility	Generally inaccessible except by trail. No roads, railroads or other provision for vehicular travel within the river area. A few existing roads leading to the boundary of the river area is acceptable.	Accessible in places by road. Roads may occasionally reach or bridge the river. The existence of short stretches of conspicuous or longer stretches of inconspicuous roads or railroads is acceptable.	Readily accessible by road or railroad. The existence of parallel roads or railroads on one or both banks as well as bridge crossings and other river access points is acceptable.
Water Quality	Meets or exceeds federal criteria for federally approved state standards for aesthetics, for propagation of fish and wildlife normally adapted to the habitat of the river, and for primary contact recreation (swimming), except where exceeded by natural conditions.	Water quality sufficient to maintain outstandingly remarkable values.	

Attachment 2 of this document identifies the 6 rivers (12 segments[1]) within the Mont FO determined to be eligible, i.e., free-flowing with at least one river-related ORV. Water flows [hydrological descriptions] are listed next to the river name:

Perennial – a stream that flows continuously. Perennial streams are generally associated with a water table in the localities through which they flow.

Intermittent or seasonal - a stream that flows only at certain times of the year when it receives water from springs or from some surface source such as melting snow in mountainous areas.

Tentative classification worksheets [condensed] for each river/segment found eligible in Attachment 2 are included as Attachment 3.

H.1.5.5 Input from Governments, Agencies, Native American Tribes, Organizations and the Public

The Notice of Intent (NOI) for the current RMP was published June 4, 2003 in the Federal Register Vol. 68, No. 107 [UT 060-1610-DO-016J; UT 090-1610-DO-017J]. A news release, specifically stating intent to include wild and scenic rivers in the planning process, was published in the local newspaper, the San Juan Record, June 25, 2003. Comments and input to the eligibility determination process were invited from all governments, agencies, Native American Tribes and the public.

Coordination through the State of Utah Governor's Office representative initiates contact on the wild and scenic river process with local county governments. A wild and scenic river presentation was made by the governor's representative to the San Juan County Commissioners in 2002 in conjunction with the Manti-LaSal WSR eligibility process. Preliminary discussions were held concerning the Monticello Field Office wild and scenic river eligibility determination process with the San Juan County Public Lands Council May 20, 2003 and June 17, 2003. A meeting was held on August 20, 2003 to present the preliminary eligibility findings to the Public Lands Council, and to further discuss the WSR process.

The preliminary findings of eligible wild and scenic rivers for the Monticello Field Office area were provided for outside review and comment, with input invited from State and local governments, Native American Tribes, organizations, cooperating federal agencies, and the public. Preliminary eligibility findings were presented in a planning bulletin entitled *Preliminary Determination of Wild and Scenic Rivers,* BLM MFO, dated August 2003. Participation in this comment period included review, presentation of concurring and/or differing opinions regarding the preliminary ID team findings, and suggestions for additional potentially eligible rivers to be considered. Comments were analyzed and are available in the MFO WSR Administrative Record. A summary follows:

> BLM Monticello Field Office received comment information on wild and scenic rivers from 42 individuals/organizations, 27 letters and 15 scoping comments, with a total of 204 specific comments. Eighty-nine of these were general comments and 115 were specific to individual river(s)/segments as listed in the

[1] Mont FO preliminary identified 13 river segments as being potentially eligible. The team later received policy clarification resulting in the elimination of one segment. See Section H.3.5.6 of this document for additional explanation.

> *Preliminary Eligibility Determination of Wild and Scenic Rivers*, BLM MFO, August, 2003. The comment period ended January 31, 2004.
>
> Scoping for this phase of the WSR process requested comments on eligibility. Many of the comments received were outside the scope of the eligibility review, including comments that fall within the suitability phase of the WSR process that will be addressed in the DEIS, as well as comments concerning river management. The comments concerning suitability and management will be included in the data for the suitability phase of wild and scenic river evaluation in the DEIS.

The ID team has held eight meetings to evaluate and discuss potentially eligible rivers within the management area of the Monticello Field Office. San Juan County has participated in several of these meetings, and presentations were made to the San Juan County Public Lands Council.

The BLM MFO coordinated with the Price and Moab Field Offices, the BLM Canyon of the Ancients National Monument (COANM), the Manti-LaSal National Forest, and with the National Park Service units in Utah, including Canyonlands National Park (CNP), Glen Canyon National Recreation Area (GCNRA), and the Southeastern Utah Group which works with Natural Bridges National Monument (NBNM) and Hovenweep National Monument (HNM).

USFS - Manti-LaSal National Forest

The Manti-LaSal's *Final Eligibility Determination of Wild and Scenic Rivers* (March 2003) includes two eligible segments that flow onto BLM Monticello Field Office managed lands. The Forest Service's eligible segments of Lower Dark Canyon and Arch Canyon are contiguous with BLM Monticello Field Office evaluated river(s)/segments of the same names.

BLM Moab Field Office

Three eligible segments of the Colorado River flow through the BLM lands administered by the Monticello (MFO) and Moab Field Offices. The Moab FO administers the north or west side, and the MFO administers the south or east side of the segments. The boundary between field offices along the Colorado River is the centerline of the river. (See Section 6.2 for comparison of final eligibility findings.)

National Park Service

Continuing contact with the National Park Service (NPS) units with contiguous river boundaries to the Monticello Field Office has been part of the ongoing planning process. Glen Canyon National Recreation (GCNRA) has not begun their wild and scenic river evaluation; the GCNRA General Management Plan is not scheduled for revision for a number of years.

The National Park Service has previously found eligible and suitable the White Canyon Creek and its tributary Armstrong Canyon Creek as they flow through Natural Bridges National Monument. NPS has also found eligible the length of the Colorado River as it flows through Canyonlands National Park with a "wild" classification. (See Section 6.3 for comparison of findings.)

Canyon of the Ancients National Monument

The Canyon of the Ancients National Monument (COANM) located in southwestern Colorado is currently writing their management plan and conducting wild and scenic inventories. Monticello FO has found no eligible river(s)/segments along the mutual boundary of MFO and COANM at the Utah / Colorado border.

The Navajo Nation

The Navajo Nation has jurisdiction over and administers the south side of the San Juan River between the town of Montezuma Creek on the east to the Monticello Field Office (MFO) boundary at Glen Canyon National Recreation Area on the west. The MFO administers the north side of the San Juan River through this area except in the proximity of St. Christopher's Mission, where, due to a change in the river's course and deposition, the river, once bordering public lands is now bounded on the north side by Navajo land, and, south of the town of Bluff, where the river is now bounded by private lands. Contacts with the Navajo Nation, and their administrative departments (EPA, Water Resources, Fish and Wildlife), are ongoing and will continue throughout the suitability / DEIS study of the RMP revision.

Ute Mountain Ute Tribe

Information on the MFO's wild and scenic river eligibility process preliminary findings has been provided to the Ute Mountain Ute Tribe for comment and invited participation.

Bureau of Reclamation

The Bureau of Reclamation operates Navajo Dam on the San Juan River upstream from where the San Juan River flows through BLM land. In an email dated March 15, 2004, the Bureau commented that

> "During the late summer months, the flow in the San Juan from the dam to Lake Powell is almost exclusively made up of releases from Navajo [Dam]. [The Bureau of] Reclamation is attempting to operate the dam to better mimic the natural, pre-dam condition, but there are operational limitations that prevent us from exactly mimicking the pre-dam conditions."

The Bureau of Reclamation is currently finalizing an EIS concerning operation of the dam to meet flow recommendations [which will better mimic pre-dam conditions] developed for the endangered fish.

San Juan County

San Juan County has participated in the wild and scenic river evaluation process as cooperators, established through a Memorandum of Agreement (MOA) April 21, 2003 for the RMP revision process. Representatives of the San Juan County government as well as the San Juan County Public Lands Council have participated in the MFO wild and scenic evaluation process.

> "San Juan County will be actively involved in the Wild and Scenic Rivers review and designation process." [From the San Juan County Master Plan, page 19].

Comments by San Juan County on the MFO Wild and Scenic Rivers preliminary eligibility findings indicate that there are conflict(s) with the 1996 San Juan County Master Plan. These specific management concerns are appropriately addressed in the Suitability phase of the WSR

process. For instance, "The county feels that private water rights should be protected from Federal and State encroachment and/or coerced acquisition." [page 9, San Juan County Master Plan]. "San Juan County opposes the movement to nationalize or federally control water resources and water rights". [Page 30, San Juan County Master Plan].

San Juan County is actively involved in both the current eligibility process as stated above, and the upcoming suitability study, which is incorporated within the Draft Environmental Impact Statement (DEIS) RMP revision process.

The State of Utah - Department of Natural Resources

The State of Utah is a cooperating agency in the Monticello Field Office RMP revision process. By direction of the Governor, the State's Public Lands Policy department is involved in discussions, meetings, and reviews concerning wild and scenic river eligibility and suitability determination, as well as the entire RMP process. At the request of the Public Lands Policy department, water flow descriptions have been included in this final wild and scenic river document. (See Section 5.0, Individual River/Segment write ups).

School and Institutional Trust Lands Administration (SITLA)

SITLA is constitutionally charged to manage the school trust lands for the maximum monetary return to the trust. There are 3 sections of SITLA lands that interface with the Monticello Field Office area's WSR eligible river/segments. SITLA noted in a letter dated December 22, 2003 that "The presence of trust lands along the wild and scenic river corridor could encumber the manageability of the wild and scenic river system by over segmentation or by development that is inconsistent with the purpose of the Wild and Scenic Rivers Act". Although land ownership and jurisdiction is addressed in the suitability phase of the WSR process, note is made here of SITLA's concerns.

H.1.5.6 Eligibility of Segments Evaluated

As discussed in the previous section, Mont FO made its preliminary eligibility findings available for public review and comment in August 2003. At that time, the ID team had identified 13 rivers (13 segments) as potentially having the values that would make them eligible. Several comments were received and taken into consideration. The comment period ended December 30, 2003, and was extended to January 31, 2004 due to the volume of comments received for the RMP during the last weeks.

On April 12, 2004, the MFO received a memorandum dated April 8, 2004 from the BLM Washington Office providing clarification of "policy contained in the BLM Manual Section 8351 with respect to the eligibility criteria for potential wild and scenic rivers (WSRs) and protective management of identified river segments." The memorandum indicates that although intermittent streams may be eligible, as a general rule, ephemeral steams are not.

BLM MFO received IM 2004-196, *Clarification of Policy in the BLM Manual Section 8351, Wild and Scenic Rivers, with respect to Eligibility Criteria and Protective Management,* June 21, 2004, incorporating the guidance described:

> **Policy Clarification / Action**: This guidance clarifies policy contained in the BLM Manual 8351 and until incorporated into the Manual is applicable to all river segments determined eligible and/or suitable.

> As to the first issue, judgment is required in determining eligibility of watercourses that are free-flowing and have associated ORVs. As a general rule, the segment should contain regular and predictable flows (even though intermittent, seasonal, or interrupted). This flow should derive from naturally occurring circumstances, e.g., aquifer recharge, seasonal melting from snow or ice, normal precipitation, instream flow from spill ways or upstream facilities. Caution is advised in applying the … criterion to watercourses which only flow during flash floods or unpredictable events. The segment should not be ephemeral (flow lasting only a few days of a year). Evaluation of flows should focus on normal water years, with consideration of drought or wet years during the inventory.

Based on updated guidance and IM 2004-196 from the BLM Washington Office and an on-the-ground evaluation conducted in April/May 2004 with no moving water found in the following river/segments, the ID team in consultation with the field mangers of the Moab and Monticello Field Offices chose to drop from WSR eligibility consideration the streams identified as ephemeral. This included the following rivers/segments: White Canyon, upper reach of Dark Canyon, Grand Gulch, Slickhorn, Lime Creek, Comb Wash, Mule Canyon, and Fish/Owl/ McLeod Canyons.

As a result, the 6 rivers (12 segments) that flow on a perennial or intermittent basis are eligible and will be further studied as to their suitability in the DEIS.

Other changes to the preliminary eligibility findings were made as well. The changes to the preliminary eligibility findings include the following:

Colorado River – An additional segment was made from the northern-most boundary of the MFO at approximately river mile 50.5 to private land south of the Potash facility near river mile 48.5. This length of river was given a tentative classification of "wild" in the original 1992 evaluation, which only considered the river corridor on the Monticello side of the river. This approximately 2-mile segment is largely managed by the Moab Field Office on one side of the river and the Mont FO on the other side. It is free-flowing and has the following ORVs: fish, recreation, wildlife, cultural and ecological. It was given a tentative classification of "recreational" due to development and roads on the Moab side of the river.

Colorado River – The southern-most 12.2-mile reach of the river before it enters Canyonlands National Park, has been divided into two segments. The northern-most (now segment #2) runs from State lands near river mile 44 to approximately river mile 38.5 at another state section. This segment’s tentative classification went from "wild" to "scenic" due to the presence of roads on the shore, which are visible from the river itself. The lower segment (now segment #3) runs from near river mile 37.5 on the west side of a state section to the boundary of Canyonlands National Park near river mile 31. The tentative classification is "wild", as determined in the preliminary findings. There are no roads accessing this segment of the Colorado River though there are roads in the vicinity that run above the rim outside of the ¼ mile river-related corridor and hundreds of feet above the water level.

A scenic ORV has been assigned to the entire length of the Colorado River corridor from the northern-most MFO boundary to that of Canyonlands NP, reflecting the breathtaking vistas seen from the river itself. The findings of the MFO ID Team are consistent with the findings of the

Moab Field Office ID Team. The Colorado River is the boundary for these two field offices, each having jurisdiction on one side of the river corridor.

Fable Valley – The tentative classification was "wild" in the preliminary findings. On re-evaluation of the immediate area, the MFO ID team determined that a jeep route along some of the valley necessitated reclassifying this stream as "scenic" to meet the classification criteria. Upon reevaluation by the ID team of wildlife, vegetation and riparian specialists, an ecological ORV has been assigned to Fable Valley.

Dark Canyon – The upper approximately 6-mile reach of Dark Canyon that runs from the Manti-LaSal National Forest boundary to just above Youngs Canyon is an ephemeral stream. This section of the canyon was dropped from eligibility consideration due to the lack of either perennial or intermittent flow per the new guidance from the BLM Washington Office [April 8, 2004 and IM 2004-196, June 21, 2004]. The lower portion of Dark Canyon remains eligible as determined in the preliminary findings.

San Juan River – In the preliminary findings, the San Juan River was divided into four segments.

After information was brought forward on land ownership changes, the ID team chose to divide the river into five segments indicating the river character changes between segments #1 and #2 and different ORVs. The "avulsed" land area on the north side of the river that belongs to the Navajo Nation[2], and the "accreted" land on the north side of the river south of the Town of Bluff, Utah with its riparian areas accreted [accumulated] to private land ownership, occur between segments 1 and 2.

The new segmentation reflects the ORVs found in the preliminary eligibility findings except for the following. Recreation and ecological values are not ORVs found in new segment #1, although they were identified in the preliminary findings for the lower portion of what was the original first segment. Recreation and ecological values remain ORVs for new Segment #2. The ID team determined that recreation is minimal within new Segment #1, although new Segment #2 has high visitation and permitted recreational use.

After the preliminary eligibility findings went out for public review and comment, the ID Team specialists representing wildlife, vegetation, and riparian values, and the river rangers reviewed additional information and continued their ongoing discussion about whether or not adding an ecological ORV was appropriate for the San Juan River. As a result of this study and discussion, an ecological value was added as an ORV to the four segments (#2 through #5) of the river from river mile minus one, east of Sand Island, to the boundary of Glen Canyon NRA. Ecological habitat integrity is not as present in Segment # 1 due to the uses and development along that portion of the river corridor.

Arch Canyon – The tentative classification was “recreational” in the preliminary findings. The re-evaluation of fish, recreation, wildlife cultural and ecological resource, the ID team did not change that classification.

[2] Avulsion is defined as "a sudden and perceptible loss or addition to land by the action of water, or a sudden change in the bed or course of a stream" (Blacks Law Dictionary). The land on the north side of the San Juan River around St Christopher's Mission is an avulsion that is legally in Navajo land ownership. The course and reach of the San Juan River when the Navajo Nation Treaty was signed was at the northern edge of what is now the avulsed land. Before the up-river Navajo Dam was built, the San Juan was a typically braided river in this open lowland area. The river flow could change yearly and create different channels depending on its flow dynamics. At the time of the treaty, the river flowed at what is now the northern boundary of the avulsed area. This old boundary was legally assigned to the Navajo Nation because of their appeal that the land was theirs by treaty, even though the modern course of the river is now in a distinct channel well south of that original boundary.

The revised list of the 12 eligible segments is included as Attachment 4.

H.1.6 SUITABILITY STUDY

The 12 eligible segments will be further reviewed as to their suitability for congressional designation into the National System. This will be done within the framework of the ongoing planning process for the Moab Resource Management Plan (RMP), including the development of an Environmental Impact Statement (EIS).

The purpose of the suitability step of the study process is to determine whether eligible rivers would be appropriate additions to the national system by considering tradeoffs between corridor development and river protection. Suitability considerations include the environmental and economic consequences of designation and the manageability of a river if it were designated by Congress.

The Wild and Scenic River Suitability evaluation is designed to answer the following questions:

- Should the river's free-flowing character, water quality, and outstandingly remarkable values (ORVs) be protected? OR, are one or more other uses important enough to warrant doing otherwise?
- Will the river's free-flowing character, water quality, and ORVs be protected through designation? And, is wild and scenic river designation the best method for protecting the river corridor and its values?

In answering these questions, the benefits and impacts of WSR designation must be evaluated, and alternative protection methods considered.

The EIS for the RMP evaluates impacts that would result if the eligible rivers were determined suitable and managed to protect their free-flowing nature, tentative classification, and outstandingly remarkable values. It also addresses impacts that would result if the eligible rivers are not determined suitable and their values are not provided protective management. The range of alternatives include the No Action alternative, which does not address suitability and leaves rivers eligible, and Alternative B, which finds all eligible rivers suitable. Alternative C may find some eligible rivers as suitable, and Alternative D finds no rivers suitable.

Alternative tentative classifications are also evaluated. "Whenever an eligible river segment has been tentatively classified, e.g., as wild, other appropriate alternatives may provide for designation at another classification level (scenic or recreational). There is not another classification alternative for rivers tentatively classified as recreational. As long as a river segment is under study, it must be afforded protection at the tentative classification level it was given when determined eligible, even if another classification is considered as an alternative in the RMP" (BLM Manual Section 8351.33C). For river segments determined nonsuitable in the RMP, the river shall be managed in accordance with the management objectives as outlined in the RMP (BLM Manual Section 8351.53B).

In addition to the impact analysis addressed by alternative, the following suitability considerations are applied to each eligible river in Attachment 5.

- Characteristics which do or do not make the area a worthy addition to the national system
- Status of land ownership and use in the area

- Uses, including reasonably foreseeable potential uses, of the area and related waters, which would be enhanced, foreclosed, or curtailed if the area were included in the national system of rivers; and the values which could be foreclosed or diminished if the area is not protected as part of the national system.
- Interest by federal, tribal, state, local, and other public entities in designation or non-designation of a river, including the extent to which the administration of the river, including the costs thereof, can be shared by the above mentioned entities.
- Ability of the agency to manage and protect the values of a river if it were designated, and other mechanisms to protect identified values other than Wild and Scenic Rivers designation.
- The estimated cost, if necessary, of acquiring lands, interests in lands, and administering the area if it were included in the national system.
- The extent to which administration costs will be shared by local and state governments.

The following table lists the interdisciplinary meetings held during the suitability step of this study process.

Table 3. Suitability Study Interdisciplinary Meetings

Date	Attending	
February 12, 2004	Evan Lowry, San Juan County Walter Bird, San Juan County Maxine Deeter, Lands/Realty, VRM Ted McDougall, Minerals Mark Meloy, Recreation	Scott Berkenfield, Recreation Tammy Wallace, Wildlife Summer Schulz, Range, Weeds Andy Boone, GIS Todd Berkenfield, WSR, Planning
March 11, 2004	Evan Lowry, San Juan County Ed Scherick, San Juan County Gary Torres, NEPA, Planner Todd Berkenfield, WSR, Planning Summer Schulz, Range, Weeds Roaldn Thompson, Planning	Maxine Deeter, Lands, VRM, OHV Nancy Shearin, Cultural, Paleo Nick Sandberg, Range, Asst FOM Tammy Wallace, Wildlife Scott Berkenfield, Recreation Paul Curtis, Range

Public comment received on the Draft EIS/RMP will be used to improve the documentation of the suitability considerations presented in Attachment 5 of this document, as well as the documentation of impacts that would result from the various alternatives. The actual determination of whether or not each eligible river segment is suitable is a decision that will be made in the Record of Decision for the Monticello RMP.

H.1.7 SUMMARY

Approximately 1,300 miles of watercourses within the Monticello Field Office resource area were inventoried and determined to be free-flowing. Each river/segment was evaluated on the basis of having at least one river-related outstandingly remarkable value (ORV) considered rare, unique and/or exemplary, with each ORV being at least regionally significant, and having perennial or intermittent flows. Within the Monticello FO area, 6 rivers with 12 segments of approximately 93 miles were found to meet these criteria.

Scoping for the eligibility phase of the WSR process requested input and comments based on the Mont FO Preliminary Eligibility Determination for WSR, August 2003. Comments were

received from 43 individuals/organizations, 28 letters and 15 scoping comments, with a total of 204 specific comments. Eighty-nine of these were general comments and 115 were specific to individual river(s)/segments. The comment period for the RMP ended January 31, 2004. The Comment Analysis is available through the Mont FO WSR Administrative Record.

The suitability phase of review will occur within the framework of the RMP through the EIS process.

WILD AND SCENIC RIVER STUDY PROCESS ATTACHMENTS

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Attachment 1: River(s)/Segments Inventoried and Evaluated by Mont FO, Drainages by River System, Monticello Field Office

COLORADO RIVER - State lands near river mile 44 to Canyonlands NP, near river mile 31
WHITE CANYON – Forest boundary to GCNRA
BURCH CANYON – Forest boundary to Natural Bridges
DEER CANYON – Source to Natural Bridges
K AND L CANYON – Source to White Canyon
HIDEOUT CANYON – Source to White Canyon
CHEESEBOX CANYON – Source to White Canyon
GRAVEL CANYON – Source to White Canyon
LONG CANYON – Source to White Canyon
SHORT CANYON – Source to White Canyon
FORTKNOCKER CANYON – Source to White Canyon
FRY CANYON –Source to White Canyon
WHITE CANYON Unnamed Tributaries – Sources to mouths
RED CANYON – Source to GCRNA
BLUE CANYON – Source to Red Canyon
PIUTE CANYON – Source to Red Canyon
RAINBO CANYON – Source to Red Canyon
MAHON CANYON – Source to GCNRA
WILSON CANYON – Source to GCNRA
HIDDEN VALLEY – Source to GCNRA
BLUE NOTCH CANYON – Source to GCNRA
RED CANYON Unnamed Tributaries – Sources to mouths
MANCOS CANYON – Source to GCNRA boundary
CEDAR CANYON – Source to GCNRA boundary
KNOWLES CANYON – Source to GCNRA boundary
FORGOTTEN CANYON – Source to GCNRA boundary
NORTH GULCH – Source to GCNRA
MOKI CANYON – Source to "Crack" Road
-"Crack" Road to GCNRA boundary
LAKE CANYON – Sources E & W forks to GCNRA boundary
INDIAN CREEK – Forest boundary to Donnelly Canyon
TITUS CANYON – BLM lands to mouth
SHAY CANYON – BLM lands to mouth
HOG CANYON – Source to mouth
DONNELLY CANYON – Source to mouth
INDIAN CREEK – Donnelly Canyon to Falls 2 miles below mouth of Hart Canyon
HART DRAW – Source to Donnelly Canyon
INDIAN CREEK – Falls 2 miles below Hart Canyon to NPS boundary
LAVENDER CANYON – NPS boundary to mouth
DAVIS CANYON – NPS boundary to mouth
HATCH WASH
TANK WASH – Source to mouth
MAIL STATION WASH – Source to mouth
WIND WHISTLE DRAW – Source to mouth
HATCH WASH / EAST CANYON
BIG INDIAN WASH – Source to Resource Area boundary
DRY WASH – Source to mouth
EAST CANYON – Source to Resource Area boundary

SOUTH CANYON – BLM lands to mouth
IRON SPRING CANYON – BLM lands to mouth
BRIDGE CANYON – BLM land to mouth
PETERS CANYON – BLM lands to mouth
HART'S DRAW – Source to mouth
TURNERWATER CANYON – Source to mouth
LONE CEDAR CANYON – Source to mouth
HART SPRING CANYON – Source to mouth
BOBBYS HOLD CANYON – Source to mouth
HART CANYON Tributaries from Hart Point – Sources to mouths
NORTH COTTONWOOD – BLM lands to mouth
STEVENS CANYON – BLM lands to mouth
RUSTLER CANYON – Source to mouth
HORSETHIEF CANYON – Source to NPS boundary
LOCKHART CANYON – Source to NPS boundary
DRIPPING CANYON – Source to NPS boundary
SALT CREEK – BLM land to NPS boundary
BUTLER WASH – Source to NPS boundary
CROSS CANYON – Source to NPS boundary
BEEF BASIN WASH – Forest boundary to mouth
RUIN CANYON – BLM lands to mouth
GYPSUM CANYON – Source to GCNRA boundary
SWEET ALICE CANYON – Source to mouth
SOUTH CANYON – Source to mouth
FABLE VALLEY – Source to mouth
BOWDIE CANYON – Source to GCNRA
DARK CANYON – Forest Boundary to GCNRA
LEANTO CANYON – Source to GCNRA
YOUNGS CANYON – Source to mouth
BLACK STEER CANYON – Source to mouth
LOST CANYON – Source to mouth

SAN JUAN RIVER - W. Montezuma Creek to mile 9

- River mile 9 to river mile 23
- River mile 23-28 (above boat ramp to town of Mexican Hat)
- River mile 28 to GCNRA boundary

LOWER SAN JUAN Tributaries – Sources to mouths
JOHNIES HOLE CANYON – Entire length
CASTLE CREEK – Source to Rock Spring
- Rock Spring to GCNRA boundary

MIKE'S CANYON – East & West main forks, Sources to GCNRA
CLAY HILLS DRAW – Source to GCNRA boundary
WHIRLWIND DRAW – Source to GCNRA boundary
STEER GULCH – Source to GCNRA boundary
EAST STEER GULCH – Source to GCNRA boundary
POINT LOOKOUT Drainages – Source to GCNRA boundary
JOHNS CANYON – Source to GCNRA boundary
MEXICAN HAT NORTH Drainages – Sources to San Juan River
GRAND GULCH
- Gulch and Tributaries inside Instant Study Area
- Gulch and Tributaries outside Instant Study Area
DRIPPING CANYON – Source to Grand Gulch Instant Study Area
COW TANK CANYON– Source to Dripping Canyon

STEP CANYON – Source to Pine Canyon
PINE CANYON – Source to Grand Gulch Instant Study Area
SLICKHORN CANYON – Source to GCNRA boundary
SLICKHORN PASTURE CANYON – Source to GCNRA boundary
LIME CREEK, East and West Forks - Sources East and West Forks to confluence with main stream to mouth
COMB WASH – Source to mouth
MULE CANYON – Forest boundary to No & So forks convergence east oft County Rd 263& St 95
- Texas Flat Road to mouth
ARCH CANYON – Forest boundary to mouth
DRY WASH – Source to mouth
FISH CREEK – Source to mouth
OWL Creek – Source to mouth
McLEOD CANYON – Upper end
- Lower 5 miles to mouth
ROAD CANYON (all forks) – Sources to mouth
BARTON RANGE CANYON – Source to mouth
BUTLER WASH – Source to mouth
STEVENS CANYON – Source to Butler Wash
SOUTH COTTONWOOD – Forest boundary to mouth
HAMMOND CANYON – Forest Boundary to South Cottonwood
WHISKERS DRAW – Source to mouth
BRUSHY BASIN WASH – Source to mouth
ZEKE'S HOLE Drainage – Source to mouth
WESTWATER CANYON – Source to mouth
RIGHTHAND FORK – Ute lands to mouth
BLACK ROCK CANYON – Source to mouth
RECAPTURE CANYON – Forest boundary to mouth
JOHNSON CREEK – Forest boundary to mouth
BULLDOG CANYON – BLM lands to mouth
BULLPUP CANYON – BLM lands to mouth
BROWN CANYON – BLM lands to mouth
CORRAL CREEK – BLM lands to mouth
UTE CANYON – Source to mouth
ROAD CANYON – Source to mouth
HORSE CANYON – Source to Navajo Reservation
JENNYS CANYON – Source to mouth
ALKALI CANYON – Source to Navajo Reservation
BULLPEN SWALE – Source to mouth
McCRACKEN WASH – BLM lands to mouth
BUCKET CANYON – BLM lands to mouth
MONTEZUMA CREEK – BLM lands to Navajo Reservation
VERDURE CREEK – Lower 2 miles
BOULDER CREEK – Lower 2 miles
PEARSON CANYON – Source to mouth
HORSEHEAD CANYON – Source to mouth
BIGWATER CANYON – Source to mouth
COALBED CANYON – Stateline (CO) to mouth
TANK CANYON – Source to mouth
MONUMENT CANYON – Stateline (CO) to mouth
LAKE CANYON – Source to mouth
BULL CANYON – Source to mouth
BUG CANYON – Source to private land

BLACK STEER CANYON – BLM lands
DODGE CANYON – BLM lands to mouth
LONG CANYON – BLM lands to mouth
DEVIL CANYON – BLM lands to mouth
BRADFORD CANYON – Source to mouth
DEADMAN CANYON – Source to mouth
CAVE CANYON – Source to mouth
McELMO Drainage
CAJON LAKE – T.39S., R26 E., S.10, NWNW
LITTLE RUIN CANYON – Hovenweep NM. To Navajo Reservation
KEELEY CANYON – BLM lands to mouth

DELORES RIVER

SUMMIT CANYON – BLM lands to Stateline (CO)
RUSTLER CANYON – BLM land to mouth
WILDHORSE CANYON – BLM lands to mouth
CROSS CANYON – Stateline (CO) to mouth
LITTLE NANCY CANYON – Source to mouth
NANCY PATTERSON CANYON – Source to mouth
SQUAW CANYON – Stateline (CO) to mouth
PAPOOSE CANYON – Stateline (CO) to mouth
CROSS CANYON POND – T.38S, R.25E, S.35, SENW

Attachment 2: ORVs and Tentative Classification of Individual Eligible Wild and Scenic River(s)/Segments, Monticello FO

COLORADO RIVER –
Perennial river

The north/west side of this section of the Colorado River is managed by the BLM Moab Field Office, the south/east side of the same section of river is managed by the BLM Monticello Office. The boundary of the two resource areas is the centerline of the Colorado River.

Segment Description with approximate river miles	Length In BLM River Miles	Outstandingly Remarkable Values ORVs	Tentative Classification
Segment # 1: Northern-most FO boundary near River Mile 50.5 on the east side of the river [1 mile north of Potash land] south to private land near River Mile 48.5	2.2 miles	• Scenic • Fish • Recreation • Wildlife • Cultural • Ecological	Recreational
Segment #2: State lands near River Mile 44 to approx. River Mile 38.5	5.5 miles	• Scenic • Fish • Recreation • Wildlife • Cultural • Ecological	Scenic
Segment #3: River Mile 37.5 west of State school section to boundary of Canyonlands NP near River Mile 31	6.5 miles	• Scenic • Fish • Recreation • Wildlife • Cultural • Ecological	Wild

Description of Outstandingly Remarkable Values (ORVs):

Scenic: Layered rock formations exhibit contrasting colors ranging from pale limestone to red sandstone formations and variations in between. Embedded layers of dark patterned rock and uplifted formations tilting towards each other surround and show off the wide river corridor. The broad flowing water, sometimes brown with sediment and at other times clear and reflecting the sky's blue, contrasts with the thick green of river bank vegetation. There is a never ending exhibit of eroded formations, towers, spires, rimrocks, outcrops, and vertical walls hundreds of feet high on both sides of the river. This is a desert waterway with ever changing vistas of grand proportions.

Fish: The Colorado River has a unique resident fish population with more than two-thirds of the native fish being endemic, that is, restricted to a locality or region. The Colorado River has designated critical habitat for the endangered Bonytail, Humpback chub, Colorado pikeminnow, and the Razorback sucker. These endangered species are also listed as Sensitive Species in Utah (any wildlife species or subspecies that has experienced a substantial decrease in population, distribution and/or habitat availability) and protected under state laws. The first two species are found nowhere else in the world besides the Colorado River system. The Colorado River is also home to the Bluehead sucker and Flannelmouth sucker, which are also listed as Sensitive Species for the state of Utah. Also found in the Colorado River are the channel catfish, roundtail chub, speckled dace, Plains killifish, fathead minnow, red shiner, sand shiner, smallmouth bass, largemouth bass, carp, black bullhead, and walleye.

Recreation: Downstream from the town of Moab, UT, the Colorado River provides a popular year-round float opportunity for boaters both motorized and non-motorized. Approximately 12,000 visitors per year boat on this section of the river. Locals and visitors from all over the world use this section to fish, raft, powerboat, canoe, hike, camp, and enjoy the spectacular red rock country scenery. Outfitters market their trips both nationally and internationally.

This section of the Colorado River provides the most common method of approach for boaters entering Cataract Canyon, a world renowned white water adventure. Outfitters stop for boaters along this BLM

Attachment 2: ORVs and Tentative Classification of Individual Eligible Wild and Scenic River(s)/Segments, Monticello FO

segment of the Colorado River, offering points to get onto or off the river. Jet boats shuttle canoe trips from the confluence of the Green and Colorado Rivers in Canyonlands National Park back to Moab using this stretch of the Colorado River. There are remnants of a petrified forest on the river bank, a fossil point of interest with brachiopods, horned corral, and two forms of primitive sharkline fish teeth, providing visitors a view into the distant past.

Wildlife: The Colorado River provides riparian habitat through an otherwise semi-arid region that supports a wide variety of wildlife species including avian, terrestrial, and aquatic. This reach of the river provides or is potential habitat for threatened and endangered species such as the Bald eagle, Southwestern willow flycatcher, Mexican spotted owl, and the Yellow-billed cuckoo (candidate species). The river provides crucial habitat for desert bighorn sheep, peregrine falcons, golden eagles, and other raptors. The Colorado River is a major bird migratory corridor, and provides the essential habitat for waterfowl, shorebirds, songbirds, and neo-tropical migrants. Other wildlife utilizing this habitat includes mule deer, raccoons, bats, reptiles, amphibians, and Northern river otters.

Cultural: The Colorado River has evidence of significant occupation and use by both prehistoric and historic peoples. Native Americans consider the Colorado River and its major flowing tributaries as sacred spaces. The variety and number of archeological and historical sites adjacent to the river embrace the occupation of these prehistoric and historic peoples. Sites include alcoves, rock shelters, lithic scatters, rock art, and open camp sites. Prehistoric sites have the potential to provide information concerning the use of the river corridors by Archaic, Fremont, and Pre-Puebloan Cultures, as well as the Numic speaking peoples.

Early travelers and traders also utilized the Colorado River as fords, crossings developed with the advent of increased travel between the Southwest and the Pacific coast. Historic European homesteads are also present.

Ecological: The Colorado River is adjacent to the Pacific Flyway and provides important habitat for many migrating neo-tropical shorebird and waterfowl species. The aquatic, wetland and riparian habitats provide respite and survival for the existence of many wildlife species. The river corridor contains vegetative islands that serve as important refuge and nesting habitats for many of the migrant waterfowl species, including the Canada goose and plovers. The river corridor contains some the last remnant populations of river otters, as well as nesting and forage habitat for endangered Bald eagle, endangered Mexican spotted owl, endangered Southwestern willow flycatcher, endangered bats, and the four species of endangered native fish endemic to the Colorado River system. There are also remnant native Cottonwood and willow present along the river banks which provide habitat to wildlife species.

- **Hanging Gardens –** Hanging gardens are unique herbaceous communities that develop under certain geologic and climatic features in arid to semi-arid climates. They are fed by groundwater aquifers in either fine-grained sandstones or in limestones and exist on cliff faces or in undercut alcoves. Hanging garden vegetation is structurally and floristically distinct from other spring-supported vegetation in the American southwest.

INDIAN CREEK –
Perennial stream from NF boundary to Shay Canyon, and Intermittent from Shay Canyon to Donnelly Canyon

Segment Description	Length In BLM River Miles	Outstandingly Remarkable Values ORVs	Tentative Classification (See Appendix)
Manti-LaSal National Forest Boundary to Donnelley Canyon	4.8 miles	• Cultural	Recreational

Description of Outstandingly Remarkable Values (ORVs)

Cultural: Rock art sites are the significant cultural resources along Indian Creek. Newspaper Rock, the best-known site along the Creek, is listed on the National Register of Historic Places. Native Americans, who have visited these sites, recognize images that relate to their migration history. Cultural resources in this area represent the interface between two prehistoric cultural groups: Pre Puebloan and Fremont. This interface is represented in unique motifs in the rock art in this area as well as within site features and artifacts such as ceramics and baskets.

Attachment 2: ORVs and Tentative Classification of Individual Eligible Wild and Scenic River(s)/Segments, Monticello FO

FABLE VALLEY – Perennial stream			
Segment Description	**Length In BLM River Miles**	**Outstandingly Remarkable Values ORVs**	**Tentative Classification (See Appendix)**
Source to Mouth	6.8 miles	• Wildlife • Ecological	Scenic
Description of Outstandingly Remarkable Values (ORVs):			
Wildlife: Fable Valley is a narrow, discontinuous riparian corridor characterized by appropriate willow-dominated riparian vegetation, which is prime habitat for the Southwestern willow flycatcher. The extreme north end of the canyon is a deep, narrow slick rock-dominated zone that is prime habitat for the Mexican spotted owl, and is designated as critical habitat for Mexican spotted owls. Surveys for both of these species have been conducted in Fable Valley with both of these endangered species present. This is the only canyon in the field office area in which both endangered species have been documented. This area is also important for other neo-tropical birds that migrate into Utah. Fable Valley has perennial water and an abundance of native riparian vegetation, and sagebrush benches. The valley is a very important area for other wildlife, including mule deer, elk, bats, retiles, amphibians, and raptors. **Ecological:** Fable Valley offers a diversity of both plant and animal species, including the presence of rare communities. There is an array of ecological values including a unique riparian habitat that allows for the cohabitation of two federally listed T & E avian species. The multi-terraced canyon walls are adequate for nesting and roosting of the threatened Mexican spotted owl, while the numerous small open pools and discontinuous flows fed by subsurface springs and seeps provide for a year round supply of water. The associated willow-dominated riparian areas include over 17 vegetative species, with few exotic tamarisk, providing habitat for the endangered southwestern willow flycatcher, and 27 upland vegetative species. The Monument milkvetch (*Astragalus monumentalis*) and the Kachina daisy (*Erigeron kachinensis*), both sensitive species, may also occur in the area.			

DARK CANYON - Perennial stream			
Segment Description	**Length In BLM River Miles**	**Outstandingly Remarkable Values ORVs**	**Tentative Classification (See Appendix)**
Youngs Canyon to Glen Canyon National Recreational Area	6.4 miles	• Scenic • Recreation • Wildlife	Wild
Description of Outstandingly Remarkable Values (ORVs)			
Scenic: The Dark Canyon area is roadless, primitive and undeveloped, and is one of the deepest canyon systems in the region. The remote location, dramatic rugged terrain, deep walled canyon, and naturalness of the area create a high scenic value. It has unobstructed and expansive diversity of views including 1,200 foot vertical cliff walls, rimrock, outcrops and spires, and a visual contrast from soil and rock color, flowing water, potholes, pour offs, and diverse vegetation located throughout the canyon and tributaries. The BLM portion of Dark Canyon watershed is contiguous with Glen Canyon National Recreation Area where it drains into the Colorado River, and with the Manti-LaSal National Forest where Dark Canyon is a designated wilderness area. **Recreation:** Dark Canyon has a high diversity including outstanding natural, historical, and cultural features offering recreational, educational, and scientific opportunities for visitors. It attracts visitors internationally. A wide variety of recreational opportunities are available including backpacking, camping, photography, wildlife viewing, canyoneering and orienteering, and viewing prehistoric archeological sites. The Ancestral Puebloans used this canyon area leaving behind cliff dwellings, rock shelters, rock art, and storage areas, which are viewed from within the corridors of the canyon. **Wildlife:** Dark Canyon is within designated critical habitat for the Mexican spotted owl. Surveys have been			

Attachment 2: ORVs and Tentative Classification of Individual Eligible Wild and Scenic River(s)/Segments, Monticello FO

conducted in this canyon, and there have been owls using this area. Dark Canyon and its drainages also contain the only two protected activity center(s) (PAC) for the Mexican spotted owl within the Monticello Field Office area. PACs are nest areas occupied at least once since 1989. The habitat in this canyon is also critical for peregrine falcon and other raptors. At the lower elevations, there are ringtail cats and bobcats as well as desert bighorn sheep present.

SAN JUAN RIVER –
Perennial river

The north side of the San Juan is under BLM Monticello Field Office management, San Juan SRMA. The South side falls under the jurisdiction and administration of the Navajo Nation. The Navajo Nation and Monticello Field Office area boundary is located at the centerline of the San Juan River.

Segment Description with approximate river miles	Length In BLM River Miles	Outstandingly Remarkable Values ORVs	Tentative Classification (See Appendix)
Segment # 1: W. Montezuma Creek to private land just before "avulsed" parcel of Navajo Nation land at St Christopher's Mission	8.5 miles	• Fish • Wildlife • Cultural/Historic	Recreational
Segment #2: West of "accreted" land at town of Bluff, UT near River Mile (minus) -1 to River Mile 9	10 miles	• Fish • Recreation • Wildlife • Cultural/Historic • Ecological	Recreational
Segment #3: Near River Mile 9 to near River Mile 23, above the Mexican Hat formation	13.3 miles	• Scenic • Fish • Recreation • Geologic • Wildlife • Ecological	Wild
Segment #4: Near River Mile 23 to near River Mile 28	4.2 miles	• Scenic • Fish • Recreation • Wildlife • Ecological	Recreational
Segment #5: Near River Mile 28 to boundary of Glen Canyon NRA near River Mile 45	17.3 miles	• Scenic • Fish • Recreation • Geologic • Wildlife • Ecological	Wild

Description of Outstandingly Remarkable Values (ORVs)

Fish (Segments 1-5): The San Juan River, which is part of the Upper Colorado River system, has a unique resident endemic fish population. This river contains designated critical habitat for the endangered Colorado pikeminnow and the Razorback sucker. These endangered species are also listed as Sensitive Species in Utah (any wildlife species or subspecies that has experienced a substantial decrease in population, distribution and/or habitat availability) and protected under state laws. They are found no where else in the world besides the Colorado River system. The San Juan River is also home to the Bluehead sucker and Flannelmouth sucker, which are listed as Sensitive Species for the state of Utah. Also found in the San Juan River are the channel catfish, roundtail chub, speckled dace, fathead minnow, red shiner, sand shiner,

Attachment 2: ORVs and Tentative Classification of Individual Eligible Wild and Scenic River(s)/Segments, Monticello FO

smallmouth bass, largemouth bass, carp, black bullhead, yellow bullhead, walleye, and northern pike.

Wildlife (Segments 1-5): The San Juan River, which runs through an otherwise semi-arid region, provides riparian habitat that supports a wide variety of wildlife species including avian, terrestrial, and aquatic. Potential habitat is also provided for the following threatened or endangered species: Bald eagle, Southwestern willow flycatcher, and the Yellow-billed cuckoo (candidate species). The river provides crucial habitat for wintering eagles, peregrine falcon, coopers hawk and other raptors, and is a major migration route and nesting area for neo-tropical birds, shorebirds, and waterfowl species. The San Juan River provides habitat for Lucy's warbler, and Broad-tailed hummingbird, which are species on the Utah Partners in Flight Priority Species. Other wildlife utilizing this habitat includes desert bighorn sheep, mule deer, raccoons, the Northern river otter, bats, reptiles and amphibians.

Cultural (Segments 1 and 2): There is no doubt that the San Juan River Valley was heavily populated in prehistoric times. The riverbank has washed much of the evidence of that occupation away. What does remain is rock art that is unsurpassed on the Colorado Plateau. Several of the rock art sites are recognized as "Type Sites" for specific rock art motifs because they are so wonderfully expressed and are so well preserved.

Historic (Segments 1 and 2): These segments contain historic sites associated with the settlement and development of Southeastern Utah. Some of the most critical events in that settlement process took place in the vicinity of the convergence of Comb Ridge and the San Juan River. These include the epic "Hole in the Rock" journey, the construction and abandonment of Barton's Trading Post, and the early attempts at irrigation from the San Juan River. The San Juan River was designated as the northern boundary of the Navajo Reservation from just west of Montezuma Creek to Glen Canyon National Recreation Area.

Scenic (Segment 3): VRM Class I. This segment begins at the base of the Lime Ridge Anticline, where spectacular variations in color are created by the interbedded layers of gray limestone and red sandstones, contrasting with green riparian vegetation at the water's edge. Within the canyon, views are of steep vertical cliff walls nearly 900 feet high with unobstructed views to the rims, and views of abandoned river meanders perched high above the current water level.

Scenic (Segment 4): This segment begins as the river flow parallels the base of the Raplee Anticline, a spectacular section of contrasting color caused by the interbedded sandstone and limestone, which have been tilted and eroded, forming the unique "Navajo Rug" formation of zigzag lines of colored rock. On the opposite river bank is the nationally recognized "Mexican Hat" formation. Next in view are the variously carved spires of Cedar Mesa Sandstone, and an excellent view of the exposed volcanic neck called "Alhambra".

Scenic (Segment 5): This San Juan River segment is one of the deepest in the entire Navajo Canyonlands Ecological Section with canyon walls over 1,200 feet high. This spectacular Goosenecks section is one of the finest examples of entrenched river meanders in the United States and is of national significance. A float through this section allows unique views across the low "necks" of the meander loops to the canyon walls of the opposite side of the loop. There is extreme visual contrast between the limestone walls of the inner gorge and views of the red Cedar Mesa Sandstone that tower an additional 800 feet on the terraces above.

Recreation (Segments 2 and 3): These sections of the San Juan River become narrower, swifter, and rockier with white water rapids and many riffles to negotiate (some particularly challenging at low water due to rocks), and flow past ever changing geological formations, historical mining sites, abundant wildlife, and towering multi-colored cliff formations. The San Juan River, from the Sand Island put-in the Mexican Hat take-out, draws the highest number of boaters every year with a three year average of 13,500 user days/year. Permits are required due to the large demand for day and multi-day use.

- **Sand Waves** – The San Juan River is world renowned for its sand waves. At high water, the results of snowmelt or hard rain, the river pushes huge amounts of sand down stream. The swollen flows pile sand into dunes on the river bottom, which are seen on the surface of the water as even waves. These waves can crest at 8 feet and disappear within minutes, only to reappear and build again. Remarkably, whole wave trains appear to move upstream defying the flow of the river. Although sand waves can be seen anywhere along the river, they are most abundant where tributaries like Comb and Chinle Washes (Segment 2) add vast quantities of new sand to the channel, and again in the Goosenecks, downstream (Segment 5).

Recreation (Segment 4): This short section of the San Juan River fills the river runner's experience with

Attachment 2: ORVs and Tentative Classification of Individual Eligible Wild and Scenic River(s)/Segments, Monticello FO

spectacular views (described above in Scenic) of the many differing geological formations surrounding the river.

Recreation (Segment 5): Below the town of Mexican Hat the boater winds through high walled, entrenched meanders in a remote area with very limited access. Solitude, spectacular geology, historical mining sites, and opportunities for remarkable side canyon hiking surround the visitor with recreational experiences. Class II and one Class III rapids (named Government Rapid) make this section an exciting multi-day river run. Camping is in specific permitted campsites due to the high use demand and the few appropriate sites available along the high cliff walls.

- **Sand Waves** – The San Juan River is world renowned for its sand waves. At high water, the results of snowmelt or hard rain, the river pushes huge amounts of sand down stream. The swollen flows pile sand into dunes on the river bottom, which are seen on the surface of the water as even waves. These waves can crest at 8 feet and disappear within minutes, only to reappear and build again. Remarkably, whole wave trains appear to move upstream defying the flow of the river. Although sand waves can be seen anywhere along the river, they are most abundant where tributaries like Comb and Chinle Washes add vast quantities of new sand to the channel. Occurrence is most common along the first nine miles downstream from Sand Island (Segment 2) and in the Goosenecks (Segment 5).

Ecological (Segments 2-5): The San Juan River offers an array of ecological values including a unique riparian corridor through an otherwise semi-arid region with a diversity of both plant and animal species, and rare communities. Approximately 400 plant species have been identified along the San Juan River and its tributaries. This includes five sensitive and rare species, the Western hophornbeam, Alcove rock daisy, Howel scorpion weed, Bluff phacelia, and Cooper Canyon milkvetch, as well as one federally listed threatened species, Navajo sedge, which is found only in hanging gardens. The San Juan River also provides an abundance of current and potential habitat for multiple species of fish and wildlife, as noted above, and offers educational / scientific opportunities to study unique desert botany and zoology in a complete ecosystem.

- **Hanging Gardens –** Hanging gardens are unique herbaceous communities that develop under certain geologic and climatic features in arid to semi-arid climates. They are fed by groundwater aquifers in either fine-grained sandstones or in limestones, and exist on cliff faces or in undercut alcoves. Hanging garden vegetation is structurally and floristically distinct from other spring-supported vegetation in the American southwest.

Geologic (Segments 3 and 5): The deeply incised San Juan canyon cuts across the broad anticlinal structure of the Monument upwarp, making it a textbook example of a transverse canyon. Whether the San Juan canyon was formed through geomorphic processes of antecedence or superposition is the subject of great interest and debate among geologists. The San Juan River is famous for its sand waves or antidunes (see Recreation above), and Algal Banks.

- **Algal Banks** – Algal bioherms or mounds occur in the Desert Creek and Ismay intervals of the Pennsylvanian Paradox Formation. These mounds consist of accumulations of green leafy algae, which resemble beds of fossilized corn flakes. Similar algal mounds are major producers of oil and gas in the Paradox Basin of Utah, Colorado, and Arizona. Algal banks exposed along the San Juan River afford geologists a rare opportunity to study the reservoir-facies characteristics and geometry of these stratigraphic oil traps in outcrops. They provide a production-scale analogue for reservoir modeling, and design and implementation of enhanced hydrocarbon (oil/gas) recovery programs in the Paradox Basin.

ARCH CANYON –
Perennial stream in some areas, Intermittent in others

Segment Description	Length In BLM River Miles	Outstandingly Remarkable Values ORVs	Tentative Classification (See Appendix)
Manti-LaSal National Forest Boundary to ½ mile west of its confluence with Comb Wash	6.9 miles	• Fish • Recreation • Wildlife	Recreational

Attachment 2: ORVs and Tentative Classification of Individual Eligible Wild and Scenic River(s)/Segments, Monticello FO

		• Cultural • Ecological	
Description of Outstandingly Remarkable Values (ORVs)			
Fish: Arch Canyon contains aquatic habitat for the Bluehead sucker, Flannelmouth sucker, and Speckled dace. The first two species are listed as Species of Special Concern (any wildlife species or subspecies that has experienced a substantial decrease in population, distribution and/or habitat availability) for the state of Utah. **Recreation:** The flowing water in Arch Canyon with its red rock walls, arches, pinnacles, rock outcrops, alcoves and numerous prehistoric ruins and rock art, provides a popular recreation destination. The VRM Class II with Class A scenic quality, the steep walled, meandering canyon with a variety of vegetation types attract 3,000 – 5,000 visitors annually for horseback riding, hiking, primitive camping, and OHV use. Arch Canyon is a popular destination site with commercial, educational, research groups, and private parties. **Wildlife:** Arch Canyon provides habitat to several wildlife species. There is designated critical habitat for Mexican spotted owls in the upper reaches of the canyon. Surveys have determined that owls use this canyon for forage while nesting in nearby canyons. There is also potential habitat for the Southwestern willow flycatcher. **Cultural:** The cultural resources located here are well preserved prehistoric buildings clustered in sites occupied for hundreds of years. During some periods of that occupation, buildings strongly resembling architecture in Chaco Canyon were built. The canyon also contains rock art, with both pictographs and petroglyphs found here. Sites are almost always located well above the stream bottom because of the flash floods that occur in Arch Canyon. They are of significance because of the scientific information they contain, the fact that they are well preserved, and because of their interest to the recreating public. **Ecological:** Unique, rich riparian vegetation exists in Arch Canyon. Unique for this area are grasses and shrubs, usually common to the mid-western United States, which appear along the creek. Arch Canyon is important habitat for fish and wildlife species.			

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Attachment 3. Wild, Scenic and Recreational Classification Worksheets for Eligible River(s)/Segments (Condensed)

COLORADO RIVER, SEGMENT # 1						
Attribute	**Wild**	**Y N**	**Scenic**	**Y N**	**Recreational**	**Y N**
Water Resource Development	Free of Impoundment	Y	Free of Impoundment		Some existing impoundment or diversion.	
Shoreline Development	Essentially primitive. Little or no evidence of human activity.	N	Largely primitive and undeveloped.	N	Some development. Substantial evidence of human activity. [Potash facility in area]	Y
Accessibility	Generally inaccessible except by trail.	N	Accessible in places by road.		Readily accessible by road or railroad.	Y
Water Quality	Meets or exceeds Federal criteria or federally approved State standards	Y	Water quality sufficient to maintain outstandingly remarkable values.		Water quality sufficient to maintain outstandingly remarkable values.	
Conclusion					**Recreational**	

COLORADO RIVER, SEGMENT # 2						
Attribute	**Wild**	**Y N**	**Scenic**	**Y N**	**Recreational**	**Y N**
Water Resource Development	Free of Impoundment	Y	Free of Impoundment		Some existing impoundment or diversion.	
Shoreline Development	Essentially primitive. Little or no evidence of human activity.	Y	Largely primitive and undeveloped.		Some development. Substantial evidence of human activity.	
Accessibility	Generally inaccessible except by trail.	N	Accessible in places by road. *[to river area]*	Y	Readily accessible by road or railroad.	
Water Quality	Meets or exceeds Federal criteria or federally approved State standards	Y	Water quality sufficient to maintain outstandingly remarkable values.		Water quality sufficient to maintain outstandingly remarkable values.	
Conclusion			**Scenic**			

COLORADO RIVER, SEGMENT # 3						
Attribute	**Wild**	**Y N**	**Scenic**	**Y N**	**Recreational**	**Y N**
Water Resource Development	Free of Impoundment	Y	Free of Impoundment		Some existing impoundment or diversion.	
Shoreline Development	Essentially primitive. Little or no evidence of human activity.	Y	Largely primitive and undeveloped.		Some development. Substantial evidence of human activity.	
Accessibility	Generally inaccessible except by trail.	Y	Accessible in places by road.		Readily accessible by road or railroad.	
Water Quality	Meets or exceeds	Y	Water quality sufficient		Water quality sufficient	

Attachment 3. Wild, Scenic and Recreational Classification Worksheets for Eligible River(s)/Segments (Condensed)

	Federal criteria or federally approved State standards		to maintain outstandingly remarkable values.		to maintain outstandingly remarkable values.	
Conclusion	**Wild**					
INDIAN CREEK						
Attribute	**Wild**	**Y N**	**Scenic**	**Y N**	**Recreational**	**Y N**
Water Resource Development	Free of Impoundment	N	Free of Impoundment	N	Some existing impoundment or diversion. *[diversion present]*	Y
Shoreline Development	Essentially primitive. Little or no evidence of human activity.	N	Largely primitive and undeveloped.	N	Some development. Substantial evidence of human activity. *[Nat'l Historic Site, camping]*	Y
Accessibility	Generally inaccessible except by trail.	N	Accessible in places by road.		Readily accessible by road or railroad. [State Highway 211]	Y
Water Quality	Meets or exceeds Federal criteria or federally approved State standards	N	Water quality sufficient to maintain outstandingly remarkable values.	Y	Water quality sufficient to maintain outstandingly remarkable values. *[303d – pH stressor]*	Y
Conclusion					**Recreational**	
FABLE VALLEY						
Attribute	**Wild**	**Y N**	**Scenic**	**Y N**	**Recreational**	**Y N**
Water Resource Development	Free of Impoundment	Y	Free of Impoundment		Some existing impoundment or diversion.	
Shoreline Development	Essentially primitive. Little or no evidence of human activity.	Y	Largely primitive and undeveloped.		Some development. Substantial evidence of human activity.	
Accessibility	Generally inaccessible except by trail.	N	Accessible in places by road. *[jeep route present in lower area]*	Y	Readily accessible by road or railroad.	
Water Quality	Meets or exceeds Federal criteria or federally approved State standards	Y	Water quality sufficient to maintain outstandingly remarkable values.		Water quality sufficient to maintain outstandingly remarkable values.	
Conclusion			**Scenic**			

Attachment 3. Wild, Scenic and Recreational Classification Worksheets for Eligible River(s)/Segments (Condensed)

DARK CANYON						
Attribute	**Wild**	**Y N**	**Scenic**	**Y N**	**Recreational**	**Y N**
Water Resource Development	Free of Impoundment	Y	Free of Impoundment		Some existing impoundment or diversion.	
Shoreline Development	Essentially primitive. Little or no evidence of human activity.	Y	Largely primitive and undeveloped.		Some development. Substantial evidence of human activity.	
Accessibility	Generally inaccessible except by trail.	Y	Accessible in places by road.		Readily accessible by road or railroad.	
Water Quality	Meets or exceeds Federal criteria or federally approved State standards	Y	Water quality sufficient to maintain outstandingly remarkable values.		Water quality sufficient to maintain outstandingly remarkable values.	
Conclusion	**Wild**					

SAN JUAN RIVER # 1						
Attribute	**Wild**	**Y N**	**Scenic**	**Y N**	**Recreational**	**Y N**
Water Resource Development	Free of Impoundment	N	Free of Impoundment	N	Some existing impoundment or diversion. *[diversions]*	Y
Shoreline Development	Essentially primitive. Little or no evidence of human activity.	N	Largely primitive and undeveloped.	N	Some development. Substantial evidence of human activity. *[development in river area]*	Y
Accessibility	Generally inaccessible except by trail.	N	Accessible in places by road.		Readily accessible by road or railroad.	Y
Water Quality	Meets or exceeds Federal criteria or federally approved State standards	Y	Water quality sufficient to maintain outstandingly remarkable values.		Water quality sufficient to maintain outstandingly remarkable values.	
Conclusion					**Recreational**	

SAN JUAN RIVER # 2						
Attribute	**Wild**	**Y N**	**Scenic**	**Y N**	**Recreational**	**Y N**
Water Resource Development	Free of Impoundment	N	Free of Impoundment	N	Some existing impoundment or diversion. *[diversions present]*	Y
Shoreline Development	Essentially primitive. Little or no evidence of	N	Largely primitive and undeveloped.	N	Some development. Substantial evidence of	Y

Attachment 3. Wild, Scenic and Recreational Classification Worksheets for Eligible River(s)/Segments (Condensed)

	human activity.				human activity. *[Camping, boat ramp, Sand Island*	
Accessibility	Generally inaccessible except by trail.	N	Accessible in places by road.		Readily accessible by road or railroad.	Y
Water Quality	Meets or exceeds Federal criteria or federally approved State standards	Y	Water quality sufficient to maintain outstandingly remarkable values.		Water quality sufficient to maintain outstandingly remarkable values.	
Conclusion					**Recreational**	
SAN JUAN RIVER # 3						
Attribute	**Wild**	**Y N**	**Scenic**	**Y N**	**Recreational**	**Y N**
Water Resource Development	Free of Impoundment	Y	Free of Impoundment		Some existing impoundment or diversion.	
Shoreline Development	Essentially primitive. Little or no evidence of human activity.	Y	Largely primitive and undeveloped.		Some development. Substantial evidence of human activity.	
Accessibility	Generally inaccessible except by trail.	Y	Accessible in places by road.		Readily accessible by road or railroad.	
Water Quality	Meets or exceeds Federal criteria or federally approved State standards	Y	Water quality sufficient to maintain outstandingly remarkable values.		Water quality sufficient to maintain outstandingly remarkable values.	
Conclusion	**Wild**					
SAN JUAN RIVER # 4						
Attribute	**Wild**	**Y N**	**Scenic**	**Y N**	**Recreational**	**Y N**
Water Resource Development	Free of Impoundment	Y	Free of Impoundment		Some existing impoundment or diversion.	
Shoreline Development	Essentially primitive. Little or no evidence of human activity.	N	Largely primitive and undeveloped.	N	Some development. Substantial evidence of human activity. *[ranch-horses, activities]*	Y
Accessibility	Generally inaccessible except by trail.	N	Accessible in places by road.		Readily accessible by road or railroad. [*road along shoreline]*	Y
Water Quality	Meets or exceeds Federal criteria or federally approved State standards	Y	Water quality sufficient to maintain outstandingly remarkable values.		Water quality sufficient to maintain outstandingly remarkable values.	
Conclusion					**Recreational**	

Attachment 3. Wild, Scenic and Recreational Classification Worksheets for Eligible River(s)/Segments (Condensed)

SAN JUAN RIVER # 5						
Attribute	**Wild**	**Y N**	**Scenic**	**Y N**	**Recreational**	**Y N**
Water Resource Development	Free of Impoundment	Y	Free of Impoundment		Some existing impoundment or diversion.	
Shoreline Development	Essentially primitive. Little or no evidence of human activity.	Y	Largely primitive and undeveloped.		Some development. Substantial evidence of human activity.	
Accessibility	Generally inaccessible except by trail.	Y	Accessible in places by road.		Readily accessible by road or railroad.	
Water Quality	Meets or exceeds Federal criteria or federally approved State standards	Y	Water quality sufficient to maintain outstandingly remarkable values.		Water quality sufficient to maintain outstandingly remarkable values.	
Conclusion	**Wild**					

ARCH CANYON						
Attribute	**Wild**	**Y N**	**Scenic**	**Y N**	**Recreational**	**Y N**
Water Resource Development	Free of Impoundment	N	Free of Impoundment	N	Some existing impoundment or diversion. *[historic irrigation dike]*	Y
Shoreline Development	Essentially primitive. Little or no evidence of human activity.	N	Largely primitive and undeveloped.	N	Some development. Substantial evidence of human activity. *[cultural fenced site]*	Y
Accessibility	Generally inaccessible except by trail.	N	Accessible in places by road.		Readily accessible by road or railroad. *[route along stream bed]*	Y
Water Quality	Meets or exceeds Federal criteria or federally approved State standards	Y	Water quality sufficient to maintain outstandingly remarkable values.		Water quality sufficient to maintain outstandingly remarkable values.	
Conclusion					**Recreational**	

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Attachment 4. Summary of Eligible River/Segments and Their Tentative Classification, Monticello Field Office

River Segment Name	Segment Description and Length in River Miles[1]	Reason for Consideration[2]	Free-Flowing	Outstandingly Remarkable Values (ORVs)	Tentative Classification
Colorado River Segment 1	Northern most MFO boundary on east side of Colorado River (1 mile north of Potash land) south to private land BLMRM: 2.2 miles TRM: 6.2 miles	a, b, d, e	Yes	Scenic Fish Recreation Wildlife Cultural Ecological	Recreational
Colorado River Segment 2	State lands near River Mile 44 to approx. River Mile 38.5 BLMRM: 5.5 miles TRM: 6.8 miles	a, b, d, e	Yes	Scenic Fish Recreation Wildlife Cultural Ecological	Scenic
Colorado River Segment 3	From approximately River Mile 37.5 at State land to boundary of Canyonlands NP near River Mile 31 BLMRM: 6.5 miles TRM: 6.5 miles	a, b, d, e	Yes	Scenic Fish Recreation Wildlife Cultural Ecological	Scenic
Indian Creek	Forest boundary to Donnelly Canyon BLMRM: 4.8 miles	e, f	Yes	Cultural	Recreational
Fable Valley	Source to mouth at Gypsum Creek BLMRM: 6.8 miles TRM: 6.8miles	e, f	Yes	Wildlife Ecological	Scenic
Dark Canyon	Youngs Canyon to GCNRA BLMRM: 6.4 miles TRM: 13.6 miles	b, e, f	Yes	Scenic Recreation Wildlife	Wild
San Juan River Segment 1 North side – MFO, portions	W. Montezuma Creek to private land just before "avulsed"	a, b, e	Yes	Fish Wildlife	Recreational

Attachment 4. Summary of Eligible River/Segments and Their Tentative Classification, Monticello Field Office

River Segment Name	Segment Description and Length in River Miles[1]	Reason for Consideration[2]	Free-Flowing	Outstandingly Remarkable Values (ORVs)	Tentative Classification
are within San Juan River SRMA; South side – Navajo Nation.	parcel of Navajo Nation land at St. Christopher's Mission BLMRM: 8.5 miles TRM: 15.3 miles			Historic Cultural	
San Juan River Segment 2 North side – MFO, portions are within San Juan River SRMA; South side – Navajo Nation	West of "accreted" land at town of Bluff, UT at River Mile (minus) -1 to River Mile 9 BLMRM: 10 miles TRM: 9.5 miles	a, b, e	Yes	Fish Recreation Wildlife Historic Cultural Ecological	Recreational
San Juan River Segment 3 North side – MFO, San Juan River SRMA; South side – Navajo Nation.	River Mile 9 to River Mile 23 above Mexican Hat formation BLMRM: 13.3 miles TRM: 13.3 miles	a, b, d, e	Yes	Scenic Fish Recreation Geology Wildlife Ecological	Wild
San Juan River Segment 4 North side – MFO; South side – Navajo Nation.	River Mile 23 to River Mile 28 BLMRM: 4.2 miles TRM: 5.3 miles	a, b, d, e	Yes	Scenic Fish Recreation Wildlife Ecological	Recreational
San Juan River Segment 5 North side – MFO, San Juan River SRMA & Cedar Mesa ACEC; South side–Navajo Nation.	Mile 28 to Glen Canyon NRA River mile 45 BLMRM: 17.3 miles TRM: 17.3 miles	a, b, d, e	Yes	Scenic Fish Recreation Geologic Wildlife Ecological	Wild
Arch Canyon	Forest boundary to ½ mile west of its confluence with Comb Wash	d, e, f	Yes	Fish Recreation Wildlife	Recreational

Attachment 4. Summary of Eligible River/Segments and Their Tentative Classification, Monticello Field Office

River Segment Name	Segment Description and Length in River Miles[1]	Reason for Consideration[2]	Free-Flowing	Outstandingly Remarkable Values (ORVs)	Tentative Classification
	BLMRM: 6.9 miles TRM: 7.7 miles			Cultural Ecological	

[1] BLMRM= BLM River Miles; TRM= Total River Miles

[2] Reasons for Consideration:

a. Nationwide Rivers Inventory (NRI) list, NPS 1995, (Utah modified Oct 5, 2001)

b. American Rivers Outstanding List, May 1991

c. 1970 USDA/USDI list, and 1972 list

d. A Citizen's Proposal to Protect the Wild Rivers of Utah, 1995 (Utah River Council)

e. Identified in public scoping

f. Identified by Federal Agencies, State of Utah, Indian Tribes, local governments, and professional specialists within the BLM Monticello Field Office

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Attachment 5. Suitability Considerations by Eligible River Segment

Suitability Considerations	Consideration Applied to Eligible River
Colorado River – 3 Segments	
Characteristics which would or would not make it suitable	The Colorado River possesses outstandingly remarkable scenic, fish, recreation, wildlife, cultural and ecological values. Scenically the Colorado River is a desert waterway with ever changing vistas of grand proportions. The Colorado River provides habitat for species of fish found nowhere else in the world. Water related recreational activities, such as rafting calm water to Class I-IV rapids, are nationally recognizable. The river is a flyway for neo-tropical bird migrations, and important habitat for wildlife. The cultural and historical values of the river range from prehistoric, including Ancestral Puebloan sites, to recent historical sites. The river supports an extensive ecological system within the desert environment.
Land ownership status and current use of the area.	Ownership along the Monticello Field Office-administered east/south side of the river portion of the river is approximately 73%; the remaining is in state (SITLA-19%), and private (8%) ownership (Moab FO administers the west/north side). - Recreational water related activities, boating, rafting, fishing, sight-seeing. - Available for grazing. - OHV use limited to designated roads and trails.
Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated.	- The Colorado River is navigable, thus the water is controlled by the State of Utah. -[The privately owned Potash facility is located on the west side within the Moab FO segment and opposite the 2.2 mile Monticello FO segment; leases are issued by the State of Utah]. - Interstate [water] compacts are not affected by WSR [WSRA, Sec 13: Jurisdiction of the States]. No water allotment needs are anticipated to provide protection of the ORVs. - There are no withdrawals in the area on the Monticello administered side of the river; however, Moab has withdrawals from mining on the side they administer. - On the lower 12 mile segment mineral leasing is currently Category 1, surface use with standard conditions apply for approximately the first 4 miles of land adjacent to the river. Below approximately river mile 40 to the Canyonlands NP boundary, mineral leasing is Category 2, special conditions apply. - Recreation: no difference if designated or not; NPS issues permits on Colorado R; Moab FO patrols these segments. - Geology: is millions of years old and will not change except for natural weathering / erosion. - Riparian / Vegetative / Wildlife: enhancement or protective mgmt are available under law/policy. - Grazing: most occurs on mesas outside ¼ mile; however, some within ¼ mile at river edge. - SITLA – although the Monticello FO RMP management decisions will not be binding upon trust lands, development of trust land can be drastically affected by management prescriptions applied to adjacent public lands. - WSAs/Wilderness: no WSAs are located within the Colorado River area of the Monticello FO.

Attachment 5. Suitability Considerations by Eligible River Segment

Suitability Considerations	Consideration Applied to Eligible River
Interest of federal, public, state, tribal, local, or other public entity in designation of non-designation, including administration sharing.	Interest/Support: high from national river groups, NPS, some local residents, and environmental organizations; American Rivers, Utah River Council, and NRI listing. Participation: other federal agencies are actively participating in WSR process, and currently (NPS and BLM Moab FO) partner with administration of the river; NPS/Canyonlands NP carries the costs associated with recreation permit process. Interest/Support: low or negative interests or support from some of the local population and from the San Juan County government. Participation: San Juan County notes they do not have the staff or financial ability to participate, share, nor help administer or manage values on a WSR. … San Juan County will not share in either the administration or the cost of WSR designation of the Colorado River. … As stated by San Juan County - The State or its political subdivisions will not participate in the preservation and administration of lands or rivers which are located on federal lands. NPS: the lower portion of the Monticello FO Colorado River eligible segment, as it flows into Canyonlands NP, has the same tentative classification (Wild) as that determined by NPS for the segment within Canyonlands National Park. The (Wild) classification has been changed to Scenic due to the presence of motorized boating on the river. USFS: no eligible river/segments on Colorado River. Other BLM Areas: eligibility determination and tentative classification levels for the Colorado River were determined to be the same (Scenic) by both the BLM Monticello FO (south / east side) and the BLM Moab FO (north / west side).
Manageability of the river if designated, and other means of protecting values.	BLM uses management prescriptions and applicable laws / policies to protect the river and its ORVs. Management prescriptions were included in the 1991 RMP for the Colorado River, which was found eligible in that earlier evaluation process. Currently, recreational use is under a permit system administered by the National Park Service (Canyonlands NP). There are no other current management / protection overlays in the Monticello FO Colorado River area. - SITLA - The presence of trust lands along the WSR corridor could encumber the manageability of the WSR system by over segmentation or by development that is inconsistent with the purpose of the WSRA.
The estimated costs of administering the river, including costs for acquiring lands.	There should be no acquisition costs involved in the potential designation of the Colorado River as a WSR. Administration costs would include staff / time to develop and complete study and management reports.
The extent to which administration costs will be shared by local and state governments.	San Juan County: "Considering the budget status of the State and County, it seems highly unlikely that either would put much priority in managing and/or protecting the non-federal lands in the area".
Indian Creek	
Characteristics which would or would not make it suitable	Indian Creek possesses a cultural value. Indian Creek is a remarkable example of the interface between two prehistoric cultural groups, the Pre Puebloan and the Fremont with Newspaper Rock petroglyph panel listed on the National Register of Historic Places.
Land ownership status and current	Ownership along Indian Creek is 96% BLM with a very small (.2 mile)

Attachment 5. Suitability Considerations by Eligible River Segment

Suitability Considerations	Consideration Applied to Eligible River
use of the area.	4% of state land. - Newspaper Rock Interpretive Site lies within ¼ mile of Indian Creek. - There is a parking lot with toilet at the Newspaper Rock site on the opposite side of the road from Indian Creek, and a primitive campground on the creek side of the road. (Change to this campground is possible in the RMP based on the Indian Creek EA, due to safety issues (flooding). - Scenic Highway 211 runs next to the creek area the length of the eligible segment within ¼ mile of sections of the stream. - The Nature Conservancy owns the Dugout Ranch north of this eligible segment.
Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated.	- There is grazing in the area. - This is a popular corridor for rock climbers to access climbing routes further north. This is a heavily traveled area by visitors to the Needles District of Canyonlands National Park; Rte 211 is the only way into and out of the park. Needles reported visitation of 44,333 vehicles in 2003, and 44,400 through the end of July 2004. Many of these visitors stop at the Newspaper Rock Interpretive Site. - Mineral leasing is Category 2, surface use with special conditions. - SITLA – although the MFO RMP management decisions will not be binding upon trust lands, development of trust land can be drastically affected by management prescriptions applied to adjacent public lands. - Private landowners immediately below this segment use water for domestic and irrigation purposes. The potential to expand this use is possible, per San Juan County.
Interest of federal, public, state, tribal, local, or other public entity in designation of non-designation, including administration sharing.	There is no county support for designation. There is support from the environmental community for determinations of suitability. San Juan County does not feel that the residents support WSR designation for Indian Creek. San Juan County will not share in either the administration or the cost of WSR designation of Indian Creek.
Manageability of the river if designated, and other means of protecting values.	Currently the Indian Creek eligible WSR is within the Shay Canyon ACEC and Canyon Basins SRMA. BLM uses management prescriptions and applicable laws / policies to protect the stream and its ORVs. If designated, other means of management for protecting values will be extrapolated from the impact analysis for the Monticello RMP/EIS. USFS – Indian Creek on Forest Service land was determined not eligible.
The estimated costs of administering the river, including costs for acquiring lands.	There is no private land to acquire. Administration costs would include staff / time to develop and complete study and management reports.
The extent to which administration costs will be shared by local and state governments.	San Juan County stated that considering the budget status of the State and County, it seems highly unlikely that either would put any priority in managing and/or protecting the non-federal lands in the area.
Fable Valley	
Characteristics which would or would not make it suitable	Fable Valley possesses wildlife and ecological values. Fable Valley is a narrow, discontinuous riparian corridor that provides habitat for wildlife, two threatened and endangered (T&E) species, and is on the migration route for neo-tropical birds.

Attachment 5. Suitability Considerations by Eligible River Segment

Suitability Considerations	Consideration Applied to Eligible River
Land ownership status and current use of the area.	Ownership within the stream corridor is 100% BLM land. There is an old jeep trail that runs along the lower portion the valley near the stream.
Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated.	Mineral leasing is Category 4, closed to leasing and mineral entry. There is livestock trailing and emergency grazing allowed during drought or severe winters.
Interest of federal, public, state, tribal, local, or other public entity in designation of non-designation, including administration sharing.	There is no county support for designation. There is support from the environmental community for determinations of suitability. San Juan County will not share in either the administration or the cost of WSR designation of Indian Creek.
Manageability of the river if designated, and other means of protecting values.	BLM uses management prescriptions and applicable laws / policies to protect the river and its ORVs. If designated, other means of management for protecting values will be extrapolated from the impact analysis for the Monticello RMP/EIS. Fable Valley lies within Dark Canyon WSA, partially within Dark Canyon ACEC, and within the Canyon Basins SRMA. Fable Valley is managed according to the Interim Management Policy for Lands Under Wilderness Review (IMP), which provides for primitive recreation.
The estimated costs of administering the river, including costs for acquiring lands.	There is no private land to acquire. Administration costs would include staff / time to develop and complete study and management reports.
The extent to which administration costs will be shared by local and state governments.	San Juan County stated that considering the budget status of the State and County, it seems highly unlikely that either would put much priority in managing and/or protecting the non-federal lands in the area.
Dark Canyon	
Characteristics which would or would not make it suitable	Dark Canyon possesses scenic, recreation and wildlife values. Dark Canyon is an internationally recognized area known for rugged terrain, primitive recreation, and habitat supporting a broad array of wildlife.
Land ownership status and current use of the area.	Ownership within the stream corridor is 100% BLM land.
Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated.	Mineral leasing is Category 4, closed to leasing and mineral entry.
Interest of federal, public, state, tribal, local, or other public entity in designation of non-designation, including administration sharing.	Interest/Support is high from national river groups, other agencies, some local residents, and environmental organizations. San Juan County has expressed support for Dark Canyon as a potential WSR.
Manageability of the river if designated, and other means of protecting values.	BLM uses management prescriptions and applicable laws / policies to protect the river and its ORVs. If designated, other means of management for protecting values will be extrapolated from the impact analysis for the Monticello RMP/EIS. Dark Canyon lies within Dark Canyon WSA, partially within Dark Canyon ACEC, and within the Canyon Basins SRMA. Dark Canyon is managed according to the Interim Management Policy for Lands Under Wilderness Review (IMP), which provides for primitive recreation.

Attachment 5. Suitability Considerations by Eligible River Segment

Suitability Considerations	Consideration Applied to Eligible River
The estimated costs of administering the river, including costs for acquiring lands.	There is no private land to acquire. Administration costs would include staff / time to develop and complete study and management reports.
The extent to which administration costs will be shared by local and state governments.	San Juan County stated that considering the budget status of the State and County, it seems highly unlikely that either would put any priority in managing and/or protecting the non-federal lands in the area.
San Juan River – 5 segments	
Characteristics which would or would not make it suitable	The San Juan River possesses scenic, fish, recreation, geology, wildlife, cultural / historic, and ecological values, dependent on the segment. The San Juan River is known for its recreational boating draw, both pre-historical and historical sites, abundant river wildlife and endemic fish populations, and unique geologic formations. The corridor provides an ecological / riparian niche in a desert environment.
Land ownership status and current use of the area.	The north side of the San Juan River is predominantly on BLM federally owned land with BLM ownership on this side of the river corridor approximately 88%, and private ownership slightly less than 12%, with .02% on the north side in Navajo Nation ownership. The entire south side of the San Juan River, from the Colorado state line to the outflow from Lake Powell at the Arizona state line, is owned and under the jurisdiction of the Navajo Nation. There are roads in portions of the San Juan River area, access to the river for irrigation of agricultural fields at various points, the towns of Bluff and Mexican Hat and State Highway 163 are north of the river. State Highway 191 bridge crosses the San Juan below the BLM Sand Island Campground and Boat Launch area; State highway 163 crosses the river at Mexican Hat, and there are dirt roads accessing the river area at approximately river mile 6 near River House Ruin, a well known archeological site for river parties' visitation. The State highway #163 parallels the river but not within sight of the river, and there are dirt roads in the lower segments around the town of Mexican Hat. This is a well used recreational segment of the San Juan River with high levels of both private and commercial boating use on the river. There is development outside the river corridor, including grazing, gravel facilities, and oil and gas development, and a recreational horse facility within the river corridor and a dirt road leading to it along the river's edge, as well as the Town of Mexican Hat.
Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated.	The primary issue with possible designation is the ownership by the Navajo Nation of the south side of the river. The Navajo Nation has expressed concern about and interest in their nation's future water development projects. There are Federal Energy Regulatory Commission (FERC) withdrawals along the north side (BLM) of the San Juan River. These withdrawals were made under Power Site Withdrawal 122, and subject to Section 24 of the Federal Power Act. Withdrawals were upon lands that could be required for power development purposes. Lands of interest were reserved to the US government for public purposes and were to be withdrawn and withheld from private appropriation. They were to be dedicated for some public purpose. In this case, for development of water power sites. The lands withdrawn could be covered by water if dams were constructed on the San Juan River. In 1957, the

Attachment 5. Suitability Considerations by Eligible River Segment

Suitability Considerations	Consideration Applied to Eligible River
	withdrawals were partially revoked to allow for mineral entry. Mineral leasing categories vary depending on location along the river. Mineral values such as sand, gravel, oil and gas are extremely important to San Juan County and the local economy. There are presently oil wells along portions of the San Juan River. San Juan County feels that further development is highly probable, and that oil and gas development as well as other mineral extraction activities is incompatible with WSR designation.
Interest of federal, public, state, tribal, local, or other public entity in designation of non-designation, including administration sharing.	Interest/Support is high from national River groups, other agencies, some local residents, and environmental organizations. San Juan County does not support WSR designation on the San Juan River.
Manageability of the river if designated, and other means of protecting values.	BLM uses management prescriptions and applicable laws / policies to protect the river and its ORVs. Management prescriptions were included in the 1991 RMP for the San Juan River, which was found eligible in that earlier evaluation process. The San Juan River is managed as a Special Recreation Management Area. Glen Canyon National Recreation Area participates with BLM in the management of the lower section of the San Juan River.
The estimated costs of administering the river, including costs for acquiring lands.	Costs of land acquisition is unknown at this time, or whether there is any need to acquire land. Administration costs would include staff / time to develop and complete study and management reports.
The extent to which administration costs will be shared by local and state governments.	San Juan County will not share in either the administration or the cost of WSR designation of the SJR.
Arch Canyon	
Characteristics which would or would not make it suitable	Arch Canyon possesses fish, recreation, wildlife, cultural and ecological values. Arch Canyon offers a unique combination of riparian areas supporting fish and wildlife in a desert environment with cultural sites and recreational opportunities.
Land ownership status and current use of the area.	Ownership within the stream corridor is 90% BLM with 10% state lands. A route used for off-highway vehicle OHV motorized travel is present the length of the stream / banks of Arch Canyon and crosses the stream 60 times in 8 miles.
Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated.	Mineral leasing is Category 2 with surface uses limited by special conditions. The area has designated critical habitat for Mexican spotted owl, and potential habitat for the Southwestern willow flycatcher, both T & E species. There is a fenced cultural site approximately ½ mile from the eastern boundary that has frequent visitation.
Interest of federal, public, state, tribal, local, or other public entity in designation of non-designation, including administration sharing.	Interest/Support is high from national River groups, other agencies, some local residents, and environmental organizations. San Juan County does not support the possible designation of Arch Canyon.
Manageability of the river if designated, and other means of	BLM uses management prescriptions and applicable laws / policies to protect the river and its ORVs. Arch Canyon is within Cedar Mesa

Attachment 5. Suitability Considerations by Eligible River Segment

Suitability Considerations	Consideration Applied to Eligible River
protecting values.	ACEC and Grand Gulch SRMA. Management for the protection of outstandingly remarkable values could conflict with the OHV route. Although OHV use in this area is considered recreational, the route does not contribute to the outstandingly remarkable recreational value per BLM UTSO and BLM WO guidance. Arch Canyon was determined eligible on the Manti-LaSal National Forest land with a tentative classification of Scenic. The route that is present and in use on Forest Service land is closed to motorized vehicle use within the national forest at the FS/BLM boundary where it becomes a foot trail.
The estimated costs of administering the river, including costs for acquiring lands.	There is no private land to acquire. Administration costs would include staff / time to develop and complete study and management reports.
The extent to which administration costs will be shared by local and state governments.	San Juan County stated that considering the budget status of the State and County, it seems highly unlikely that either would put much priority in managing and/or protecting the non-federal lands in the area.

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APPENDIX I. STANDARD OPERATING PROCEDURES

I.1 STANDARD OPERATING PROCEDURES[1]

No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of two (2) inches deep, the soil shall be deemed too wet to adequately support construction equipment.

Construction sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.

The holder shall remove only the minimum amount of vegetation necessary for the construction of structures and facilities. Topsoil shall be conserved during excavation and reused as cover on disturbed areas to facilitate regrowth of vegetation.

The holder shall restore drainages, to the greatest extent possible, to the original bank configuration, stream bottom width, and channel gradient. Loose soil, fill, and culverts shall be removed from drainage channels.

The holder shall protect existing telephone, telegraph, and transmission lines, roads, trails, fences, ditches, and like improvements during construction, operation, maintenance, and termination of the system. Holder shall not obstruct any road or trail without the prior approval of the authorized officer. Damage caused by holder to utilities and improvements shall be promptly repaired by holder to a condition which is satisfactory to the authorized officer.

In areas where grading is necessary, the holder shall recontour the disturbed area and obliterate all earthwork by removing embankments, backfilling excavation, and grading to re-establish the approximate original contours of the land on the right-of-way.

After site restoration, holder shall construct waterbars along graded areas of the right-of-way as required by the authorized officers.

The holder shall protect all survey monuments found within the right-of-way. Survey monuments include, but are not limited to, General Land Office and Bureau of Land Management Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the holder shall immediately report the incident, in writing, to the authorized officer and the respective installing authority if known. Where General Land Office or Bureau of Land Management right-of-way monuments or references are obliterated during operations, the holder shall secure the services of a registered land surveyor or a Bureau cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The holder shall record such survey in the appropriate county and send a copy to the authorized

[1] Please note that this list is not inclusive of all BLM SOPs.

officer. If the Bureau cadastral surveyors or other Federal surveyors are used to restore the disturbed survey monument, the holder shall be responsible for the survey cost.

Permittees may not leave unattended personal property on public lands administered by the Bureau of Land Management for a period of more than 48 hours without written permission of the authorized officer, with the exception that vehicles may be parked in designated parking areas for up to 14 consecutive days. Unattended personal property is subject to disposition under the Federal Property and Administrative Services Act of 1949 as amended.

Cans, rubbish, and other trash shall not be discarded, buried, or dumped on public lands or related waters. Wet garbage such as egg shells, orange peels, leftover solid food, bones, melon rinds, etc., must be carried out. Trash cleanup at campsites and day use areas will include all litter or discarded items including small items such as bottle caps and cigarette butts.

Washing or bathing with soap is not permitted in tributary streams, springs or other natural water sources. Dishwater must be strained prior to dispersal. Dishwater and bathwater may not be dumped within 100 feet of streams, springs, or other natural water sources. Only biodegradable soap may be used.

No camping is permitted within 300 feet of a known prehistoric or historic site.

No camping is permitted within 300 feet of a water source other than perennial streams unless prior authorization is received from the authorizing officer.

Personal sanitation and disposal of human waste is not permitted within 200 feet of a water source, trail or campsite. Human waste will be deposited in a cat hole (6inches deep) and covered with soil. Groups of eight or more people are required to dig a trench to accommodate the group size and to consolidate the waste to one area.

All Special Recreation Use Permit holders will abide by National, State and Monticello BLM stipulations.

Acts of Nature present risks which the permit holder assumes. The user is responsible for inspecting and locating campsite and immediate adjoining area for dangerous trees, hanging limbs, possibility of flash flood or wildfire and other hazardous conditions. Permits and permit fees are not guaranteed against such acts of God including inclement weather and difficult trail condition. The use of rock climbing equipment to access archaeological sites is not allowed. Using a safety rope as an aid along a hiking route is permissible.

All riding and pack animals must be fed certified weed-free feed for 48 hours in advance of and for the duration of the trip on public lands.

Riding and pack animals may not be tied for more than one hour to live trees.

Livestock shall not be tied, hobbled, or picketed for more than one hour within 300 feet of a natural water source other than perennial streams.

All animals will be under control en route and in camp to protect wildlife, other livestock, and range forage.

Corrals located on public lands may not be available for public or permittee use. Prior authorization is required for the use of such corrals.

No climbing or rappelling is allowed over petroglyphs.

On climbing and rappelling sites, no permanent protection (bolts or fixed pitons) will be used other than the minimum necessary to rappel.

Camping is permitted and encouraged in well used campsites. Back-packer camping is not allowed within a mile of the San Juan River in either Grand Gulch or Slickhorn Canyon.

NO IN CANYON FIRES (no charcoal fires or fires from wood harvested on site or brought into the canyons) for warming or cooking in all Cedar Mesa Canyons including Grand Gulch.

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BUREAU OF LAND MANAGEMENT—ENERGY AND NON-ENERGY MINERAL POLICY

This statement sets forth BLM policy for the management of energy and non-energy mineral resources (mineral resources) on public lands. It reflects the provisions of five important acts of Congress relating to mineral resources: the Domestic Minerals Program Extension Act of 1953, the Mining and Minerals Policy Act of 1970, the Federal Land Policy and Management Act of 1976, the National Materials and Minerals Policy, Research and Development Act of 1980, and the Energy Policy Act of 2005. This policy represents a commitment by BLM to implement the requirements of these statutes consistent with BLMs other statutory obligations, as follows:

The Domestic Minerals Program Extension Act of 1953 states that each department and agency of the Federal Government charged with responsibilities concerning the discovery, development, production, and acquisition of strategic or critical minerals and metals shall undertake to decrease further, and to eliminate where possible, the dependency of the United States on overseas sources of supply of each such material.

The Mining and Minerals Policy Act of 1970 declares that it is the continuing policy of the Federal Government to foster and encourage private enterprise in the development of a stable domestic minerals industry and the orderly and economic development of domestic mineral resources. This act includes all minerals, including sand and gravel, geothermal, coal, and oil and gas.

The Federal Land Policy and Management Act of 1976 reiterates that the 1970 Mining and Minerals Policy Act shall be implemented and directs that public lands be managed in a manner which recognizes the Nation's need for domestic sources of minerals and other resources.

The National Materials and Minerals Policy, Research and Development Act of 1980 requires the Secretary of the Interior to improve the quality of minerals data in Federal land use decision-making.

The Energy Policy Act of 2005 encourages energy efficiency and conservation; promotes alternative and renewable energy sources; reduces dependence on foreign sources of energy; increases domestic production; modernizes the electrical grid; and encourages the expansion of nuclear energy.

The BLM recognizes that public lands are an important source of the Nation's energy and non-energy mineral resources, some of which are critical and strategic. The BLM is responsible for making public lands available for orderly and efficient development of these resources under principles of Multiple Use Management, and the concept of Sustainable Development as was defined at the World Summit on Sustainable Development in 2002, in Johannesburg, South Africa.

The following principles will guide the BLM in managing mineral resources on public lands:

1. Except for Congressional withdrawals, public lands shall remain open and available for mineral exploration and development unless withdrawal or other administrative actions are clearly justified in the national interest in accordance with the Department of the Interior Land Withdrawal Manual 603 DM 1, and the BLM regulations at 43 CFR 2310. Petitions to the Secretary of the Interior for revocation of land withdrawals for mineral exploration and development will be evaluated through the land use planning process.

2. The BLM endorses the Sustainable Development Plan of Implementation applicable to mineral resources signed by 193 countries, including the United States; in Johannesburg in 2002. This plan encourages Social, Environmental, and Economic considerations before decisions are made on mineral operations. The BLM actively encourages development by private industry of public land mineral resources, and promotes practices and technology that least impact natural and human resources.

3. The BLM will adjudicate and process mineral patent applications, permits, operating plans, mineral exchanges, leases, and other mineral use authorizations for public lands in a manner to prevent unnecessary and undue degradation, and in a timely and efficient manner, and will require financial assurances to provide for reclamation of the land and for other purposes authorized by law. Mine closure and reclamation considerations include alternative forms of use such as for landfills, wind farms, biomass facilities and other industrial uses, to attract partnerships to utilize the existing mine infrastructure for a future economic opportunity.

4. The BLM land use planning and multiple-use management decisions will recognize that, with few exceptions, mineral exploration and development can occur concurrently or sequentially with other resource uses. The least restrictive stipulations that effectively accomplish the resource objectives or uses will be used. The BLM will coordinate with surface owners when the Federal minerals estate under their surface ownership is proposed for development.

5. Land use plans will reflect geological assessments and mineral potential on public lands through existing geology and mineral resource data, and to the extent feasible, through new mineral assessments to determine mineral potential. Partnerships with State Geologists and the U.S. Geological Survey for obtaining existing and new data should be considered.

6. The BLM will work closely with Federal, State and Tribal governments to reduce duplication of effort while processing mineral related permit applications.

7. The BLM will monitor locatable, salable and leasable mineral operations to ensure proper resource recovery and evaluation, production verification, diligence and enforcement of terms and conditions. The BLM will ensure receipt of fair market value for mineral materials, and appropriate royalty rates for leasable commodities unless otherwise provided for by statute.

8. The BLM will continue to develop e-Government solutions that will provide for electronic submission and tracking of applications for exploration and development of mineral resources. The BLM will continue to provide public access to mineral records, including spatial display of all types of authorizations and mineral resource data.

9. The BLM will maintain and enhance the understanding, skills, and abilities of effective professional, technical, and managerial personnel knowledgeable in adjudication, geology, mineral exploration and development.

10. To the extent provided by law, regulation, secretarial order, and written agreement with the Bureau of Indian Affairs, the BLM will apply the above principles to the management of mineral resources and operations on Indian Trust lands in order to comply with its Trust Responsibilities.

Kathleen Clarke
Director

April 21, 2006
Date

APPENDIX K. COMMUNITY PIT INFORMATION

Table K.1. Community Pit Information

Community Pits Existing Prior to the RMP			
Serial Number	**Location**	**Legal Description**	**Acres**
UTU-59997	Buck	T.40S, R.21E. Sec. 27: E ½SE¼NE¼, SW¼SE¼N½SE¼SE¼, S½NE¼SE¼	100.00
U-53838	Bluff	T. 40S, R.22E. Sec. 27: SW¼NW¼ Sec. 28: Lots 1, 2, 3, & 5	153.74
U-53837	Airport	T. 40S, R.21E. Sec. 5: lots 4, 5, & 6, S½NW¼SW¼, SW¼SE¼ Sec. 8: lots 1 & 2, Tract B	224.27
U-53782	Len's Draw	T. 36 S., R. 22 E. Sec. 24: NW¼NE¼, E½NW¼, NE¼SW¼	160.00
U-53755	Gray Ridge	T. 40 S., R. 23 E. Sec. 36: Lots 3, 4, 5, 6, & W½NW¼	256.74
U-52418	Spring Creek	T. 33 S., R. 23 E. Sec. 8: NE¼ Sec. 9: N½NE¼, SW¼NE¼, NW¼	440.00
U-52416	Bluff Bench	T. 40 S., R. 23 E. Sec. 26: SW¼ Sec. 27: Lots 1, 2, 3, NE¼SW¼, SE¼ Sec. 28: Lots 1, 2, 3, & 4 Sec. 34: Lots 1, 2, 3, & 4 N½NE¼ Sec. 35: Lots 3 & 4, N½NW¼	920.00
U-52076	Bucket Canyon	T. 40 S., R. 23 E. Sec. 35: Lots 1, 2, 7, N ½ NE ¼	173.00
U-52074	Brown's Canyon	T. 37 S., R. 23 E. Sec. 18: SW¼SE¼SW¼, S½SW¼SW¼ Sec. 19: NW¼NE¼NW¼, N½NW¼NW¼	60.00
UTU-52711	Recapture	T. 36 S., R. 22 E. Sec. 13: S½NW¼NE¼, SW¼NE¼	60.00
UTU-52033	Mexican Hat	T. 42 S., R. 18 E. Sec. 1: SE¼SW¼SW¼NE¼, SE¼SW¼NE¼W¼NE¼NW¼SE¼, NW¼NW¼SE¼SW¼NW¼SE¼	37.50
TOTAL ACRES			**2,585.25**

Table K.1. Community Pit Information

Community Pits Designated Since RMP			
Serial Number	**Location**	**Legal Description**	**Acres**
U-62423	Blanding	T. 37 S., R. 22 E., Sec. 12: E½NE¼, NE¼SE¼ T. 37 S., R. 23 E., Sec. 6: SW¼SW¼, W½SE¼SW¼ Sec. 7: W½ Sec. 18: NW¼,N½ SW¼, N½SW¼SW¼, NW¼SE¼SW¼	770
U-62425	San Juan River	T. 40 S., R. 22 E., Sec. 25: N½NE¼, NE¼NW¼, NE¼NW¼NW¼ T. 40 S., R. 23 E., Sec. 19: E½SW¼, SE¼, Lots 3-4 Sec. 20: S½S½ Sec. 29: NW¼NW¼, N½NE¼, Lot 7 Sec. 30: N½NE¼NW¼, Lots 1,11,12	1,210
U-62541	San Juan River Foot Bridge	T. 40 S., R. 22 E., Sec. 27: NW¼NE¼, N½NW¼, Lots 6,8,9 Sec. 28: S½NE¼NE¼, S½NW¼NE¼, S½NE¼NW¼	240
U-62550	Zekes Hole	T. 37 S., R. 21 E., Sec. 13: E½NW¼NE¼, Lot 1	60
U-65537	Lime Ridge	T. 41 S., R. 19 E., Sec. 13: All	640
TOTAL ACRES			**2,920**

APPENDIX L. DEVELOPMENT AND TESTING OF THE CULTURAL RESOURCE SITE DENSITY PREDICTIVE MODEL

A model of cultural resource site density was developed as a means of estimating the general densities sites involved in management decisions that involve landscapes. This model was developed following techniques utilized by other researchers in the region for estimating site densities. The goal of the model is to be able to estimate whether large or moderate numbers of sites might be expected within a given area of the landscape. The model is not designed to predict specific site locations (or non- locations). Nor is the goal of the model to determine that certain portions of the landscape may or may not be used in any particular way. The goal is to have a mechanism for assessing relative site densities. The model supplements, but does not replace, the existing knowledge held by FO specialists, who make land use decisions based on site-specific knowledge. Furthermore, it is important to note that the model is not 100% accurate; no archaeological site prediction model can achieve perfect accuracy. For the purposes of assessment it was determined that if the developed model could predict site densities with at least a 70% correct classification rate it would be acceptable for the purposes of the impacts analysis. A 70% correct classification rate can be considered conservative. This rate was obtained in a similar study (Tipps et al. 1988:125), and is higher than the rate achieved in a variety of other studies (see Tipps et al. 1988:125). This rate should be sufficient for the general purposes of this analysis in comparing the *relative* impact of one alternative versus another. Importantly, consistent application of the same model ensures that impacts analysis is replicable and consistent. This document provides detailed information about the development and testing of the model.

L.1 DEVELOPING THE MODEL

The model for predicting relative cultural resource site densities was developed by employing discriminant function analysis of environmental variables to develop a prediction of site density for a given block of land. This technique has been employed in multiple similar studies (see Tipps et al. 1988). Notably, given recent developments in GIS technologies, it was possible to utilize GIS data to produce information on environmental data. The model was developed to predict locations of the most common types of sites in the area, predominantly prehistoric sites, but including historical sites other than linear resources such as roads, railroads, or canals.

Discriminant function analysis is a statistical procedure that utilizes variables to produce linear functions that result in the maximum separation on a statistical basis between two or more groups defined by the user (see Tipps et al. 1988:115-118). Although there are many variations on the statistical procedure, in essence, discriminant function analysis is designed to determine which variables, selected by the user, can be used to separate two or more groups and produce a linear function that can be used to assign new sets of variables into the same groups.

In the case of the cultural resources density prediction model, the goal was to distinguish areas of the landscape on the basis of site density. Groups were defined on the basis of numbers of sites within a given unit of land. A large number of environmental variables were entered into the discriminant function analysis program. The program first determines which variables can be used to account for variation between the groups, eliminating those variables that do not contribute to differences between the groups. Then, the program produces a formula consisting

of coefficients multiplied to relevant variables and added together with a constant. This formula produces a value for each group, and in a given area, the highest value is used to assign a group. In other words, the formula can be used to place new units of land into one of the site density categories on the basis of the variables determined to be relevant.

Following a procedure developed for an area north of the planning area (Tipps et al. 1988), discriminant function analysis was utilized to place blocks of land into "medium" and "high" site density areas. In previous studies, 160-acre quadrats were used as the land unit. This size was selected because previous studies have indicated that it is a viable and useful size for classifying site density (Tipps et al. 1988:118-121). One of the crucial aspects of discriminant function analysis is the choice of original groups -in this case defined site densities -used in the analysis. In previous studies, three groups were defined—quadrats without sites (or low site density), quadrats with sites (medium site density), or quadrats with two or more sites (high site density).

While we attempted to maintain this tripartite distinction, it was determined that there were almost no 160-acre quadrat areas within the planning area with no sites (low site density). Attempts were made to model different definitions of low, medium, and high site density, but these attempts consistently failed to meet the 70% classification success desired for the model. In part, the failure to be able to accurately define site density groups results from high variation in numbers of sites per 160-acre quadrat in the planning area. Study data from previous cultural resource surveys indicated a mean of 6 sites per quadrat, with a standard deviation of nearly 6. In other words, two-thirds of the quadrats have between 1 and 11 sites. In one sense, 1-11 sites could be considered "average" or "medium" site density in the planning area. However, any more than 4 sites in a 160-acre quadrat could be considered to present management challenges that are above average. Because the goals of the model were to provide a management tool and a relative means of comparing alternatives, it was decided that the model could be acceptably used with a definition of "medium" density as one site per 160-acre quadrat and "high" as 2 or more sites per 160-acre quadrat, as with previous studies. The model is designed to distinguish between areas that will have few to minimal cultural resource management issues and areas that will clearly have some, and potentially many, management issues.

The model was developed by applying environmental variables (Table L.1) developed through GIS data to areas that had been previously inventoried for cultural resources. The areas selected for model development were taken from 14 cultural resource inventories ranging in acreage from 85 acres to 1180 acres, and located within the broader Moab and Monticello FO area encompassing environments similar to the entire field office area (Table L.2). Survey dates for these inventories ranged from 1979 to 2005, with the majority inventoried in the late 1980s and 1990s. A total of 101 quadrats were present in these areas and used for the analysis. The variables were selected to include those previously used in similar studies (see Tipps et al. 1988:120-121) as well as other environmental variables (e.g. vegetation types, fauna, etc.) that might potentially be correlated with resources attractive to prehistoric humans and therefore be a potential correlate with the majority of archaeological sites in the area. The SPSS computer program was used to run the discriminant function analysis. Stepwise variable entry (52 maximum steps), with F-to enter (minimum partial F of 3.84), F-to remove (maximum partial F of 2.71), and Rao's V used as the selection criterion to enter variables (minimum of 0) was used following previous studies (Tipps et al. 1988:116).

Table L.1. Environmental Variables used in Developing the Cultural Resources Discriminant Function Model

Variable	Source of Data
Relief-Quadrat relief in meters. Defined as the difference between the maximum and minimum elevations within the quadrat	GIS query
Elevation -Sum of the maximum and minimum elevations in the quadrat divided by 2	GIS query
Distance to River -Distance to the nearest river in kilometers, measured from center of quadrat	GIS query
Distance to Water -Distance to nearest permanent water in kilometers, measured from center of quadrat	GIS query
Quadrat Cover -Percent of quadrat covered by pinyon-juniper vegetation	GIS query
Drainages – Number of drainages in the quadrat	GIS query
Count of springs in quadrat	AGRC Springs Database
Acres of Cottonwood-Willow Community in quadrat	vgripn_new
Acres of Tamarisk Community in quadrat	vgripn_new
Acres of Box Elder Community in quadrat	vgripn_new
Acres of other lotic ecosystems in quadrat	vgripn_new
Acres of sagebrush in quadrat	Utah GAP Vegetation
Acres of grassland in quadrat	Utah GAP Vegetation
Acres of desert scrubland in quadrat	Utah GAP Vegetation
Acres of oak in quadrat	Utah GAP Vegetation
Acres of aspen in quadrat	Utah GAP Vegetation
Acres of Agrid Soils in quadrat	NRCS Utah Statsgo (soils)
Acres of Orthid Soils in quadrat	NRCS Utah Statsgo (soils)
Acres of Fluvent Soils n quadrat	NRCS Utah Statsgo (soils)
Acres of Orthent Soils n quadrat	NRCS Utah Statsgo (soils)
Acres of Borolls Soils n quadrat	NRCS Utah Statsgo (soils)
Acres of Xerolls Soils n quadrat	NRCS Utah Statsgo (soils)
Acres of mule deer habitat (winter or summer) in quadrat	BLM data
Acres of Rocky Mtn. Elk habitat (winter or summer) in quadrat	BLM data
Acres of Pronghorn habitat in quadrat	BLM data
Acres of Bighorn (either Rocky Mtn. Or Desert) habitat in quadrat	BLM data
Acres of sage grouse habitat in quadrat	BLM data
Acres of 100-year floodplain in quadrat	SGID024_Floodplains

Table L.2. Survey Areas Utilized to Develop the Discriminant Function Analysis Model

Name of Area	State Project #(s)	Year
Maverick Point	U-85-FS-026	1985
South of Moqui Canyon	U-90-Al-525	1990
Cedar Mesa-near Johns Canyon	U-80-BL-322	1980
Near Bluff	U-85-BL-019 U-86-BL-654 U-05-BL-112	1985 1986 2005
Big Bench	U-93-AS-110	1993
Lower Montezuma Creek	U-88-CH-645	1988
Near Hovenweep	U-90-Al-461	1990
South Cottonwood/ WhiteMesa	U-79-UC-233	1979
South of Monticello	U-88-GB-417 U-89-GB-662 U-92-GB-619 U-93-GB-502	1988 1989 1992 1993
Lisbon Valley	U-87-BL-244 U-88-AS-104 U-88-BL-255	1987 1988 1988
Dry Valley	U-93-WN-199	1993
Harts Point	U-91-LA-441	1991
Indian Creek	U-83-UD-239	1983
Lime Ridge	U-90-CH-552	1990

The discriminant function analysis ultimately indicated that four variables were relevant to distinguishing medium and high site density areas (Table L.3). These included elevation, percent of pinyon-juniper cover, number of acres classified as sagebrush vegetation, and the number of acres classified as orthid soils. The standardized function coefficients can be interpreted to indicate that percent of pinyon juniper and sagebrush acres account for much of the differences between groups. The variables differ from those selected in similar discriminant function analyses (Tipps et al. 1988:128), in that variables related to water (e.g. distance to nearest river, distance to nearest permanent water, number of drainages in the quadrat, etc.) are not included in the final discriminant function. Elevation and percent pinyon-juniper are, however, included in a similar fashion. The role of orthid soil acres is somewhat perplexing. Orthid soils are generally poor for agriculture, generally occurring in poorly drained basins and having high salt or calcic components. Their presence in the model may reflect a preference for not situating occupations on land that could be used for agricultural purposes, or they may reflect occupation of basin interiors, where orthid soils typically occur.

Table L.3. Variables Determined Relevant by Discriminant Function Analysis for Predicting Medium (1 site/l acre) and high (2+ sites/160 acres) Density Areas with Associated Coefficients and Constants (Eigenvalue =.560, Canonical correlation=.599)

	Standardized Function Coefficient	Discriminant Function Coefficient/Constant*	
Variable		Medium	High
Elevation	-.651	.048	.043
Percent Pinyon-Juniper	1.097	-.207	-.136
Sagebrush Acres	1.153	-.085	-.041
Orthid Soil Acres	-.748	.101	.069
Constant	n/a	-43.384	-36.428

*The formula for determining site density prediction is applied in the following manner: Medium site density = (.048xElevation)+(-.207xPercent PJ)+(-.085 x Sagebrush Acres)+(.101xOrthid Soil Acres)+(-43.384). High site density = (.043xElevation)+(-.136xPercent PJ)+(-.041x Sagebrush Acres)+(.069xOrthid Soil Acres)+(-36.428). After calculating the values for medium and high site density, whichever value is greater is used to assign the quadrat to that group. In other words, if the value for medium is 13.87 and the value for high is 8.63, the quadrat would be defined as having "medium" site density.

L.2 Testing the Model

The discriminant function equation generally had very good classification success (Table L.4). The model correctly predicted 81% of medium site density areas, and 82% of high site density areas. It incorrectly predicted 3 out of 16 medium site density areas as high-density areas and 15 out of 85 high-density areas as medium-density areas. The overall classification success was 83 out of 101 quadrats, or 82%.

Table L.4. Actual and Predicted Site Density Values with Percentages of Correct and Incorrectly Classified Sites for the 101 Quadrats used to Develop the Discriminant Function Model

		Predicted		Actual Totals
		Medium	High	
Actual	Medium	13 (81% correct)	3 (18% incorrect)	16
	High	15 (17% incorrect)	70 (82% correct)	85

The true value of a classification formula, however, is in predictive success on new quadrats and areas other than the ones used to develop the formula. In order to test the formulae, they were applied to a second data set consisting of 82 quadrats from different survey areas (Table L.5). The areas selected for model development were taken from 16 cultural resource inventories ranging in acreage from 160 acres to 1474 acres, and located within the broader Moab/Monticello FO area encompassing environments similar to the entire field office area. Survey dates for these inventories ranged from 1981 to 2005, with the majority inventoried in the late 1980s and 1990s. A total of 85 quadrats were present in these areas and used for the analysis.

Table L.5. Survey Areas Utilized to Test the Discriminant Function Analysis Model.

Name of Area	State Project #	Year
Recapture	U-90-AS-730	1990
Horsehead Point	U-90-CH-246	1990
West edge Bug Point	U-85-LA-738	1985
Devil's Canyon Campground	U-92-FS-653 U-94-FS-540	1992 1994
Mouth of Squaw Canyon	U-84-LA-803 U-86-LA-754 U-86-LA-755	1984 1986 1986
Hovenweep	U-90-AI-461 also NPS in NM	1990 unknown
Blue Hogan	U-96-CH-470	1996
Allen Canyon West	U-86-WC-909	1986
Allen Canyon East	U-86-WC-909	1986
Allen Canyon NW	U-86-WC-909	1986
Wooden Shoe Canyon	U-86-NH-836 U-87-WN-553	1986 1987
Peters Point	U-90-FS-262 U-90-FS-422	1990 1990
Lower Indian Creek	U-99-BL-565	1999
Lockhart Basin West	U-98-BL-460	1998
Lockhart Basin East	U-98-BL-460	1998
Natural Bridges	U-81-UC-439 U-87-NA-038	1981 1987

The formulae for medium and high site densities were then applied to the same variables derived in the discriminant function analysis within the new and independent survey areas. The independent test yielded lower, but still valuable, predictive success (Table L.6). A total of 58 of 82 quadrats were correctly predicted for an overall classification success of 71%. Notably, however, the model did incorrectly predict 14 (or 66%) of the 21 medium-density quadrats as high-density quadrats. However, this error is actually conservative for the purposes of management, as it ultimately predicts higher site density in areas that have medium site density.

Table L.6. Actual and predicted site density values with percentages of correct and incorrectly classified sites for the 85 quadrats used to test the discriminant function model.

		Predicted		Actual Totals
		Medium	High	
Actual	Medium	7 (33% correct)	14 (66% incorrect)	21
	High	10 (16% incorrect)	51 (84% correct)	61

L.3 SUMMARY

Overall, while the site density prediction model is by no means a perfect predictor of site density, it is sufficiently accurate to be utilized as a tool for analyzing potential relative involvement of cultural resource sites in management decisions. It has between a 70 and 80% success rate in defining 160-acre quadrats with 1 or 2 or more cultural resource sites. It is therefore utilized in analyses in the RMP as a means of gauging whether a particular alternative will involve more acres of high site density land than another, or whether an alternative will involve more acres of medium site density land. It is not utilized to predict numbers of sites involved in decisions. Furthermore, the model should not be considered a replacement for full inventory. As noted, in compliance with Section 106 of the National Historic Preservation Act, all specific actions with potential to involve cultural resources will be subject to intensive identification efforts such as cultural resources inventory. The discriminant function model is only used here to provide a means of supplementing the existing knowledge held by BLM and other resource specialists regarding known resources and high-density areas with a means of assessing relative site density in unknown or unsurveyed areas. The model is developed simply to provide a consistent and replicable means of assessing relative acres of high and medium site density areas involved in management decisions.

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APPENDIX M. BEST MANAGEMENT PRACTICES FOR RAPTORS AND THEIR ASSOCIATED HABITATS IN UTAH, AUGUST 2006

M.1 INTRODUCTION

Raptors, or *Birds of Prey,* are found on public lands throughout Utah. Approximately 31 species of raptors utilize public lands for at least a portion of their life cycle. These include 20 diurnal raptors, including the eagles, hawks, falcons, osprey, turkey vulture and California condor; and 11 mostly nocturnal owl species. At least 16 of the diurnal raptors are known to nest, roost and forage on public lands; while 2 others are probable nesters within the southern part of the state. The California condor is known to utilize public lands for roosting and foraging, but is not currently known to nest within the state. The rough-legged hawk is a winter resident that uses public lands for foraging. All of the owl species nest, roost and forage on public lands in Utah.

Eight of Utah's raptors are considered to be Special Status Species by the BLM, and currently receive enhanced protection, in addition to the regulatory authority provided by the Migratory Bird Treaty Act (MBTA), which covers all raptor species. The bald eagle and Mexican spotted owl are listed as Federally threatened species and are afforded the protection, as well as the Section 7 consultation requirements, of the Endangered Species Act (ESA). The bald eagle is currently being proposed for delisting by the Fish and Wildlife Service. Both the bald eagle and golden eagle are protected by the provisions of the Eagle Protection Act. The California condor is a Federally endangered species, however, the birds found in southern Utah are part of an Experimental Non-essential Population reintroduced to northern Arizona under Section 10(j) of the Endangered Species Act. The BLM is required to treat the condor as a species proposed for listing for Section 7 purposes of the ESA. The northern goshawk is managed by a multi-agency Conservation Agreement. The ferruginous hawk, short-eared owl and burrowing owl are listed as Wildlife Species of Concern by the Utah Division of Wildlife Resources (UDWR, May 12, 2006), and are therefore recognized as BLM state-sensitive species under the Bureau's 6840 Manual. The BLM's 6840 Policy states that "*BLM shall…ensure that actions authorized, funded, or carried out…do not contribute to the need for the species to become listed".*

Future raptor management on BLM lands in Utah will be guided by the use of these Best Management Practices (BMPs), which are BLM-specific recommendations for implementation of the U.S. Fish and Wildlife Service, Utah Field Office's *"Guidelines for Raptor Protection From Human and Land Use Disturbances"* (*"Guidelines"*). The *"Guidelines"* were originally developed by the Fish and Wildlife Service in 1999, and were updated during 2002 to reflect changes brought about by court and policy decisions and to incorporate Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds.* The *"Guidelines"* were provided to BLM and other land-managing agencies in an attempt to provide raptor management consistency, while ensuring project compatibility with the biological requirements of raptors, and encouraging an ecosystem approach to habitat management.

These Best Management Practices, or specific elements of the BMP's which pertain to a proposal, should be attached as Conditions of Approval to all BLM use authorizations which have the potential to adversely affect nesting raptors, or would cause occupied nest sites to become unsuitable for nesting in subsequent years.

Raptor management is a dynamic and evolving science, and consequently, as the science evolves, these BMP's will undergo subsequent revision. As more information becomes available through implementation of these raptor BMP's, and as our knowledge of raptor life cycle requirements increases, findings will be incorporated into future revisions of the BMP document. Additionally, BLM and the Department of Energy are initiating a 3-year Raptor Radii study which will test traditional spatial and seasonal nest buffers during actual oil and gas development activities for a select suite of species. Study results would be incorporated into new BMP revisions as well.

To adequately manage raptors and their habitats, and to reduce the likelihood of a raptor species being listed under the Endangered Species Act (ESA), BLM-authorized or proposed management activities and/or land disturbing actions would be subject to the criteria and processes specified within these BMPs. The implementation of raptor spatial and seasonal buffers under the BMPs would be consistent with Table 2 of the "*Guidelines"*, included here as Attachment 2. As specified in the "*Guidelines"*, modifications of spatial and seasonal buffers for BLM-authorized actions would be permitted, so long as protection of nesting raptors was ensured. State and/or Federally-listed, proposed, and candidate raptor species, as well as BLM state-sensitive raptor species, should be afforded the highest level of protection through this BMP process; however, all raptor species would continue to receive protection under the Migratory Bird Treaty Act. Modification of the buffers for threatened or endangered species would be considered pending results of Section 7 Consultation with USFWS.

As stated in the "*Guidelines"*, spatial and seasonal buffers should be considered as the best available recommendations for protecting nesting raptors under a wide range of activities state-wide. However, they are not necessarily site-specific to proposed projects. Land managers should evaluate the type and duration of the proposed activity, the position of topographic and vegetative features, the sensitivity of the affected species, the habituation of breeding pairs to existing activities in the proposed project area, and the local raptor nesting density, when determining site-specific buffers. The BLM would be encouraged to informally coordinate with UDWR and USFWS anytime a site-specific analysis shows that an action may have an adverse impact on nesting raptors. The coordination would determine if the impact could be avoided or must be mitigated, and if so, to determine appropriate and effective mitigation strategies.

Potential modifications of the spatial and seasonal buffers identified in the *"Guidelines"* may provide a viable management option. Modifications would ensure that nest protection would occur, while allowing various management options which may deviate from the suggested buffers within the *"Guidelines"*, which, if adequately monitored, could provide valuable information for incorporation into future management actions.

Seasonal raptor buffers from Attachment 2 should be reviewed by local raptor nesting authorities who are knowledgeable of raptor nesting chronologies within their local area. For those nesting raptors for which local nesting chronologies remain uncertain, the seasonal buffers provided in Attachment 2 should serve as the default. However, for those raptor species whose known nesting chronologies differ from the seasonal buffers provided in Attachment 2, the local seasonal buffers may be utilized as a modification of the "*Guidelines"*.

Criteria that would need to be met, prior to implementing modifications to the spatial and seasonal buffers in the "*Guidelines"*, would include the following:

1. Completion of a site-specific assessment by a wildlife biologist or other qualified individual. See example (Attachment 1).
2. Written documentation by the BLM Field Office Wildlife Biologist, identifying the proposed modification and affirming that implementation of the proposed modification(s) would not affect nest success or the suitability of the site for future nesting. Modification of the "Guidelines" would not be recommended if it is determined that adverse impacts to nesting raptors would occur or that the suitability of the site for future nesting would be compromised.
3. Development of a monitoring and mitigation strategy by a BLM biologist, or other raptor biologist. Impacts of authorized activities would be documented to determine if the modifications were implemented as described in the environmental documentation or Conditions of Approval, and were adequate to protect the nest site. Should adverse impacts be identified during monitoring of an activity, BLM would follow an appropriate course of action, which may include cessation or modification of activities that would avoid, minimize or mitigate the impact, or, with the approval of DWR and F&WS, BLM could allow the activity to continue while requiring monitoring to determine the full impact of the activity on the affected raptor nest. A monitoring report would be completed and forwarded to UDWR for incorporation into the Natural Heritage Program (NHP) raptor database.

In a further effort to provide additional support and expertise to local BLM Field biologists, a network of biologists from various agencies with specific expertise in raptor management has been identified and included as Attachment 3. The personnel identified have extensive backgrounds in raptor management issues and are available, upon request, to assist BLM Field biologists on a case by case basis. Field biologists are encouraged to use this network, via informal conference, with one or more of the individuals identified. This coordination should be clearly distinguished from the consultation process required under Section 7 of the ESA. Individuals on the expert panel should not be expected to provide formal advice, but should serve as a sounding board for discussing potential affects of a proposal, as well as potential mitigation measures on specific projects which may be useful to BLM biologists.

M.2 HABITAT ENHANCEMENT

As recommended in the "*Guidelines"*, raptor habitat management and enhancement, both within and outside of buffers, would be an integral part of these BMPs, with the understanding that in order for raptors to maintain high densities and maximum diversity, it is necessary that the habitat upon which they and their prey species depend be managed to promote healthy and productive ecosystems. Habitat loss or fragmentation would be minimized and/or mitigated to the extent practical and may include such measures as; drilling multiple wellheads per pad, limiting access roads and avoiding loop roads to well pads, effective rehabilitation or restoration of plugged and abandoned well locations and access roads that are no longer required, rehabilitation or restoration of wildland fires to prevent domination by non-native invasive annual species, vegetation treatments and riparian restoration projects to achieve Rangeland Health Standards, etc.

In some cases, artificial nesting structures, located in areas where preferred nesting substrates are limited, but where prey base populations are adequate and human disturbances are limited, may enhance some raptor populations, or may serve as mitigation for impacts occurring in other areas.

M.3 PROTECTION OF NEST SITES AND BUFFER ZONES

As stated in the *"Guidelines"*, protection of both occupied and unoccupied nests is important since not all raptor pairs breed every year, nor do they always utilize the same nest within a nesting territory. Individual raptor nests left unused for a number of years are frequently reoccupied, if all the nesting attributes which originally attracted a nesting pair to a location are still present. Nest sites are selected by breeding pairs for the preferred habitat attributes provided by that location.

Raptor nest buffer zones are established for planning purposes because the nest serves as the focal point for a nesting pair of raptors. The buffer should serve as a threshold of potential adverse affect to nest initiation and productivity. Actions proposed within these buffer zones are considered potentially impacting and, therefore, trigger the need for consideration of site-specific recommendations.

Seasonal (temporal) buffer zones are conservation measures intended to schedule potentially impacting activities to periods outside of the nesting season for a particular raptor species. These seasonal limitations are particularly applicable to actions proposed within the spatial buffer zone of a nest for short duration activities such as, pipeline or powerline construction, seismic exploration activity, vegetative treatments, fence or reservoir construction, permitted recreational events, etc., where subsequent human activity would not be expected to occur.

Spatial buffer zones are those physical areas around raptor nest sites where seasonal conservation measures, or surface occupancy restrictions may be applied, depending on the type and duration of activity, distance and visibility of the activity from the nest site, adaptability of the raptor species to disturbance, etc. Surface occupancy restrictions should be utilized for actions which would involve human activities within the buffer zone for a long duration (more than one nesting season) and which would cause an occupied nest site to become unsuitable for nesting in subsequent years.

M.3.1 UNOCCUPIED NESTS:

All Activities, including All Mineral Leases: Surface-disturbing activities, occurring outside of the breeding season (seasonal buffer), but within the spatial buffer, would be allowed during a minimum three-year nest monitoring period, as long as the activity would not cause the nest site to become unsuitable for future nesting, as determined by a wildlife biologist. Facilities and other permanent structures would be allowed, if they meet the above criteria.

Some examples of typical surface disturbing actions, occurring outside of the seasonal buffer, which may not be expected to affect nest production or future nesting suitability, would include; pipelines, powerlines, seismographic exploration, communication sites, an oil or gas well with off-site facilities which does not require routine visitation, recreation events, fence or reservoir construction, vegetative treatments, and other actions with discreet starting and ending times, and for which subsequent human activity or heavy equipment operation within the spatial buffer would not be expected to occur, or could be scheduled outside of the seasonal buffer in subsequent years.

Surface disturbing activities that would be expected to potentially affect nest production or nest site suitability, include; oil and gas facilities requiring regular maintenance, sand and gravel operations, road systems, wind energy projects, mining operations, and other actions requiring

continual, random human activity, or heavy equipment operation during subsequent nesting seasons.

A nest site which does not exhibit evidence of use, such as; greenery in the nest, fresh whitewash, obvious nest maintenance or the observed presence of adults or young at the nest, for a period of three consecutive years, (verified through monitoring), would be deemed abandoned and all seasonal and spatial restrictions would cease to apply to that nest. All subsequent authorizations for permanent activities within the spatial buffer of the nest could be permitted. If the nest becomes reoccupied after authorized activities are completed, conservation measures would be considered to reduce potential adverse affects and to comply with the Migratory Bird Treaty Act and the Eagle Protection Act.

The three-year non-use standard varies from the "*Guidelines*" suggested seven-year non-use standard before declaring nest abandonment. This variation is based upon a similar standard which has been applied for over 20 years in two administrative areas within Utah. Empirical evidence would suggest the three-year non-use standard has been effective in conserving raptor species. The three-year standard has been applied without legal challenge or violation of "Take" under the Migratory Bird Treaty Act or the Eagle Protection Act.

Because prey base populations are known to be cyclic, and because raptor nest initiation or nesting success can be affected by drought and other random natural events, care should be taken when applying the 3-year non-activity standard. The 3-year nest occupancy monitoring requirement should be viewed as a minimum time period during those years of optimal raptor nesting conditions. During sub-optimal raptor nesting years, when nesting habitat may be affected by drought, low prey base populations, fire, or other events, the monitoring standard should be increased to allow raptors the opportunity to reoccupy nesting sites when nesting conditions become more favorable.

M.3.2 Occupied Nests

All Activities: Land use activities which would have an adverse impact on an occupied raptor nest would not be allowed within the spatial or seasonal buffer.

M.4 Consideration of Alternatives and Mitigation Measures

Alternatives, including denial of the proposal, should be identified, considered and analyzed in a NEPA document anytime an action is proposed within the spatial buffer zone of a raptor nest. Selection of a viable alternative that avoids an impact to nesting raptors should be selected over attempting to mitigate those impacts. If unavoidable impacts are identified, mitigation measures should be applied as necessary to mitigate adverse impacts of resource uses and development on nesting raptors. Monitoring of the effectiveness of the mitigation measures should be mandatory and should be included as a Condition of Approval.

M.5 Specific Strategies to be Implemented Regarding Other Resource Uses

The following are management strategies designed to reduce or eliminate potential conflicts between raptors and other resource uses. This is a list of examples and is not intended to be an all-inclusive list. In all cases, when an activity on BLM lands is proposed, and a NEPA

document developed, the site-specific analysis process identified in Attachment 1 may be implemented to identify and either avoid or mitigate impacts to raptors from the proposal. These strategies apply to both BLM and applicant-generated proposals. The strategies are as follows:

M.5.1 CULTURAL RESOURCES

Excavation and studies of cultural resources in caves and around cliff areas should be delayed until a qualified biologist surveys the area to be disturbed or impacted by the activity for the presence of raptors or nest sites. If nesting raptors are present, the project should be rescheduled to occur outside of the seasonal buffer recommended by the *"Guidelines"*.

M.5.2 FORESTRY AND HARVEST OF WOODLAND PRODUCTS

Timber harvest would be subject to NEPA analysis and would be conducted in a manner that would avoid impacts to raptor nests. This could also apply to areas identified for wood gathering and firewood sales.

M.5.3 HAZARDOUS FUEL REDUCTION/HABITAT RESTORATION PROJECTS

Hazardous fuels reduction projects and shrubsteppe restoration projects should be reviewed for possible impacts to nesting raptors. Removal of trees containing either stick nests or nesting cavities, through prescribed fire, or mechanical or manual treatments, should be avoided.

It is important to note that certain raptor species are tied to specific habitat types, and that consideration must be made on a site-specific basis when vegetation manipulation projects are proposed, to determine which raptor species may benefit and which may be negatively affected by the vegetation composition post-treatment.

M.5.4 LIVESTOCK GRAZING

Manage rangelands and riparian areas in a manner that promotes healthy, productive rangelands and functional riparian systems. Rangeland Health Assessments should be conducted on each grazing allotment, and rangeland guidelines should be implemented where Rangeland Health Standards are not being met, to promote healthy rangelands.

Locations of sheep camps and other temporary intrusions would be located in areas away from raptor nest sites during the nesting season. Placement of salt and mineral blocks would also be located away from nesting areas.

Season of use, kind of livestock, and target utilization levels of key species affect vegetative community attributes (percent cover, composition, etc.) and influence small mammal and avian species diversity and density. While not all raptor species would be affected in the same way, livestock management practices which maintain or enhance vegetative attributes, will preserve prey species density and diversity which will benefit the raptor resource.

M.5.5 OHV USE

Special Recreation Management Areas (SRMAs) that are developed for OHV use would not be located in areas that have important nesting, roosting, or foraging habitat for raptors.

Off highway vehicle use would be limited to designated roads, trails and managed open areas. Lands categorized as "Open" for OHV use should not be in areas important to raptors for nesting, roosting, and foraging

When proposals for OHV events are received, the area to be impacted would be surveyed by a qualified wildlife biologist to determine if the area is utilized by raptors. Potential conflicts would be identified and either avoided or mitigated prior to the issuance of any permit.

M.5.6 Oil and Gas Development

The Code of Federal Regulations (CFR), 43 CFR 3101.1-2, allows for well site location and timing to be modified from that requested by the lessee to mitigate conflicts at the proposed site, and states that the location can be moved up to 200 meters and the timing of the actual drilling can be delayed for up to 60 days to mitigate environmental concerns. The regulation also allows BLM to move a location more than 200 meters, or delay operations more than 60 days to protect sensitive resources, with supporting rationale and where lesser restrictions are ineffective. The Site Specific Analysis (Attachment 1) would provide the supporting rationale. Provisions are also present within Sections 3 and 6 of the Standard Lease Form which require compliance with existing laws and would allow the BLM to impose additional restrictions at the permitting phase, if the restrictions will prevent violation of law, policy or regulation, or avoid undue and unnecessary degradation of lands or resources.

M.5.7 Realty

Lands proposed for disposal which includes raptor nesting, roosting, or important foraging areas would be analyzed and evaluated for the relative significance of these resources before a decision is made for disposal or retention.

A priority list of important raptor habitat areas, especially for Federally listed or state sensitive raptor species, on state and private lands should be developed and utilized as lands to be acquired by BLM when opportunities arise to exchange or otherwise acquire lands.

Lands and realty authorizations would include appropriate conservation measures to avoid and/or mitigate impacts to raptors.

M.5.8 Recreation

Development of biking trails near raptor nesting areas would be avoided.

Rock climbing activities would be authorized only in areas where there are no conflicts with cliff nesting raptors.

In high recreation use areas where raptor nest sites have been made unsuitable by existing disturbance or habitat alteration, mitigation should be considered to replace nest sites with artificial nest structures in nearby suitable habitat, if it exists, and consider seasonal protection of nest sites through fencing or other restrictions.

Dispersed recreation would be monitored to identify where this use may be impacting nesting success of raptors.

M.5.9 Wild Horse Program

In areas where wild horse numbers are determined to be in excess of the carrying capacity of the range, removal of horses, as described in the various herd management area plans, would continue, to prevent further damage to rangelands.

M.6 INVENTORY AND MONITORING

Each Field Office should cooperatively manage a raptor database, with UDWR and USFWS, as part of the BLM Corporate database. Raptor data should be collected and compiled utilizing the Utah Raptor Data Collection Standards developed by the Utah State Office, so that personnel from other agencies can access the data. Appropriate protocols for survey and monitoring should be followed, when available. This database should be updated as new inventory and monitoring data becomes available. The data should also be forwarded to UDWR and the Natural Heritage Program, which has been identified as the central repository for raptor data storage for the State of Utah.

Use of Seasonal Employees and volunteers, as well as "Challenge Cost Share" projects, should be utilized to augment the inventory and monitoring of raptor nests within a planning area, with the data entered into the above-mentioned databases at the close of each nesting season. Project proponents, such as energy development interests, would be encouraged to participate and help support an annual raptor nest monitoring effort within their areas of interest.

Active nest sites should be monitored during all authorized activities that may have an impact on the behavior or survival of the raptors at the nest site. A qualified biologist would conduct the monitoring and document the impacts of the activity on the species. A final report of the impacts of the project should be placed in the EA file, with a copy submitted to the NHP. The report would be made available for review and should identify what activities may affect raptor-nesting success, and should be used to recommend appropriate buffer zones for various raptor species.

As data are gathered, and impact analyses are more accurately documented, "adaptive management" principles should be implemented. Authorization of future activities should take new information into account, better protecting raptors, while potentially allowing more development and fewer restrictions, if data indicates that current restrictions are beyond those necessary to protect nesting raptors, or conversely indicates that current guidance is inadequate for protection of nesting raptors.

ATTACHMENT 1

Site Specific Analysis Data Sheet

Observer(s) _____ **Date**_____

1. Conduct a site visit to the area of the proposed action and complete the raptor nest site data sheet according to BLM data standards.

2. Area of Interest Documentation (**Bold** items require completion, other information is optional)

State___ Office _____ Management Unit _____

Project ID# _____

Location (Description)

Legal T_____, R __, Sec. __, 1/4, __ 1/4, __ or UTM Coordinates

Latitude_____Longitude_____

Photos Taken Y( ) N( )

Description of photos:

_____

_____

_____

_____

_____

_____

Raptor Species_____ Confirmed ___ Unconfirmed ___

Distance From Proposed Disturbance to: Nest _____
Perch _____
Roost _____

Line of Site Evaluation From: **Nest** _____
Perch _____
Roost _____

Extent of Disturbance: Permanent _____ Temporary _____
Distance from Nest/Roost _____ Acreage _____

Length of Time____Timing Variations_____ Disturbance Frequency_____

_____

_____

_____

Other Disturbance Factors: Yes No (If yes, explain what and include distances from nest to disturbances)

_____

_____

_____

_____

Approximate Age of Nest: New__ **Historical**: (Number of Years)__

Evidence of Use (Describe):

_____

_____

_____

Habitat Values Impacted: _____

_____

_____

Proportion of Habitat Impacted (Relate in terms of habitat available):

_____

_____

_____

Estimated Noise Levels of Project (db):_____

Available Alternative(s) (e.g., location, season, technology):

_____

_____

_____

Associated Activities:

_____

_____

_____

Cumulative Effects of Proposal and Other Actions in Habitat Not Associated With the Proposal:

_____

_____

_____

Potential for site Rehabilitation: High___ Low_____

Notes/Comments:

_____

_____

_____

_____

Summary of Proposed Modifications:
Possible modifications to the spatial and seasonal buffers within the FWS *"Guidelines"* include the following:

_____

_____

_____

Rationale:

_____

_____

_____

Summary of Proposed Mitigation Measures:
Possible mitigation measures related to the proposal include the following:

_____

_____

_____

Rationale:

_____

_____

_____

Summary of Alternatives Considered:
Possible alternatives to the proposal include the following:

_____

_____

_____

Rationale:

_____

_____

_____

Recommendation to FO Manager Based on Above Findings:

_____

_____

_____

_____

_____

_____ _____
Field Office Wildlife Biologist Date

ATTACHMENT 2

NESTING PERIODS AND RECOMMENDED BUFFERS FOR RAPTORS IN UTAH

Nesting periods and recommended buffers for raptors in Utah

Species	Spatial Buffer (miles)	Seasonal Buffer	Incubation, # Days	Brooding, # Days Post-Hatch	Fledging, # Days Post-Hatch	Post-fledge Dependency to Nest, # Days[1]
Bald eagle	1.0	1/1-8/31	34-36	21-28	70-80	14-20
Golden eagle	0.5	1/1-8/31	43-45	30-40	66-75	14-20
N. Goshawk	0.5	3/1-8/15	36-38	20-22	34-41	20-22
N. Harrier	0.5	4/1-8/15	32-38	21-28	42	7
Cooper's hawk	0.5	3/15-8/31	32-36	14	27-34	10
Ferruginous hawk	0.5	3/1-8/1	32-33	21	38-48	7-10
Red-tailed hawk	0.5	3/15-8/15	30-35	35	45-46	14-18
Sharp-shinned hawk	0.5	3/15-8/31	32-35	15	24-27	12-16
Swainson's hawk	0.5	3/1-8/31	33-36	20	36-40	14
Turkey vulture	0.5	5/1-8/15	38-41	14	63-88	10-12
California condor	1.0	NN yet	56-58	5-8 weeks	5-6 months	2 months
Peregrine falcon	1.0	2/1-8/31	33-35	14-21	35-49	21
Prairie falcon	0.25	4/1-8/31	29-33	28	35-42	7-14
Merlin	0.5	4/1-8/31	28-32	7	30-35	7-19
American kestrel	NN[2]	4/1-8/15	26-32	8-10	27-30	12
Osprey	0.5	4/1-8/31	37-38	30-35	48-59	45-50
Boreal owl	0.25	2/1-7/31	25-32	20-24	28-36	12-14
Burrowing owl	0.25	3/1-8/31	27-30	20-22	40-45	21-28
Flammulated owl	0.25	4/1-9/30	21-22	12	22-25	7-14
Great horned owl	0.25	12/1-9/31	30-35	21-28	40-50	7-14
Long-eared owl	0.25	2/1-8/15	26-28	20-26	30-40	7-14
N. saw-whet owl	0.25	3/1-8/31	26-28	20-22	27-34	7-14
Short-eared owl	0.25	3/1-8/1	24-29	12-18	24-27	7-14
Mex. Spotted owl	0.5	3/1-8/31	28-32	14-21	34-36	10-12
N. Pygmy owl	0.25	4/1-8/1	27-31	10-14	28-30	7-14
W. Screech owl	0.25	3/1-8/15	21-30	10-14	30-32	7-14
Common Barn-owl	NN[2]	2/1-9/15	30-34	20-22	56-62	7-14

[1] Length of post-fledge dependency period to parents is longer than reported in this table. Reported dependency periods reflect the amount of time the young are still dependent on the nest site; i.e. they return to the nest for feeding. [2] Due to apparent high population densities and ability to adapt to human activity, a spatial buffer is not currently considered necessary for maintenance of American kestrel or Common barn-owl populations. Actions resulting in direct mortality of individual bird or take of known nest sites is unlawful

ATTACHMENT 3

UTAH RAPTOR MANAGEMENT EXPERTS FROM VARIOUS AGENCIES

The following list of personnel from various agencies in Utah, are recognized experts in the field of raptor ecology or have extensive field experience in managing raptor resources with competing land uses. The list is provided to inform BLM field biologists and managers of this network of specialized expertise that may be able to assist, as time permits, with specific raptor management issues. Individuals in this Utah Raptor Network, also have well established contacts with an informal extended network of highly qualified raptor ecologists outside the state (i.e. USGS, State Wildlife Agencies, and Universities etc.) which could provide an additional regional perspective.

It should be pointed out that this list is not intended to replace or interfere with established lines of communication but rather supplement these lines of communication.

Utah BLM	David Mills	**david_mills@blm.gov**	435-896-1571
Utah BLM	Steve Madsen	**steve_c_madsen@blm.gov**	801-539-4058
Utah DWR	Dr. Jim Parrish	**jimparrish@utah.gov**	801-538-4788
Utah DWR (NERO)	Brian Maxfield	**brianmaxfield@utah.gov**	435-790-5355
USFWS	Laura Romin	**laura_romin@usfws.gov**	801-975-3330
USFWS	Diana Whittington	**diana_whittington@usfws.gov**	801-975-3330
USFS	Chris Colt	**ccolt@fs.fed.us**	801-896-1062
HawkWatch Intl	Jeff Smith	**jsmith@hawkwatch.org**	801-484-6808

ATTACHMENT 4

REFERENCES CITED

Code of Federal Regulations; 43 CFR 3101.1-2, Leasing Regulations.

Endangered Species Act (ESA); 16 U.S.C. 1513-1543

Migratory Bird Treaty Act (MBTA); 16 U.S.C. 703-712

Romin, Laura A. and James A. Muck, 2002, "Utah Field Office Guidelines For Raptor Protection From Human And Land Use Disturbances." U.S. Department of Interior, U.S. Fish and Wildlife Service, Utah Field Office, Salt Lake City, Utah.

Standards for Rangeland Health and Guidelines for Grazing Management; 1997. U.S. Department of Interior, Bureau of Land Management.

U.S. Department of the Interior, Bureau of Land Management; 6840 Manual.

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APPENDIX N. DRAFT TRAVEL PLAN BLM MONTICELLO FIELD OFFICE

N.1 INTRODUCTION

Travel management is the process of planning for and managing access and travel systems on the public lands. Comprehensive travel management planning should address all resource use aspects, such as recreational, traditional, casual, agricultural, commercial, and educational, and accompanying modes and conditions of travel on public lands, not just motorized or off-highway vehicle activities (BLM Land Use Planning Handbook 1601-1, Appendix C). This includes travel needs for all resource management programs administered by the BLM, including but not limited to the mineral industry, livestock grazing, and recreation.

Though historically focused on motor vehicle use, comprehensive travel management also encompasses all forms of transportation including travel by foot, horseback and other livestock, mechanized vehicles such as bicycles, as well as the numerous forms of motorized vehicles from two-wheeled (motorcycles) and four-wheeled such as all-terrain vehicles (ATVs) to cars, trucks, and boats motorized and non-motorized.

The term off-road vehicle (ORV) is an outdated term that has the same meaning as off-highway vehicle (OHV), which is currently in use. The term off-highway vehicle (OHV) refers to the latter group noted above – "any motorized vehicle capable of, or designated for, travel on or immediately over land, water, or other natural terrain," as defined in the National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands, finalized by the Bureau of Land Management (BLM) in January 2001. The intent of the National Strategy was to update and revitalize management of off-highway motor vehicle use on BLM administered lands. The national strategy provides guidance and recommendations to accomplish that purpose.

The process of development and content of the preliminary draft Monticello travel plan are described in this document.

N.2 HOW TO READ/USE THIS DOCUMENT

This Travel Plan document addresses the process by which the BLM Monticello Field Office Interdisciplinary (ID) Team and the BLM cooperators have developed the Draft EIS alternatives for motorized and non-motorized use in the resource area. This document takes the reader through the current process of travel planning within the Monticello Field Office, and describes the route designations.

- The Land Use Planning portion of the travel plan defines the areas within the field office that are determined to be Open, Limited, or Closed, and the number of miles of designated routes under the Limited category.
- The Implementation portion of the travel plan describes the routes designated, seasonal closures and associated resource and/or user conflicts, mapping and travel information, signing, interagency coordination, use supervision, monitoring, enforcement, maintenance, and cost estimates for the implementation process.

Public scoping and input issues that were brought forward for this travel plan process are described in Section N.6.

The criteria and inventory processes by which the BLM and its cooperators arrived at the routes included in the draft environmental impact statement (DEIS) alternatives are outlined in Sections N.7 and N.8.

The travel plan development process is presented in Section N.9; lists of routes for non - motorized, equestrian/stock, and foot travel are also provided in Section N.9.4. Lists of preliminary motorized route closures can be viewed at the Monticello FO.

The analysis of impacts for the travel plan will be completed within the DEIS of the RMP process; the decisions made for the RMP will be in the Record of Decision (ROD).

Finally, implementation planning including mapping, signing, and public information is outlined in Section N.15 including general monitoring descriptions, proposals for educational programs, and the role of law enforcement in travel management for the Monticello Field Office. Cost estimates to accomplish the travel plan implementation are included in Section N.15.

Acronyms and Definitions commonly used in addressing off-road vehicle use are found in Attachment A and B, respectively. Lists of proposed route closures in the four draft alternatives, preliminary travel maps for the Monticello Field Office area (as of September 2005), and a summary and comparisons of BLM travel plan to two organizations' proposals can be viewed at the Monticello FO.

Note: Alternative E was developed subsequent to the Travel Plan. Alternative E under the Travel plan would be the same as Alternative B except non-WSA lands with wilderness characteristics would be managed as closed to OHV use.

N.3 SUMMARY

Land Use Planning – The Code of Federal Regulations (43 CFR Part 8340) and Executive Order 12608 require BLM to designate all public lands as Open, Limited, or Closed for OHV use. These designations are made in the Resource Management Plans (RMPs) or in plan amendments. Additionally, the criteria for route designation are established in the RMP.

The following table represents the Open, Limited, and Closed acreages determined by the Monticello Field Office (FO) ID Team (as of September 2005).

OHV Designation Categories on BLM Lands (1,783,123 acres)	Number of Acres [1]			
	No Action [RMP 1991]	Alternative B Conservation	Alternative C Balanced	Alternative D Commodity
Open	611,310	0	2,311	2,311
Limited – to designated	218,780	1,352,053	1,354,784	1,780,807
Limited use-seasonal	540,260	NA	NA	NA
Limited – to existing	570,390	NA	NA	NA
Closed	276,430	431,065	426,025	0

* Numbers are subject to change depending on any changes made during the on-going alternative evaluation process.

[1] Acres may be additive because of overlap.

The BLM must distinguish between land use plan and implementation decisions in all proposed RMP documents and related decisions, and clearly describe for the public the administrative remedies for each type of decision (BLM H-1610-1, Appendix E, Page 1). The protest procedures in 43 CFR 1610.5-2 provide the public an administrative review of the State Director's proposed land use plan decisions. The BLM Director determines through this process whether the State Director followed established procedure, considered relevant information in reaching proposed decisions, and whether the proposed decisions are consistent with BLM policy, regulation, and stature (BLM H-1610-1, Appendix E, Page 1).

Implementation – Selection and identification of individual roads and trails within the travel plan system are implementation level decisions.

The following table represents a comparison of the number of miles of routes that were evaluated under the Total Resource Area (all ownership and all agency's lands) compared to the Monticello Field Office area (BLM and State lands), and the number of miles of Travel Plan routes spread across a range of alternatives [as of September, 2005].

Description of Mapped Area [1]	**Alternative B [2] Conservation**	**Alternative C [2] Balanced**	**Alternative D [2] Commodity**
Highways, B, C and D roads, and trails within the Resource Area Boundary – including all ownership and all agencies (4,582,997 acres)	5,698 miles	6,171 miles	6,452 miles
Total number of GIS lines (segments)	4,918 GIS lines	5,440 GIS lines	5,814 GIS lines
Total length of closures in miles over the number of GIS lines (segments)	780 miles 1,083 GIS lines	320 miles 563 GIS lines	45 miles 119 GIS lines
******Highway, B, C and D roads, and trails within BLM and State lands (1,987,439 acres)	2,984 miles	3,433 miles	3,712 miles
Total number of GIS lines (segments)	2,337 GIS lines	2,859 GIS lines	3,233 GIS lines
Total length of closures in miles over the number of GIS lines (segments)	780 miles 1,083 GIS lines	320 miles 563 GIS lines	45 miles 119 GIS lines
***D roads and trails within BLM and State lands (1,987,439 acres)	1,778 miles	2,229 miles	2,508 miles
Total number of GIS lines (segments)	2,108 GIS lines	2,630 GIS lines	3,004 GIS lines
Total length of closures in miles over the number of GIS lines (segments)	780 miles 1,083 GIS lines	320 miles 563 GIS lines	45 miles 119 GIS lines

[1] B roads are regularly maintained; surfaces can be natural, paved, gravel; funded by State of Utah for maintenance; C roads are city (Monticello and Blanding) roads; D roads are all natural surface, and not on a maintenance schedule though they can be maintained, and not funded by the State.

[2] All mileages include a few segments at the northern field office boundary area that are on Monticello FO land but are managed by the Moab FO.

** This set of calculations represents the Monticello Field Office Travel Plan figures.

*** D roads and trails represent the portion of the travel plan that will be central to implementation signage.

Implementation decisions may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 CFR 4, and Form 1842-1.

Management Common to All (MCA) alternatives include the following travel plan related action items as developed by the ID Team in preliminary alternative development meetings:

- In areas limited to designated routes, only designated routes are open to motorized use.
- There will be no cross-country travel for game retrieval or antler gathering in areas designated as limited or closed. This policy is consistent with the policies of all the National Forests in Utah, none of which allow this type of off-road use.
- Any fire, military, emergency or law enforcement vehicle when used for emergency purposes is exempted from OHV decisions.
- Wilderness Study Areas are to be either designated as limited or closed to OHV use, and must be managed and monitored to comply with the interim management policy non-impairment standard.

Management of the BLM Monticello Field Office Travel Plan will follow the decisions made in the signed Resource Management Plan (RMP) / Record of Decision (ROD).

N.4 AUTHORITY AND GUIDANCE

- Federal Land Policy and Management Act (FLPMA), 43 U.S.C 1701 – Land use plans and revision should be based on principles of multiple use and sustained yield.
- National Environmental Policy Act, (NEPA), 42 U.S.C. 4321.
- Executive Order No. 11644, Feb 8, 1972 - This order established criteria by which federal agencies were to develop regulations for the management of ORVs on lands under their management. Agencies are to "monitor the effects" of ORV use on their public lands and, "on the basis of the information gathered, they shall from time to time amend or rescind designation of areas for ORV use "as necessary to further" its policy.
- Executive Order No**.** 11989, May 25, 1977 – This order modified ED 11644 – This order authorized agencies to adopt a policy that particular lands can be considered closed to ORVs once it is determined that OHV use "will cause or is causing considerable adverse effects" to particular resources.
- Executive Order No. 12898, 1994 – Indicates that Federal planning efforts should give consideration to how plans will affect local economies.
- 43 C.F.R. Part 8340 – the ORV Regulations – Establish criteria for designating lands as open, limited, or closed to the use of ORVs.
- Archeological Resources Protection Act (ARPA), 1979, as amended. And other Cultural protection laws and regulations.
- Taylor Grazing Act, 43 U.S.C. 315a.
- Endangered Species Act, 16 U.S.C. 1531 – Federal agencies shall give consideration to ensure agency actions do not jeopardize the continued existence of any endangered species.
- Land and Water Conservation Fund Act, 16 U.S.C. 460 1-6a.
- National Historic Preservation Act, as amended, 1966.
- Wild and Scenic Rivers Act, 16 U.S.C. 1281c.
- National Trails System Act, 16 U.S.C. 1241.
- U.S. Department of the Interior, BLM, Interim Management Policy for Lands Under Wilderness Review, H-8559-1.

- Resource Management Plan, BLM San Juan Resource Area, March 1991.
- IB WO 99-181, OHV Use in WSAs.
- IM UT 2001-090, Implementation of Utah Recreation Guidelines.
- IM WO No. 2004 – Clarification of Cultural Resource Considerations for Off-Highway (OHV) Route Designation and Travel Management.
- IM WO 2004-005, Clarification of OHV Designations and Travel Management in the BLM Land Use Planning Process.
- IM UT 2004-008, Clarification of OHV Designations and Travel Management in the BLM Land Use Planning Process.
- IM UT 2004-061, Designating Off Highway Vehicle Routes in the Land Use Planning Process.
- OHV – National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands, USDI, BLM, January 2001.
- BLM, Indian Creek Recreation Corridor Environmental Assessment (draft), Monticello Field Office, Monticello, Utah, 2005.
- Standards for Rangeland Health of BLM Land in Utah, May 1997.

N.5 Travel Plan Designation Process

A goal of the BLM Monticello Field Office planning process is to develop, with its cooperators, a travel plan that provides access to resources and resource areas. The goals and objectives of this travel plan apply to all areas of travel management including resources access, appropriate recreation opportunities that at the same time protect public land resources, ensuring public safety, minimizing conflicts among the various public land uses, and providing for support of the local economy (see also Section N.9.).

N.5.1 History of OHV BLM Guidance

The 1991 BLM San Juan Resource Area RMP included designations for Open, Closed, and Limited OHV areas. Under the Limited category there were two sub-categories: 1) limited to existing roads and trails, and 2) limited to designated roads and trails. Over the subsequent decade, due to lack of funding and staff, the actual on-the-ground implementation of designations either by mapping or signing of routes was never completed.

In the current RMP process, state and national guidance for OHV use and travel planning in the sub-categories under the Limited designation has changed. Designating Open, Closed, and Limited areas for OHV use continues to be mandated, but under the Limited category only the 'limited to designated roads and trails' sub-category is recommended. The designation of the sub-category called 'existing roads and trails' is no longer an option. Eliminating the 'existing roads and trails' sub-category prevents confusion and enforcement problems concerning new unauthorized routes being created, and then used by the public because they are then 'existing'.

Designation of routes under the Limited category provides a purposefully designed and clearly delineated travel network, reduces route proliferation, and facilitates travel management and law enforcement.

By policy (IM No. 2004-005) BLM also recommends that as many roads as possible be designated under the Limited category within the RMP planning process. However, the following guidance applies if all routes cannot be designated within the plan:

> If complexity, controversy, or incomplete data make it impossible to complete the selection of a road and trail network for any area designated-as-limited within reasonable time frames or budget availability, the BLM will perform the selection process for all limited areas that can be completed. For any limited areas or sub-area that cannot be completed in the RMP, the BLM will, to the extent possible:
>
> - Incorporate a map of a preliminary road and trail network, including known roads or trails that are expected to be included in the final network;
> - Define short-term management guidance for road and trail access and activities, including interim management guidelines for proper identification of the preliminary road and trail network, including signing and maintenance of open roads and trails;
> - Outline additional data needs and a strategy to collect needed information;
> - Establish a clear planning sequence, including public collaboration, criteria and constraints for subsequent road and trail selection and identification;
> - Produce a schedule to complete the limited area or sub-area road and trail selection process. Normally, this process should not exceed five years, and
> - Install signs, and in some cases, construct barriers or perform restoration on closed roads and trails. (IM No. 2004-005).

Plan maintenance and changes to the route designation plan are addressed in this document in Section N.13.

N.5.2 INTERDISCIPLINARY (ID) TEAM PROCESS

Guidance for developing a Travel Plan includes utilizing the ID Team approach (8342.21A and 43 CFR 1601.1-3). The following individuals participated in the completion of this plan.

Monticello FO Interdisciplinary (ID) Team Members and Cooperators

Name	Resource /Organization
Andy Boone	Co-lead, GIS, Mapping
Maxine Deeter	Co-lead, Lands & Realty, Visual Resource Management
Mark Lambert	Co-lead, Planning, WO
Todd Berkenfield	Co-lead, Planning, WSRs, ACECs
Sandra Meyers	Field Office Manager
Nick Sandberg	Range, Assistant Field Manager
Gary Torres	Planning Project Manager, NEPA Coordinator
Paul Curtis	Range, Riparian/Wetlands, Water
Summer Schulz	Vegetation, Weeds, Range, Woodlands
Tammy Wallace	Wildlife, Air Quality
Brenda Dale	Fire and Fuels Management

Monticello FO Interdisciplinary (ID) Team Members and Cooperators

Name	Resource /Organization
Marie Tuxhorn	Law Enforcement
Jim Ragsdale	Law Enforcement
Ted McDougall	Minerals, Geology
Jeff Brown	Minerals, Hazardous Materials
Scott Berkenfield	Recreation Supervisor, Wilderness
Brad Colin	Recreation
Linda Richmond	San Juan River Ranger, Recreation
Mark Meloy	San Juan River Ranger, Recreation
Laura Lantz	Kane Gulch Ranger, Recreation
Scott Edwards	Kane Gulch Ranger, Recreation
Marilyn Low	Permits, Recreation
Nancy Shearin	Cultural, Paleontology
Jim Carter	Cultural - BLM
Ed Scherick	San Juan County - Planner
Evan Lowry	San Juan County, Planner
Ben Nielson	San Juan County, Assistant Planner

Between October of 2003 and August of 2005, the ID Team held 31 meetings specifically concerning the travel plan, and 13 coordination meetings with cooperators, other agencies, and with groups that had presented travel routes proposals [meeting minutes are in the RMP Administrative Record].

N.6 IDENTIFICATION OF ISSUES

N.6.1 SCOPING, ISSUES, AND PUBLIC INPUT

OHV/Travel issues were identified by BLM resource specialists in the pre-plan, through the Public Scoping process for the Monticello/Moab Field Offices RMP, by input from the public in response to Planning Bulletin #3 -- Request for Route Data, and through proposals for travel routes presented to BLM from organizations.

The BLM staff identified the following issues concerning travel in the field office:

- Use designations in the current RMP are outdated and do not address the current level of use.
- Need to incorporate BLM OHV National Strategy and Utah OHV Strategy in planning efforts.
- OHV designations need to be reviewed and revised as necessary to protect other resources.
- Maps need to be developed to identify uses of competing resources, and to show the public where OHV use is allowed.
- Implement designated routes on-the-ground through signing and maps.
- Make certain that OHV designations are consistent with Wilderness Study Areas (WSAs).

- Coordinate with adjacent field offices to match OHV designations.
- Dependence of local industry on public lands.
- Increased recreation use and demand.
- Conflicts between OHV use and other resources including riparian, wildlife, grazing and cultural.
- Conflicts between user groups such as, non-motorized and motorized users, and river runners and OHV users, commercial and private users, OHV use and unregulated camping.

Comments received from public scoping were placed in one of three categories:

- Issues to be addressed in the resource management plan (RMP) – Specific to this travel plan, these are the OHV/Travel issues considered in the Monticello Field Office;
- Issues that can be addressed through policy or administrative actions; or
- Issues beyond the scope of the plan: The RS 2477 issue is beyond the scope of this plan (see Section N.7).

Comments from the six public scoping meetings included 440 comments on recreation and OHV/Travel or 35% of the total 1,250 comments. Comments received in letters concerning the Monticello Field Office OHV and Travel program totaled 3,454 or 39% of the total comments, with the remaining 61% of the comments addressing the 14 remaining resource or planning categories (Moab and Monticello RMP Revisions, Scoping Summary, BLM, July 2004).

There is a high level of interest and concern about travel and OHV use in the Monticello Field Office planning area. The increase in recreational vehicle (OHV) use is indicated by the increase in vehicle registrations in San Juan County from 295 vehicles in 1998 to 1,039 vehicles in 2004, a 350% increase (Utah OHV Transactions by County and Fiscal Year, 2005).

Input from Public Scoping both through the public meetings (June 4, 2003 through December 31, 2004), and through input responses to Planning Bulletin # 3, identified the following issues, many of which are similar to those noted above:

- How can increased recreation use, especially motorized vehicle use, be managed while protecting natural resource values?
- Which areas should be designated as open, limited or closed to OHV use, and which routes should be designated within the limited category?
- What types of recreation travel should be available on designated routes and under what limitations?
- Where could adaptive management be applied in response to unacceptable resource impacts?
- How should recreational uses be managed to limit conflicts with other recreational users?
- How should camping, human waste, fires, and wood collection be managed? [in terms of OHVs]
- How should conflicts with other resource uses be reduced?
- What management actions should be implemented to mitigate damage caused by recreational uses, including vehicles, on other resources and sensitive areas, especially riparian areas?
- How should recreation in the planning areas be managed to ensure public health and safety?
- Where and under what circumstances should permitted recreation uses be available?

- What types of recreational facilities and uses should be available, and what limitation should be required?
- Where can the recreation opportunity spectrum (ROS) be applied?

N.7 Developing Planning Criteria

Considerations of both social and physical elements help to define the criteria for a travel plan. The social aspects include public demands, historical uses, existing rights-of-way, permitted uses, public access, resource development, law enforcement and safety, conflicts between existing or potential uses, recreation opportunities, local uses, cultural and economic issues. Physical aspects include the terrain, soils, water and watersheds, connectedness of routes, special designations [ACECs, WSAs], demands for specific types of vehicle use, and manageability considerations.

General planning criteria for the Resource Management Plan (RMP) process includes:

- Decisions - All decisions made in the RMP will only apply to public lands managed by the BLM.
- Existing Rights – The plan recognizes current, valid existing rights.

Specific to the travel plan, the criteria include:

- National OHV Policy - Decisions regarding OHV travel will be consistent with the BLM's National OHV Strategy.
- R.S. 2477 - No regulations to either assert or recognize R.S. 2477 rights-of-way currently exist. While R.S. 2477 claims have been asserted by San Juan County, it is beyond the scope of this document to recognize or reject R.S. 2477 assertions, and this issue is not addressed further in this Travel Plan. Nothing in this document is intended to provide evidence bearing on or addressing the validity of any R.S. 2477 assertions. At such time as a decision is made of R.S. 2477 assertions, BLM will adjust travel routes accordingly, where necessary.
- Access to Utah School and Institutional Trust Lands Administration (SITLA) State Sections - BLM is required to provide access to State lands.

N.7.1 OHV Designation Criteria

Policy guidance in BLM Manual 8343.1 lists the following protection criteria that must be met by BLM in the travel planning process:

1. Cultural and Natural Resources – Designations must minimize damage to all cultural and natural resources. Examples of these include, but are not limited to, the following: historical and archeological sites, soil, water, air, vegetation, and scenic values.
2. Wildlife – Designations must minimize harassment of wildlife and/or significant disruption of wildlife habitat.
3. Endangered Species – Special attention must be given to protect endangered or threatened species and their habitat.
4. Wilderness – Designations must not impair the wilderness suitability of lands under consideration for inclusion in the wilderness system.

User Access Requirements – the following criteria are used to assure adequate consideration for the requirements for each resource activity (i.e., minerals, range, forestry, recreation, etc) as they relate to access needs:

1. Operational needs – designations must consider user access requirements for inventory, exploration, use supervision, maintenance, development, and extraction of public land resources as well as maintenance of facilities on public lands.
2. State and Private Land – designations must consider the access and use needs for areas and trails located within intermingled State and private land.

Public Safety – The designation of areas and trails for ORV use must be completed so as to promote public safety, recognizing that challenge and risk are desirable factors for some uses.

1. Hazards – Designations must minimize or eliminate ORV use in areas of extreme natural or man-made hazards unless such hazards can be mitigated.
2. Safety Factors – Designations must separate uses in situations where public safety factors present unacceptable risks (e.g., rifle ranges, children's play areas, mines, etc.).

Conflict Resolution – The designation of areas and trails for ORV use must assure full consideration of the multiple-use values of public lands consistent with the following criteria:

1. Balanced Approach – Designations must provide as wide and as balanced an approach to public land access as possible to protect public land resource values while at the same time meeting user access needs.
2. Other Uses – Designations must minimize conflicts between ORV use and other existing or proposed uses of the public lands.
3. Compatibility – Designations must ensure the compatibility of ORV uses with existing conditions in populated and other sensitive areas by taking into account noise, air pollution, and other factors of the human environment.

N.7.2 Monticello Field Office Criteria for Travel Plan

Criteria for travel planning include Standards for Rangeland Health; establishing purpose and need (P/N) for routes per above mentioned guidance; defining conflicts between resources; defining conflicts among users; evaluation and consideration of routes in terms of WSAs; administration and emergency uses; and access to SITLA lands.

Standards for Rangeland Health of BLM land in Utah relate to all uses of public land, including recreation, and describe natural resource conditions that are needed to sustain public land health. The Standards encompass upland soils; riparian systems; plant and animal communities; special, threatened, and endangered species; and water quality. The Rangeland Health Standards provide guidance for management of resources.

N.7.2.1 Purpose and Need

The methodology used during the route designation ID Team meetings to develop a well-designed travel network was a combination of guidance received from the BLM State Office (SO) and Washington Office (WO):

- IM UT 2004-061, states that Field Offices should begin the route designation process with existing inventory and data, and then determine purpose and need (P/N) for the existing routes.
- IM WO 2004-005, recommends choosing individual roads and trails for designation, "rather than using inherited roads and trails," because most existing roads "were created by use over time, rather than planned and constructed for specific activities and needs."

The P/N for travel routes are examined in terms of the existing situation on-the-ground in terms of why the route is currently utilized. The Monticello Field Office considered the following criteria for routes in the travel plan:

- Desired future conditions
  - Potential for adverse or positive economic impacts
  - Resource and use conflicts
  - Standards for Public Land Health and Guidelines for Recreation
  - Management for BLM Lands in Utah
- Public health and safety
  - Abandoned Mine Lands
  - Hazardous Materials / locations
- Access
  - Routes identified in guide books
  - Scenic overlooks
  - Routes to SITLA lands
  - Elimination of route redundancy
  - Special Recreation Management Areas (SRMAs)
  - Special designation prescriptions including Areas of Critical Environmental Concern (ACECs), Wilderness Study Areas (WSAs), and Wild and Scenic Rivers (WSRs)
- Cultural and Paleontological resources
- Fire considerations
- Mineral resources / Energy development
- Rangeland standards
- Recreation Opportunities / Experiences including ROS
- Watershed resources
  - Erosive Soils
  - Saline Soils
  - At-risk watersheds
  - Municipal watersheds
- Vegetative resources
  - Relict vegetations
  - At-risk vegetative sites
- Wildlife resources
  - Special Status Species

  - Crucial winter habitats
  - Rutting, calving and fawning habitat
  - Raptor nesting locations
  - Migratory Bird Corridors
- Woodlands resources
- Visual / Scenic resources

N.7.2.2 MITIGATIONS

Mitigations that can be utilized to address conflicts could include:

1. The season and timing of use;
2. The types of vehicle use, motorized and non-motorized;
3. Re-routing of segments; and
4. Other methods of travel.

N.7.2.3 ROUTE NUMBERS

San Juan County has route numbers for each road in their inventory. B roads are identified with three-digits (BXXX), and D routes with four-digits (DXXXX). This system has been carried forward from the county baseline data by the BLM Monticello Field Office in developing their travel plan. Because many of the routes are already marked on the ground by the county, for consistency in developing maps and information for the public, and because BLM Monticello Field Office does not have any BLM-specific roads, the field office has chosen to use the same numbers as the county.

In collaboration with the Manti-LaSal National Forest, which has its own numbering system, BLM and San Juan County have suggested that the BLM provide their joint numbering system with the county as an adjunct to that of the National Forest for signing routes on-the-ground. It is possible that routes on the National Forest will bear two different numbered signs, one for the forest and one denoting the route number of the county route on a separate post. These two systems will be incorporated into the implementation plan in mapping and written public information.

N.7.2.4 ROUTE DESIGNATIONS IN WILDERNESS STUDY AREAS (WSAS)

Information Bulletin No. 99-181 BLM directs BLM to comply with the wilderness 'non-impairment' mandate (FLPMA, Section 603(c)). BLM must monitor and regulate the activities of off-highway vehicles in the Wilderness Study Areas (WSAs) to assure that their use does not compromise these areas by impairing their suitability for designation as wilderness.

The BLM's Off Road Vehicle Regulations (43 CFR 8342.1) require that BLM establish off-road vehicle designations of areas and trails that meet the non-impairment mandate. It is the BLM's policy that cross-country vehicle use in the WSAs does cause the impairment of wilderness suitability. Thus, the BLM should establish off-road vehicle designations in WSAs that limit vehicular access to boundary roads, or "ways" existing inside a WSA that were identified during the inventory phase of the wilderness review (in 1999 for the Monticello FO).

Travel routes within WSAs:

- "Ways" – a trace maintained solely by the passage of vehicles which has not been improved and/or maintained by mechanical means to ensure relatively regular and continuous use (IMP, Glossary, p. 5). Existing way – a "way" (see above) existing on the date of the initial wilderness inventory (IMP, Glossary, p. 1). "Ways" may be designated in a travel plan with rationale for their designation.
- Intrusions – are routes that illegally intrude into WSA boundaries, i.e., they are routes that have developed since [were not present at] the time of the wilderness inventory. There are three in Butler Wash WSA, one in Cheesebox WSA, and one in Indian Creek WSA. These intrusions are listed as closed in all alternatives.

The categories of routes on a large scale map that appear to be within a WSA but are not within the on-the-ground WSA boundary are:

- Cherry-stem route – is usually a dead-end that can form part of a WSA boundary. The narrow area within the cherry-stem is outside of the WSA due to the nature of the route detracting from the wilderness character of the WSA. There are eight cherry stemmed routes in the Monticello travel plan.
- Boundary, or as listed in the Monticello data, a dividing route. This refers to routes that lie at the boundary of WSAs but are not within that boundary. In the Monticello FO there is one such route; it runs between Fish and Road WSAs and is the boundary for each.

MFO received direction from the UTSO on September 17, 2004 (phone conversation with UT OHV Coordinator; Monticello GIS specialist was also present) to avoid designating "ways" in WSAs. A very reasonable and clear justification must be made for "ways" that BLM proposes to designate. This did not pose much of a conflict for Monticello FO, as the ID Team had earlier determined that the majority of WSAs in the resource area would be closed to motorized use. However, a limited number of "ways" were designated in Cedar Mesa WSAs to provide access to trailheads, and to stay in compliance with existing agreements with San Juan County (i.e., route to Moon House).

N.7.2.5 Administrative Access and Use

Routes considered for Administrative Use Only were discussed by the ID Team. Several routes proposed in the travel plan including routes to ponds and other range improvements, guzzlers, BLM equipment, etc., were considered under the administrative category. MFO could reserve the right to allow travel on these routes to permittees, BLM employees, or whomever it deemed appropriate on a case-by-case basis.

The ID Team discussed whether these routes should either be designated for use or closed. Keeping routes open for administrative use means that the routes might need to be maintained for travel use even though use might be sporadic. In the current listing of routes, 33 routes covering approximately 36.8 miles are under the Administrative Closure category.

N.7.2.6 Emergency Uses

By regulation any fire, military, emergency or law enforcement vehicle when used for emergency purposes is exempted from OHV decisions. Emergency uses in WSAs are covered under the IMP, Section I.B.11 and 12.

N.7.2.7 EMERGENCY LIMITATION OR CLOSURE

Whenever the authorized officer determines that OHV use will cause or is causing considerable adverse effects on resources (soil, vegetation, wildlife, wildlife habitat, cultural, historic, scenic, recreation, or other resources), the area must be immediately closed to the type of use causing the adverse effects (43 CFR 8341.2). Such limitation or closures are not OHV designations.

N.8 INVENTORY - DATA AND INFORMATION COLLECTION

N.8.1 SAN JUAN COUNTY – ROUTE DATA

MFO began the process following the Utah BLM State Office (UTSO) approach. In the initial stages of the planning process, it was agreed that San Juan County's route inventory would serve as a baseline for route data since it was the most complete inventory for the field office area. Because of its expertise and local knowledge on this topic, San Juan County's participation in the route designation process is critical in order to develop a viable and well-designed travel network. Monticello Field Office used a sampling of the San Juan County route data to verify the validity of the

> All of Monticello Field Office area lies within San Juan County. Field office staff has taken a systematic approach to verifying the county road data by relying on statistical sampling, [mapping,] and aerial photography wherever possible. The purpose of the road verification process is not to draw conclusions as to the condition, extent of use, or function of these road segments, but simply to verify that they exist." (San Juan County Road Verification Process).
>
> BLM used internet statistics software (found at www.azplanit.com/ samplesize.htm) to determine how many road segments would need to be verified in order to establish a 95% confidence interval and a maximum acceptable margin of error of 5 percentage points that the County road data was accurate. The software indicated that a minimum sample size would require a selection of 344 segments.
>
> All road segments were selected randomly. To accomplish this, staff used a random selection tool extension in ArcView 3.3 GIS software to select 344 segments.
>
> …Field Office staff could positively verify the existence of 343 of the 344 (or 99.7%) segment sample. One segment was not verifiable by DOQ (digital ortho quad [digital aerial photograph]) because it was located along the edge of the photograph. This segment was found on the 24k topographical map, however. Since the segments examined were a true random sample of the population of interests, BLM can be at least 95% confident that the September 27, 2001 inventory data provided by San Juan County is 99.7% accurate (Memorandum, MFO Travel Plan Development, October 8, 2004, by Bill Stevens, Moab BLM Office).

MFO also chose initially to utilize the County's purpose and need (P/N) determinations for the routes in the inventory. This decision was based on what MFO saw as the logistical problem of verifying P/N for every one of the thousands of segments in the County inventory. A number of

county P/N determinations, however, were based merely on the existence of a route on the ground. When it delivered its inventory to BLM, San Juan County asserted that "all roads go somewhere and serve a purpose. Otherwise, they would not be there".

From a BLM standpoint, this statement in itself is insufficient evidence for P/N, and can be construed as being inconsistent with Washington Office guidance. In order to develop a logical travel plan from existing routes, P/N must be determined from existing use (IM UT 004-061, pg. 3). Otherwise, routes that were redundant, created for one-time use such as old seismic lines, fire lines, and chaining routes, and which receive little to no current use, remain part of the travel system simply because there is a mark on the ground. Often these routes serve no current purpose. It is here that San Juan County and BLM differed on the basis for some determinations of P/N.

It is also important to consider the distinct purposes for which the County's inventory was developed, and for which the BLM is developing a travel plan for the Monticello resource area. Reviews of BLM P/N is tied to evaluation of routes based on access, resource uses, and use conflicts.

Coordination with the County has been on-going; county planners were present at meetings regarding OHV area designations and have been involved with the discussion of route designations under the Limited category listed in the range of alternatives.

In a letter dated February 9, 2005, San Juan County noted that in driving the county for their road inventory data gathering, they recognized numerous travel junctions [points] (2,965 including mining roads, routes to oil wells, scenic vistas, state lands, private lands, wildlife guzzlers, and other uses]), which did not currently have a purpose and need. The county identified these with GPS point data but did not drive them or collect any line data.

They further stated that as they drove the various routes in the county, they "became aware of the many activities occurring along the roads, and realized that only a portion of the purpose and need activities was captured." San Juan County notes that after working with the BLM ID Team, they concluded that the additional collected data would be useful not "only in your [BLM] planning efforts but the overall management of your field office", and provided BLM with the data. They also noted that they made no claim that their data represents all the activities occurring, but only a small portion.

N.8.2 Route Data Input from the Public

On November 1, 2003, MFO requested from the public (Planning Bulletin #3, Request for Route Data) substantive and verifiable information on routes within the planning area beyond what was in the San Juan County inventory. BLM received additional route information from three individuals and two citizen groups.

N.8.2.1 Data submitted by Ber Knight

The data submitted by Mr. Knight included approximately 100 road segments covering approximately 104 miles of roads. The data submitted included GPS data of routes that were not a part of the County road data. These routes range from approximately 0.1 mile to 3 miles in length. The data has been examined by field office personnel and all of the routes in the data set

were confirmed to exist when compared with satellite imagery and USGS 1:24,000 scale topographic maps.

Knight's submittals were later determined to have no purpose and need. All of the "new" route information fell under one of the following categories, leading to the determination of no purpose and need:

- Route redundant to more established routes;
- Route leading to no significant location or feature and receiving very little to no current use; and/or
- Route developed due to one-time use, receiving very little to no current use (old seismic lines, fire line, chaining route, etc.).

N.8.2.2 Data submitted by Robert Norton and Robert Telepak, MD

Submittals from individuals Misters Robert Norton and Telepak were examined by field office personnel and determined not to be new. All routes identified were already part of the County's inventory; no further analysis for route verification was needed or conducted.

N.8.2.3 Data submitted by San Juan Public Entry and Access Rights, Inc (SPEAR), [previously Southeast Utah Land Users Association (SULU)]

Data provided by SPEAR/SULU, under the name The Canyon Rims Trail System Basic Master Plan, includes approximately 535 miles of roads which form loop systems throughout San Juan and Grand Counties. Most of the roads in the proposal are included in the San Juan County road data. Loop systems are mainly along County roads with some parts of the loops including trails and potential new routes. The plan proposed new construction of connector routes on Forest Service, National Park, and BLM lands.

The question arose concerning the evaluation of the SPEAR Canyon Rim Trails Systems proposal as to whether the entire system would be considered as a whole including proposed constructed connections, and routes that were not included in the travel plan, or whether the SPEAR proposal would be compared to the routes designated in the Monticello Field Office travel plan for the portions that were coincidental. It was decided that the latter comparison would be completed.

BLM agrees that having a route system for ATV travel is a component of the travel plan. However, evaluating the potential construction of connector routes, and the evaluation of route proposals through some specific resource areas would require site-specific NEPA. Therefore, the BLM cannot evaluate the proposal in its entirety in the current planning process.

Maps presented at the February 2005 meeting by the SPEAR group were derivations of the map presented during scoping for the RMP. Also brought to that February meeting were 7 ½ quad maps with markings indicating additional routes and connector routes that SPEAR would like to see included in their planned system. These, as noted above, will be considered on a site-by-site basis activity-level planning.

BLM will complete their travel plan process and in so doing will compare the BLM designated routes with those proposed by SPEAR. In the planning process BLM will make note of the SPEAR routes that are coincidental to the BLM travel plan routes in the DEIS (a summary and

comparisons of BLM travel plan to the SPEAR routes can be viewed at the Monticello FO). The BLM will work with San Juan County for SPEAR proposals in the implementation phase of the travel plan to consider on a site-specific basis NEPA process which routes, connectors, and staging areas are consistent with the goals and objectives of the resource management plan. BLM would recognize infrastructure additions under the Title V process, and will compare the proposed network of routes based on resource evaluations through the NEPA process (see Section N.9.4.2.4).

N.8.2.4 DATA SUBMITTED BY THE REDROCK HERITAGE COALITION (RRHC)

Data submitted by the Redrock Heritage Coalition was in the form of a route designation plan, the "Red Rock Heritage Proposal for Sustainable Economies and Ecosystems". The Redrock Heritage proposal is related to the Red Rock Wilderness Proposal in that the route designation plan limits available routes in areas proposed as wilderness. Available routes are existing routes that are included in the San Juan County road data. When compared with the county's data, the RRHC proposal calls for approximately 1,796 fewer route miles, with approximately 42 fewer miles of Class B roads and 1,830 fewer miles of Class D roads.

This proposal basically limits travel to most existing County B Roads and 45% of existing County D Roads. The RRHC proposal is based on the reasoning that few places exist in the County where one can be more than 0.5 miles from a motorized route, thus, the RRHC proposal increases the opportunity for 'quiet users' to be further away from motorized routes.

BLM analyzed the specific route closures that RRHC proposed in their submittal of September 15, 2004, and made preliminary suggestions to the travel plan alternatives as appropriate (see Section N.9.4.2.5). RRHC noted that 'quiet [user] vs. motorized user opportunities are not currently balanced in this resource area', which is what RRHC attempts to correct in their proposal. This information has been taken into account in the conservation and balanced alternatives (see BLM's Comment Analysis on RRHC Proposal, April 2005, and RRHC's specific route recommendations analyzed by BLM, both in the Administrative Record).

A comparison of the RRHC proposal and the routes in Alternatives B and C will be made by the BLM staff. However, the data provided by RRHC included the entire resource area including Forest Service lands, National Park Service lands, and Navajo Nation lands. It took some time to re-digitize the data into the BLM shape system to reflect BLM lands, and then make the comparison between what RRHC proposes and the Monticello Field Office travel plan proposed alternatives. A summary and comparisons of BLM travel plan to two organizations' proposals can be viewed at the Monticello FO. This comparison was completed before the draft alternatives were completed, and will be analyzed in the DEIS (see Section N.9.4.2.5).

N.8.3 TRAVEL PLAN EVALUATION

A meeting with the San Juan County was held October 8, 2004 to review the process described in this document. It was planned that specific details regarding designated routes would be sent to the County at a later date but prior to any scheduled cooperators' meetings. As mentioned above, the field office's P/N determinations, while made by specialists familiar with the route or area in question, were not field checked, and needed the County's input to verify several of BLM's P/N determinations. Over the ensuing four months, BLM and county planning

representatives worked together to share this needed information and comments on the preliminary draft travel plan.

N.9 MONTICELLO FIELD OFFICE TRAVEL PLAN DEVELOPMENT

N.9.1 GOALS AND OBJECTIVES

Goals are statements that describe a desired condition to be achieved some time in the future. Goals are normally expressed in broad, general terms, without any specific date for attainment. The Travel Plan goal is to provide opportunities for a range of motorized access and recreation experiences on public lands while protecting sensitive resources and minimizing conflicts among various users.

Objectives are concise time-specific statements of measurable planned results that move toward pre-established goals. Objectives help define the precise steps to be taken and the resources to be used in achieving identified goals. BLM policy and regulations state that:

- All BLM lands will be designated Open, Limited, or Closed. Limited designation includes designated routes, seasonal routes, and or type of vehicle routes.
- OHV designations for wilderness study areas (WSAs) must be Limited or Closed.
- Implementation planning will be completed for the Monticello Field Office Travel Plan.

N.9.2 POLICY: BLM OHV DESIGNATIONS

OHV Designation Categories – BLM National Strategy mandates that all public lands administered by the BLM must be designated as Open, Limited, or Closed.

- Open – The BLM designates areas as "open" for intensive ORV use where there are no compelling resource protection needs, user conflicts, or public safety issues to warrant limiting cross-country travel.

  However, motor vehicles may not be operated in a manner causing or likely to cause significant, undue damage to or disturbance of the soil, wildlife, wildlife habitat improvements, cultural or vegetative resources or other authorized uses of the public lands (see 43 CFR 8341).

- Limited – The "limited" designation is used where ORV use must be restricted to meet specific resource management objectives. In the current guidance context, this means limited to designated roads and trails, i.e., a route network designated by the BLM in its RMP.
- These routes may also be limited to:
  1. A time or season of use depending on the resources in the area (i.e., Threatened and Endangered Species' habitat or nesting areas, crucial winter ranges, etc.); and/or
  2. Types of vehicle use (ATV, Motorcycle, four-wheel vehicle, etc.).
- Closed – The BLM designates areas as "closed" if closure to all vehicular use is necessary to protect resources, ensure visitor safety, or reduce resource or use conflicts. Access by means other than motor vehicle access is generally allowed. The Field Manager may allow motor vehicle access on a case-by-case basis or for emergencies.

Monticello Field Office –Draft Open, Limited and Closed Areas (Acreages as of September 2005)

OHV Designation Categories on BLM Lands (1,783,123 acres)	Number of Acres [1]			
	No Action [RMP 1991]	Alternative B Conservation	Alternative C Balanced	Alternative D Commodity
Open	611,310	0	2,311	2,311
Limited – to designated	218,780	1,352,053	1,354,784	1,780,807
Limited use-seasonal	540,260	NA	NA	NA
Limited – to existing	570,390	NA	NA	NA
Closed	276,430	431,065	426,025	0

* Numbers are subject to change depending on any changes made during the on-going alternative evaluation process.

[1] Acres may be additive because of overlap.

N.9.3 ROUTE DESIGNATION ID TEAM MEETINGS

Six ID Team meetings to address route/resource conflicts and route designation were held August 26, 27, and September 15, 21, 22, 24, 2004. On-going meetings (20 additional ID Team and 11 coordination meetings) were also held during the fall of 2004 and in 2005 concerning route selection for the range of alternatives. The purpose of the route designation ID Team meetings was two-fold:

- Gather input from ID Team on conflicts identified and mitigation proposed by each resource specialist. If there are conflicts with resources (e.g., popular overlook on route proposed to be closed for protection of wildlife habitat), these conflicts are discussed and resolved during the meeting, and a final proposal for the balanced alternative is established.
- Develop a thoughtfully, purposefully designed system of designated routes that fulfills the management goals and objectives for the resource area.

N.9.4 ROUTE DESIGNATIONS FOR LIMITED AREAS

A majority of the resource area was proposed to be designated as "limited" to OHV use in the four action alternatives. By policy BLM is required to designate individual routes within the "limited" areas as part of the RMP process. This is the implementation portion of the Travel Plan process and includes identifying roads and trails that will be available for access and public use, and specifying the limitations, if any, placed on use (see Monticello Field Office Draft Alternative Matrix, September 19, 2005).

N.9.4.1 POTENTIAL CONFLICT IDENTIFICATION BY AREA

The Monticello Field Office ID Team agreed to utilize the map and boundaries of the Field Office Law Enforcement Patrol Sectors as the baseline polygons for discussing and defining areas for designations, and potential conflicts, both resource and user conflicts.

Three ID Team meetings to address OHV area designations were held July 1, 6 and 7, 2004. San Juan County Planners participated in these meetings, during which areas were identified that could be open, limited, and closed to OHV travel. Notes were made on a large format map, and

minutes were recorded of the discussions. On August 19 and 25, 2004, a subcommittee of the ID Team met to correlate the various notes with the purpose of producing three alternative maps of area (Open, Limited , and Closed) designations. These maps were completed on September, 2004. The seven Law Enforcement Patrol sectors and pertinent travel discussions are described below. A map of these sectors can be viewed at the Monticello FO.

1. Indian Creek is located at the northern boundary of the field office from Hurrah Pass south to the Manti-LaSal National Forest. The west boundary of this sector is Canyonlands National Park and the eastern boundary is along the Canyon Rims Moab Field Office boundary to the Manti-LaSal NF boundary.

Use and resource conflicts noted by ID Team:

- Off-road use / play-riding
- ACECs: Shay Canyon, Lavender Mesa, Bridger Jack Mesa, Butler Wash North,
- Indian Creek; WSA: Indian Creek
- Vegetation and livestock
- Desert Bighorn Sheep area year-round
- Cultural in some areas
- Wood gathering
- Antler gathering
- Camping and Indian Creek emergency closure (1999)
- Dead-end roads in Lockhart Basin
- Match with Moab FO
- Some redundant routes
- Hart's Draw and motorcycle use – potential MSO habitat, riparian bottom, scenic
- Trend: popular place for public and OHV use

2. Dry Valley Summit – is located east of the southern portion of Indian Creek sector (above) and extends eastward to the Colorado state line; it is bounded on the north by the Moab Field Office boundary and on the south by State Highway 491.

Use and resource conflicts noted by ID Team:

- Wildlife – Gunnison sage grouse leks, MSO, antelope, burrowing owls, prairie dogs, and deer and antelope winter range
- Antler hunting/gathering
- O/G – pipeline goes through the area
- Leaving gates open
- Seasonal closure – not clear in current RMP
- Wood cutting and post cutting – may be creating routes
- Hunting in area (private owners posting closed)
- Cultural – typically project a high density in areas
- Mineral development on private lands (copper) in area
- Trend: lots of local and visitor use, antler gathering

3. Montezuma Recapture Drainages – located south of State Highway 491 and bounded at its southern boundary by the Navajo Nation; on the east by the Colorado state line, and on the west by State Highway 191.

Use and resource conflicts noted by ID Team:

- Wood cutting
- Critical DWR habitat in small area on west
- ACECs: Alkali Ridge and Hovenweep for Cultural; NH Landmark within Alkali Ridge ACEC; WSAs: Squaw and Papoose, and Cross Canyon
- Recreation impacting cultural

4. **Butler Comb Lime** – is located west of State Highway 191 and on the west at Comb Wash; the northern boundary is the Manti-LaSal National Forest and the southern boundary is the San Juan River.

Use and resource conflicts noted by ID Team:

- Travel is heavy on highways and between highways
- River House Ruins – cultural site on San Juan River – driving into area, and sleeping in ruins
- SRMA for San Juan River boaters
- Proposed OHV trail from Bluff to Butler Wash
- Off-road area currently open
- Trapping
- Hiking
- OHVs – see above, area currently open
- Motocycles
- Human waste
- Foot traffic between Sand Island and Bluff
- Wildlife, some elk, small amount of MSO
- Cultural – Tank Bench
- Whiskers Draw – OHVs vs. hikers
- Grazing (west of Blanding) and OHVs (West Water Area)
- Illegal building of new OHV routes

5. Cedar Mesa – is located south of State Highway 95 south to the boundary with Glen Canyon National Recreation Area; it is bounded on the east by Comb Wash, and the rim that runs west to Highway 261 on the northern boundary of Valley of the Gods. The area is bounded on the west by State Highway 276 and then south across the highway to the GCNRA boundary.

Use and resource conflicts noted by ID Team:

- SRMA at south end of area
- ACEC: Cedar Mesa
- Wood cutting and OHV use; Cultural sites and OHVs
- Proliferation of de-facto routes

- WSAs - wood cutting and dirt bike use west of Grand Gulch; impacts from OHV use in Cedar Mesa WSAs (8) / cutting wood
- Littering
- Motorized road claim along rim of Fish Creek was closed and not shown on map
- Antler hunting around Polly's Mesa
- Some MSO, fish, and elk around Arch Canyon
- Comb Wash Campground and OHVs and cultural issues
- Horses and pack animals and staging areas mouth of Mule Canyon

6. Southwest Canyons – is located in the southwestern portion of the field office and is bounded on the south and west by GCNRA; on the north by the Dark Canyon rims and on the northeast by Manti-LaSal National Forest.

Use and resource conflicts noted by ID Team:

- Wildlife, crucial habitat, bighorn sheep and OHVs
- Cultural
- Deer near Long Canyon – small area
- MSO
- Other recreation uses and OHVs
- WSA – Mancos Mesa and routes
- County/group wants to make loops
- Wilderness Characteristics and OHVs
- ROS and Primitive
- Grazing in Lake Canyon area, and cultural sites
- Hole in the Rock Trail – protection

7. Dark Canyon - Beef Basin –located west of Manti-LaSal NF, east of GCNRA, north of White Canyon area, and south of Canyonlands NP.

Use and resource conflicts noted by ID Team:

- ACEC (Dark Canyon and Butler Wash North)
- Wildlife – deer and elk, MSO
- National Forest – open to travel but policy doesn't allow commercial horn hunting and hunting retrieval – consistent with NF
- Fable Valley
- Beef Basin spur road and increased camping – cultural sites
- Car-camping is increasing
- Cultural site impacts
- Horse use – corrals, bring own feed
- Elk critical shape/mapped area, deer critical, critical MSO in entire area
- Commercial Special Recreation Permits (SRPs)-three agencies-NPS, FS, BLM
- Trend: increasing use of recreational use

N.9.4.2 MOTORIZED ROUTES - DESIGNATIONS

Open, Limited, and Closed area designations needed to be delineated before any route designations could be made. Once these area designations were established for the draft alternatives, each resource specialist was tasked with identifying resource conflicts with specific routes that could warrant some type of mitigation measures. Conflicts were addressed according to NEPA Critical Elements, as well as other elements associated with OHV use as advised in IM UT 2004-061.

Specialists were given a form to complete for each route/resource conflict. These forms were filled out by two Law Enforcement rangers, and a Range specialist. Several resources had too many route conflicts associated with their resource to warrant filling out a form for each route; this included Wildlife and Recreation. These were compiled by the Wildlife Biologist, and Recreation specialists in conjunction with the co-leads for the travel plan.

These resource conflicts were captured using GIS and recorded in tables, which can be viewed at the Monticello FO. Some resource specialists identified no conflicts. All conflict areas were mapped and used for further discussion at ID Team meetings.

As the ID Team began addressing wildlife conflicts at the first meeting, it became apparent that some routes on the baseline map had no P/N from a BLM standpoint. This is the point where MFO began to further address P/N for individual routes. This was primarily done only for routes that were identified as conflicts by the various resource specialists; a limited number of routes not previously identified by resource specialists were also determined to have no P/N based on the ID Team Meeting discussions. These determinations, while made by specialists familiar with the route or area in question, were not field checked, and BLM determined the need for the county's input to verify several of BLM's P/N determinations (see Section N.8.3 for discussion on San Juan County's inventory and participation in route designation process). This was accomplished in subsequent meetings with the county.

During the meetings, each specific conflict was examined, after which the ID Team either proposed management actions to address the conflict (usually in the form of a route or seasonal closure) or it was decided that other management resource programs required access even in light of the conflict. About half of all resource noted identified conflicts were dismissed at the meetings because the conflict was with resource uses that were dependant on the existence of the specific route.

Typically, if a route was determined to have no P/N <u>and</u> a substantive resource or user conflict, then the route was closed. Routes were more likely to be closed because they had multiple resource conflicts and little P/N. Except where specifically noted in a meeting and written minutes, the ID Team's proposed route designation closures applied to the conservation and/or balanced alternative (Alternatives B and/or C).

A record of the discussion and decisions made at each of the meetings were recorded in written minutes (see Administrative Record) and with GIS mapping. The GIS specialist developed data layers (shape files) for all noted conflict areas, and included notes in the closed-route tablesby conflict code. These tables can be viewed at the Monticello FO.

N.9.4.2.1 CULTURAL CONFLICTS

Because of the extremely high density of cultural sites in the resource area, an alternative plan was worked out with the MFO cultural specialist to address cultural conflicts as they pertain to route designations. With the guidance and help of the BLM UTSO Archeologist and OHV coordinators, BLM decided to address cultural "priority" areas (cultural ACECs, National Historic Districts, etc.) only, and leave other potential cultural conflicts with routes for future consideration, if necessary (most likely post RMP). This is consistent with a widely-circulated draft IM 2004-005 from the Washington Office allowing for subsequent designation determination (Section N.5.1). The archeologist/cultural specialist was present at the majority of the ID Team meetings to also offer cultural perspective for areas of the field office other than specific cultural resource areas.

Route designation in the Butler Wash cultural priority area was addressed in a specific Butler Wash ID Team meeting between recreation and cultural management programs because of the large number of unresolved cultural conflicts with the recreation uses.

N.9.4.2.2 WILDLIFE CONFLICTS

Wildlife considerations by the ID Team for route designations included evaluations of Crucial Deer, Antelope, Bighorn Sheep, and Elk Habitats; and special status species habitat. Computer shape files / maps were developed with the Utah Department of Wildlife Resources (UDWR) for these habitat areas, as well as on-going consultations with US Fish and Wildlife Service (USFWS) conducted through cooperators' meetings. The four alternatives developed for the planning process reflect the mapped areas and timing issues (rutting, lambing, nesting, etc.) for each of the species.

N.9.4.2.3 ROUTES WITHIN WILDERNESS STUDY AREAS (WSAS)

At a minimum, the travel management area designation for wilderness study areas (WSAs) must be limited to ways and trails existing at the time the area became a WSA (BLM H-1610-1, Appendix C, D (D)(2)).

MFO received direction from the BLM UTSO on September 17, 2004 (phone conversation with UT OHV Coordinator) to avoid designating "ways" in WSAs. A very reasonable and clear justification must be made for "ways" that BLM proposes to designate in WSAs. This did not pose much of a conflict for MFO, as the ID Team had earlier determined that the majority of WSAs in the resource area would be closed to motorized use. However, a limited number of "ways" were designated in all Cedar Mesa WSAs (8) to provide access to trailheads and to remain in compliance with existing agreements with San Juan County.

N.9.4.2.4 SPEAR PROPOSAL ANALYSIS

The SPEAR routes have been digitized onto a map using the rough hand-drawn map provided by the proponents. Proposed SPEAR routes are compared to the routes that are part of the Monticello travel plan. The majority of SPEAR routes (457 miles of the 519 SPEAR proposed miles) are coincidental with the BLM travel plan. The routes that SPEAR shows as connectors will be proposed by San Jan County for SPEAR on a site-by-site basis for NEPA review. These 'connectors' include 24 routes covering approximately 35 miles (SPEAR route information can be viewed at the Monticello FO; see also Section N.8.2.3).

N.9.4.2.5 Red Rock Heritage Coalition Proposal Analysis

RRHP delivered a map, and transportation plan, and route analysis to BLM during the RMP scoping process. The BLM received the explanation of rationale behind proposed route closures on September 15, 2004 by email from Kevin Walker, one of RRHP's organizers. The BLM's analysis of each route mentioned in the RRHC Proposal and the comment analysis of their general proposals can be viewed at the Monticello FO (see Section N.8.2.4).

N.9.4.3 Motorized Single –Track

There is one route on BLM Monticello FO managed land that is open to foot traffic, mechanized, and motorized single-track riding. The route runs for approximately 0.8 miles from the National Forest boundary near Foy Lake (where it is a single-track on FS Land) to the Indian Creek area near Newspaper Rock where, after crossing the creek, it becomes a two-track county claimed route.

N.9.4.4 Non-Motorized Routes

N.9.4.4.1 Mechanized Routes

Mechanized use includes mechanical devices such as bicycles that are not motorized. There is one route specifically for bicycles at the northern boundary of the Monticello Field Office area named Jackson Hole. This route is designated Bicycles-Only and was established out of the Moab Field Office; it occurs on both BLM Monticello and Moab managed lands.

N.9.4.4.2 Constructed (Foot) Trails

- Butler Wash Ruins Interpretive Trail: Trailhead – paved parking lot; pit toilet; bulletin board; register box; brochure box with description of an interpretive trail to a cultural site overlook. Trail – Hiking; approximately 0.5 miles, easy to moderate, dirt and slickrock trail.
- Mule Canyon Ruins Interpretive Trail: Trailhead – paved parking lot; pit toilet; register box; interpretive kiosk. Trail – Hiking; a 200 yard paved sidewalk to a reconstructed Ancient Puebloan Kiva and surface pueblo. Handicap accessible.
- Sand Island Petroglyphs: Trailhead – vehicle pullout on sand/dirt road access to Sand Island Campground. Trail – Hiking; easy; a 150 yard dirt/rocky trail along a fence barrier to view prehistoric rock art panels.
- Three Kiva Pueblo – Montezuma Creek: Trailhead – dirt pullout along maintained county road; register box; interpretive sign. Trail – Hiking; pueblo is in view from the parking area; short walk on dirt to view pueblo up close.
- Newspaper Rock Petroglypph Panel: Trailhead – paved parking lot; pit toilet; register box. Trail – Hiking; short walk on a paved and dirt trail to view prehistoric rock art panel. Handicap assessable.

N.9.4.4.3 HIKING (FOOT) AND EQUESTRIAN / STOCK USE

Current status of Non-Motorized / Non-Mechanized Trails

Trail Name	Foot	Stock Overnight Use[1]	StockDay Use[1]
Kane Gulch	X	X	
Todie Canyon	X		
Bullet Canyon	X	X	X From Grand Gulch to Jailhouse Ruin
Shieks Canyon	X		
Government Trail	X	X	
Collins Canyon	X	X	
Slickhorn Canyon	X		
Point Lookout Canyon	X		
Grand Gulch	X From junction to San Juan River	X From Kane Gulch to the junction of Collins – no stock below Collins	
Fish Canyon	X	X From Comb Wash to confluence with Owl	X 2 miles above the confluence with Owl
Owl Canyon	X		X To Nevill's Arch
Road Canyon	X	X	X
Lime Creek Canyon	X	X	X
North Mule Canyon	X		
South Mule Canyon	X		
Lower Mule Canyon (from Comb Wash)	X	X	X
Mule Canyon or Cave (Canyon Towers)	X		
Arch Canyon	X	X	X
Johns Canyon	X	X	X
Honaker Trail	X		
McLoyd	X	X	X To the impassable pour-off
Moon House Trail	X		
Keeley Trail	X		
Sundance Trail	X		
Dark Canyon	X		
Fable Valley	X	X	
Salt Creek Mesa Trail	X	X	
Newspaper Rock Trail	X		
Salvation Knoll	X		

Current status of Non-Motorized / Non-Mechanized Trails

Trail Name	Foot	Stock Overnight Use[1]	StockDay Use[1]
Shay Canyon (Petroglyph Trail Area)	X		
Indian Creek Climbing Trails			
Bridger Jack Mesa	X		
Super Crack	X		
Cat Wall	X		
Way Rambo Wall	X		
Broken Tooth Wall	X		
Scarface	X		
Battle of the Bulge	X		
Butler Wash Trails			
Monarch Cave Trail	X		
Fish Mouth Trail	X		
Cold Springs Trail	X		
Wolf Man Panel Trail	X		
Ball Room Cave Trail	X		

[1] Stock users are required to take all feed (non-germinating and certified weed-free) necessary to sustain their animals while on the trip. Use is restricted to existing trails and routes in areas open to recreational stock use. Loose herding of pack and saddle stock is prohibited. All stock must be under physical control. Pack and saddle stock must be tethered at least 100 feet away from any water source, off o the trail, and well away from archaeological sites. Group size is limited to12 people and 10 animals.

Equestrian use is currently available on all trails and D routes in the Field Office area. Coordination with user groups will be on-going to identify specific areas for potential corrals, and potentially restricted trail-use. Development of horse use areas are scheduled for the Comb Wash Campground.

N.9.4.4.4 National Trail – American Discovery Trail (ADT)

The American Discovery Trail stretches across more than 6,800 miles and 15 states. The ADT is currently the only coast-to-coast, non-motorized recreational trail. The ADT links communities, cities, parks, and wilderness and allows people to hike, bicycle, or ride horses for an afternoon or a cross-county adventure. The trail in Utah consists of six segments totaling 593 miles, and includes rural, remote and rugged terrain. The Moab to Hite Crossing on the Colorado River covers 174 miles through portions of San Juan County and the Monticello Field Office area (see www.discoverytrail.org for information and Utah map)

N.9.4.5 Other Travel Modes

N.9.4.5.1 Airports/Airstrips – with fly-in access

- Cal Black Airport, FAA regulated located on the road to Halls Crossing before reaching the Glen Canyon NRA boundary.

- Bluff Airport, Non-FAA, under Right-of-Way to San Juan County located 3-4 miles west of Bluff, UT south of SR-163.
- Fry Canyon Airstrip, no facility, under Right of Way to Back Country Pilots' Association located south off SR-95 and west of Natural Bridges National Monument.
- Numerous old airstrips located throughout the resource area on BLM, State and private lands. Available for causal use, not maintained (see Administrative Record for List from the Utah Back Country Pilots, 3.7).

N.9.4.5.2 BOATING

- San Juan River - permitted motorized and non-motorized travel is allowed on the San Juan River under the current RMP. No up-stream motorized traffic is allowed (against the flow) except in an emergency.
- Colorado River – permitted activities on the BLM portion of the Colorado River are managed through the National Park Service, Canyonlands National Park.

N.9.4.6 NATIONAL SCENIC BYWAYS AND NATIONAL SCENIC BACKWAYS

The following scenic byways and backways (see "Utah! Scenic Byways and Backways," Utah Scenic Byways Committee) are located within the Monticello Field Office area and described in promotional materials provided to the public by Utah Tourism:

N.9.4.6.1 SCENIC BYWAYS

Indian Creek Corridor Scenic Byway: SR-211 (Junction with US-191 fourteen miles north of Monticello) to its terminus at the Needles District of Canyonlands National Park.

Bicentennial – Trail of the Ancients Scenic Byway: SR-95 from south of Blanding goes west across the Colorado River at Glen Canyon National Park (with a loop through Natural Bridges National Monument). A section also travels south from Blanding to the town of Bluff and then east to Montezuma Creek, and eventually into Colorado.

Monument Valley to Bluff Scenic Byway: US-163 from the Utah / Arizona border to the town of Bluff.

N.9.4.6.2 SCENIC BACKWAYS

Lockhart Basin Road Scenic Backway: From Moab, on the Kane Creek Blvd at the intersection of US-191, to Hurrah Pass onto Monticello FO which becomes the Lockhart Basin Road and ends at SR-211 (this is a 57 mile trail which takes approximately 11 hours to traverse, and is an extremely challenging 4- wheel drive, high clearance trail).

Trail of the Ancients Scenic Backway: Follows SR-261 including the Moki Dugway, from SR-95 to SR-163; and intersects SR-316 to the Goosenecks State Park. The Valley of the Gods road intersects SR-261 below the dugway for a 17 mile dirt and gravel loop drive.

Elk Ridge Road Scenic Backway: Begins 25 miles west of Blanding at the junction of SR-25 and SR-275; it turns onto Forest Road 088 (through the Manti-LaSal National Forest) and ends 48 miles later at the junction of SR-211.

Abajo Loop Scenic Backway: West from Monticello on Forest Road (FR) 105 to the junction of FR 079, and ends 35 miles later in the town of Blanding.

N.10 ALTERNATIVES DEVELOPMENT

After evaluating routes using the Field Office designation criteria, the ID Team began preliminary discussions to develop a range of alternatives for the Monticello Field Office travel plan. With very few exceptions, decisions made at route designation ID Team meetings pertained only to the balanced alternative. For the most part, the preliminary draft conservation and commodity alternatives are defined by general groups of conflicts.

The conservation alternative generally reflects the following:

- All routes initially identified as conflicts by resource specialists are closed;
- All routes identified as designation conflicts are closed (ways in WSAs, routes in closed areas, etc.).

The commodity alternative is essentially the San Juan County inventory minus WSA intrusions since BLM cannot legally designate intrusions (see Interim Management Policy for WSAs, H-8550-1, I.B.11).

The following table represents the Open, Limited, and Closed acreages determined by the Monticello Field Office ID Team, and the number of miles under the Limited category of designated roads and trails as of September 2005. Route closures and the key for conflict codes for each alternative can be viewed at the Monticello FO.

OHV Designation Categories on BLM Lands (1,783,123 acres)	Number of Acres [1]			
	No Action [RMP 1991]	Alternative B Conservation	Alternative C Balanced	Alternative D Commodity
Open	611,310	0	2,311	2,311
Limited – to designated	218,780	1,352,053	1,354,784	1,780,807
Limited use-seasonal	540,260	NA	NA	NA
Limited – to existing	570,390	NA	NA	NA
Closed	276,430	431,065	426,025	0

* Numbers are subject to change depending on any changes made during the on-going alternative evaluation process.

[1] Acres may be additive because of overlap.

Areas Limited to Designated Roads and Trails onBLM Lands	Miles*			
	No Action [RMP 1991]	Alternative B Conservation	Alternative C Balanced	Alternative D Commodity
B roads		992	992	992
D Roads		1,767	2,217	2,475

* Numbers are subject to change depending on any changes made during the on-going alternative evaluation process.

N.11 Analysis of Effects – Draft Environmental Impact Statement (DEIS)

Analysis of the potential impacts to resources and uses by alternative will be completed in the DEIS.

N.12 Resource Management Plan (RMP) Decisions – Record Of Decision (ROD)

Management decisions for resources and uses in the Monticello Field Office will be made through the Resource Management Plan (RMP) and (ROD), expected to be completed and signed in June of 2008.

N.13 Plan Maintenance and Changes to Route Designations

The RMP must include indicators to guide future plan maintenance, amendments or revisions related to OHV area designations or the approved road and trail system within limited areas or sub-areas. Indicators for such changes could include results of monitoring data, new information, or changed circumstances (IM 04-005, Attachment 2).

Actual route designations can be modified without completing a plan amendment, although NEPA compliance is still required. 43 CFR 8342.3 states:

> The authorized officer shall monitor effect of the use of off-road vehicles. On the basis of information so obtained, and whenever the authorized officer deems it necessary to carry out the objectives of this part, designations may be amended, revised, revoked, or other action taken pursuant to the regulation in this part.

Within the RMP, a Field Office must establish procedures for making modifications to their designated route network. Because future conditions may require the designation or construction of new routes or closure of routes in order to better address resources and resource use conflicts, a Field office will expressly state how modification would be evaluated. As noted in IM 2004-061, plan maintenance can be accomplished through additional analysis and land use planning, e.g., activity level planning. BLM will collaborate with affected and interested parties in evaluating the designated road and trail network for suitability for active OHV management and envisioning potential changes in the existing system or adding new trails that would help meet current and future demands. In conducting such evaluations, the following factors would be considered:

- Trails suitable for different categories of OHVs including dirt bikes, ATVs, dune buggies, and 4-wheel drive touring vehicles, as well as opportunities for joint trail use;
- Need for parking, trailheads, informational and directional signs, mapping and profiling, and development of brochures or other materials for public dissemination;
- Opportunities to tie into existing or planned trail networks;
- Measures needed to avoid onsite and offsite impacts to current and future land uses and important natural resources; among others, issues include noise and air pollution, erodible solids, stream sedimentation, non-point source water pollutions, listed and sensitive species' habitats, historic and archeological sites, wildlife, special management areas, grazing

operations, fence and gate security, needs of non-motorized recreationists, and recognition of property rights for adjacent landowners; and

- Public land roads or trails determined to cause considerable adverse effects or to constitute a nuisance or threat to public safety would be considered for relocation or closure and rehabilitation after appropriate coordination with applicable agencies and partners.

Regulations at 43 CFR 8342.2 require BLM to monitor the effects of OHV use. Changes should be made to the Travel Plan based on the information obtained through monitoring.

N.14 Cooperators and Consultation

N.14.1 Cooperators

Copies of meeting minutes are found in the BLM Monticello Field Office Land Use Plan Administrative Record.

N.14.1.1 State of Utah, including State Institutional Trust Land Administration (SITLA)

A meeting with SITLA representatives was held February 16, 2005 at the Monticello Field Office. On-going consultations continue to address BLM and SITLA management concerns including a field meeting July 19, 2005 and a meeting with SITLA and San Juan County on August 2, 2005.

N.14.1.2 State of Utah, Department of Wildlife Resources (DWR)

DWR participated in the Cooperators' Meetings held May 10-12, 2005 for review and input to the draft alternatives matrix and at subsequent meetings.

N.14.1.3 U.S. Fish and Wildlife Service (USFWS)

Letters from the USFWS concerning on-going issues with Mexican spotted owl habitat in Arch Canyon, and discussions in coordination with BLM and UDWR, are the basis for choices made by the ID team in evaluating draft alternatives.

N.14.1.4 Utah State Historic Preservation Office (USHPO)

The USHPO is consulted on cultural aspects through the RMP process and activity level, site-specific NEPA where cultural resources are concerned. A meeting was held with the Director of USHPO in the Monticello office on June 23, 2005 to review the alternatives matrix for cultural resources.

N.14.1.5 San Juan County

As described in this document, San Juan County has been an integral part of the Monticello Field Office's travel plan development.

N.14.1.6 BLM Moab Field Office

Coordination with the Moab FO has been consistent from the outset of travel planning and the RMP process. Edge matching of boundaries has been accomplished.

N.14.2 OTHER COORDINATION

N.14.2.1 NATIVE AMERICAN TRIBES

Native American Tribes are consulted on all site-specific NEPA where there are cultural concerns and have been invited to participate in the planning process.

N.14.2.2 NATIONAL PARK SERVICE (NPS)

Canyonlands National Park - Canyonlands NP allows only street legal and licensed vehicles to travel on park roads; no ATVs are permitted on park service lands. Coordination with routes that traverse both BLM and Canyonlands areas has been initiated and will be on-going.

There are routes on BLM lands that carry-over onto Canyonlands NP. One route (B122) in the Indian Creek ACEC area shows on the Canyonlands General Management Plan as open to street licensed vehicles. Route (D0497) in the Davis Canyon area crosses from BLM lands to State lands and then to Canyonlands NP. Canyonlands will post that State land/NPS boundary as open to foot travel only on NPS.

Glen Canyon National Recreation Area NRA – Meetings concerning planning issues have been held between the BLM and GCNRA staff. Travel on the NRA lands is limited at this time (Spring 2005) to vehicles that are licensed and street legal; no ATVs are permitted to travel on NRA lands.

N.14.2.3 NATIONAL FOREST SERVICE

Manti La Sal National Forest – Coordination between BLM and the Forest is on-going. At the implementation level, joint signing efforts are being worked on with the three agencies (BLM, National Forest, and NPS), the San Juan County planning staff, Utah Parks and Recreation, and ATV user group, SPEAR.

N.14.2.4 CANYONS OF THE ANCIENTS NATIONAL MONUMENT (COANM), COLORADO BLM

The COANM is presently in the development phase of their initial Management Plan. The monument was designated on June 9, 2000 by Presidential Proclamation to protect cultural and natural resources on a landscape scale. An initial meeting with the COANM personnel occurred in October, 2003 with follow-up phone calls concerning wild and scenic rivers determinations, and travel planning, and a meeting in Monticello held on September 6, 2005.

N.15 IMPLEMENTATION PROCESS

Implementation decisions are actions to implement land use plans and generally constitute BLM's final approval allowing on-the-ground actions to proceed. These types of decisions are based on site-specific planning and NEPA analyses and are subject to the administrative remedies set forth in the regulations that apply to each resource management program of the BLM. Implementation decisions are not subject to protest under the planning regulations.

The Monticello FO travel planning and implementation process includes the following:

- A map of roads and trails for all travel modes;
- Notations of any limitation for specific roads and trails;

- Criteria to select or reject roads and trails in the final travel management network, add new roads or trails, and to specify limitations;
- Guidelines for management, monitoring, and maintenance of the system; and
- Needed easements and rights-of-ways (to be issued to the BLM or others) to maintain the existing road and trail network providing public land access.

In addition, travel management networks should be reviewed periodically to ensure that current resource and travel management objectives are being met (43 CFR 8342.3).

In the final RMP, designated OHV routes will be portrayed by a map entitled "Field Office Travel Plan and Map". This map is then the basis for route signing and enforcement. The field office will prioritize actions, resources, and geographic areas for implementation. The implementation goals include completing signage, maps, public information, kiosks, and working with partners.

As part of implementing the route designation decision, each Field Office should input their route information into the FIMMS/MAXIMO systems so that Bureau maintenance funding can be allocated to the route system.

The Resource Advisory Council (RAC) works with the Utah BLM in an advisory capacity to support OHV management. RAC states in its Executive Summary Report on OHV Management that it "believes the explosive growth in off-highway vehicle (OHV) use on public lands in Utah requires that the BLM implement a high priority pro-active statewide OHV management plan."

The RAC has adopted recommendations in their report which include:

- Establish a Coordinated OHV Management Policy
- Designate and Inventory Trails
- Increase Enforcement
- Educate OHV Users
- Develop and Maintain Trails
- Monitor and Adapt the Management Plans

The RAC recommendations will guide the implementation plan for the Monticello Field Office. Included in their summary of key issues are signage and the lack thereof throughout the state; the lack of user-friendly, accurate maps for areas; the length of time it takes to complete planning; and the plan implementation which in many cases are never completed.

Developing an implementation plan to define and document a specific course of action needed to implement the OHV allocation decision is part of the OHV planning process. The Implementation Plan is an internal BLM document providing guidance to Managers on how to implement designation decisions.

N.15.1 Background Information

Coordination meetings with San Juan County, Manti La Sal National Forest and the National Park Service have initially explored the feasibility of creating a multi-agency travel map of routes as they lie on each agency's lands, and which would be publicly distributed for the area encompassing southeastern Utah. This joint effort is supported by the participating agencies and

will be pursued between the BLM, San Juan County, NPS units, and the Manti La Sal National Forest not only in the mapping / signing portion of implementation but also with the educational aspect of access and OHV use.

N.15.2 Pre-Designation Actions

The National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands is the primary guidance document for implementation of designated routes on BLM lands.

N.15.2.1 Mapping and travel information

A coordinated group of BLM, San Juan County, NPS, Forest Service, and Utah State Parks and Recreation personnel will form a working-group to establish guidelines for maps and information that can be published in the form of brochures and route maps for the recreating public.

N.15.2.2 Signs

Signing will follow the State-wide OHV Trail Signing Standards as Prepared by the National Resource Coordinating Council (NRCC) Technical Team. To gain consistency throughout the state (Utah), these standards are recommended for all new signs installed to manage off-highway vehicle use after January 1, 2002. A coordinated effort has already begun to review signing on routes; this group includes Utah State Parks and Recreation, San Juan County, Manti La Sal National Forest, National Park Service units in the southeast area of Utah, and the BLM.

Monticello FO will plan the on-the-ground designation of routes process to coordinate with maps and needed signage. This includes working with the BLM Rawlins (WY) Sign Shop to design and produce the needed signage over a period of three to five years. Likewise, planning will include the recommendation to hire seasonal employees, and / or use partners, instruction for them in GIS systems, and providing a vehicle and the equipment needed to install an estimated 1,000 to 1,200 signs a year.

A system of volunteer help will be coordinated with the local OHV and other groups to elicit support in maintaining and repairing signage as necessary, as well as reporting to BLM what on-the-ground needs for signage they discover in their riding areas within the field office.

N.15.2.3 Physical Constraints

In the case of routes that need closure from use, physical restraints such as fences, boulders, or other types of barriers may be put in place.

N.15.2.4 Public Announcements

Outreach efforts will be coordinated through the working group of county and federal agencies to reach user groups of the recreating public. This includes San Juan County, Moab and Monticello BLM, Utah State Parks and Recreation, Glen Canyon NRA, Canyonlands NP, Natural Bridges NM, Hovenweep NM, and the Canyons of the Ancients NM under the jurisdiction of Colorado BLM.

N.15.3 POST-DESIGNATION ACTIONS

N.15.3.1 INSTALLATION

BPS funding will be requested beginning in FY 2007 to start on-the-ground installation of signing (see 15.4 below for projected funding needs over the life of the new RMP).

N.15.3.2 USE SUPERVISION

The BLM Monticello and Moab Field Offices Recreation Programs will supervise the use of routes as outlined in the new RMPs. Law Enforcement and resource specialists will formally and informally monitor the travel plan routes as outlined in a Monitoring Plan.

N.15.3.3 ENVIRONMENTAL MONITORING

A Monitoring Plan will be developed following the signing of the RMP Record of Decision and will address timing and criteria for resource monitoring. Of particular interest for the Monticello Field Office are cultural and wildlife resources management due to the large number of identified and recorded cultural sites and the continuing identification of yet unknown sites, and the areas of habitat for Threatened and Endangered and wildlife species.

> Monitoring methodologies, procedures and techniques for OHV use and impacts in the resource area will meet existing resource health standards and guidelines. Monitoring plans will be developed sufficient to detect and evaluate motorized OHV-related impacts so that management changes can occur, if needed. (National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands, January 2001).

N.15.3.4 ENFORCEMENT

When OHV designation, which may include closures or restrictions, are developed through Resource Management Plans, publication of the Federal Register Notice for the RMP, Record of Decision, is required and is sufficient for legal enforcement (Draft Travel Management Guidelines for the Public Lands in Wyoming, September 21, 2004).

National strategy notes that "law enforcement needs to be a more visible and effective tool for motorized OHV management…Improvements in user education, WSA monitoring and observation, signing, route marking, and other Strategy outcomes will assist motorized OHV law enforcement efforts. But substantially more law enforcement rangers and support resources are needed to ensure compliance with motorized OHV regulations. Currently, each ranger patrols an average of 1.76 million acres of often remote public land" (National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands, January 2001).

N.15.3.5 MAINTENANCE

With thousands of miles of routes in the field office area, maintenance is an on-going need. The costs in money and personnel time have to be considered, and are included in the cost estimates shown below. It is anticipated that the use of volunteer help will provide an additional support system for the maintenance of the motorized trail systems, just as volunteer work is currently being utilized on the maintenance of non-motorized trails.

N.15.3.6 EDUCATIONAL PROGRAMS

These include continuing support and education of the "Leave No Trace" and "Tread Lightly" programs which the BLM helped establish; local interagency coordination with literature, maps and brochures for public distribution; consistent signing throughout the southeastern Utah area; and working with the rider ATV groups with cultural training, wildlife awareness, and safe rider education.

N.15.4 COST ESTIMATES

See Table 15.1 for listing of estimated costs for implementation scheduled over the potential life of the RMP of approximately 12 years.

N.15.4.1 DIRECT COSTS

Initial Phase – Installation, Years 1-3

- Each sign cost (4/05) is approximately $37 each
- Each post estimated cost is approximately $13 each
- Carsonite Sign Posts, 72" approximately $12 each plus stickers
- Physical Restraints such as boulders, fences, etc.
- Labor estimated at GS 4-5: $28,000 per year (for 10 months per year)
  - Two seasonal employees for 10 months each for three years to install
  - 1,200 signs per year (taking average of I hour each sign plus drive time)
- Vehicle – dedicated 4x4 pick up truck for 3-5 seasons, $6,000/year
- Gas and Per Diem

Secondary Phase – Maintenance and Repair, Year 2-12

- Sign Cost is approximately $37 each (plus 10% for cost increases)
- Post cost estimated at $13 each (plus 10% for cost increases
- Labor estimated GS 4-5: $28,000 per year (for 3 months per year)
  - One seasonal employee for 3 months for years 3-12 to replace and maintain signage;
  - Averaging replacement of 60 signs per year, and maintenance on the rest.
- Vehicle – dedicated 4x4 pick up truck for 3-5 seasons, $6,000/year

N.15.4.2 INDIRECT COSTS

- Law Enforcement – ¼ time of LE Officer, estimated at $15,000 per year - from year 1-12.
- Maps for Distribution to the Public - first year set up, design, printing costs for approximately 5,000 maps. As time progresses, the sale of the maps should reimburse the costs. There is also the possibility of Utah Parks and Recreation helping with providing maps from their OHV registration budget.
- Brochures for Free Distribution to the Public - First year design and printing, then copying year 2-12.

Table 15.1. Cost Estimates for Travel Plan Implementation Monticello Field Office September 2005

Fiscal Year	Signs/ Posts	Replace-ments	Labor/ Vehicle	Gas/ Per diem	Physical Restraints	Direct Costs	Law Enforce-ment	Maps/ Brochures	Indirect costs	Totals
Year 1: 2007	1,200 @ $50 each	0	2 @ 10 mos each $50,000 +$6,000	$5,000	$40,000	$161,000	$15,000	$8,500 /$2,500 (for 5,000)	$26,000	**$187,000**
Year 1 Total:	$60,000		$56,000	$5,000	$40,000		$15,000	$11,000		
Year 2: 2008	1,200 @ $50 each	60 @ $50 each	2 @ 10 mos each $50,000 +$6,000	$5,000	$40,000	$164,000	$15,000	$6,000 /$1,500 (for 5,000)	$22,500	**$186,500**
Year 2 Total	$60,000	$3,000	$56,000	$5,000	$40,000		$15,000	$7,500		
Year 3: 2009	1,200 @ $50 each	60 @ $50 each	2 @ 10 mos each $50,000 +$6,000	$5,000	$40,000	$164,000	$15,000	$2,500 /$1,500 (for 5,000)	$19,000	**$183,000**
Year 3 Total	$60,000	$3,000	$56,000	$5,000	$40,000		$15,000	$4,000		
Initial Subtotal:	**$180,000**	**$6,000**	**$168,000**	**$15,000**	**$120,000**	**$489,000**	**$45,000**	**$22,500**	**$67,500**	**$556,500**
Year 4: 2010	1,200 @ $50 each	60 @ $50 each	2 @ 10 mos each $50,000 +$6,000	$4,000	$30,000	$153,000	$15,000	$1,000 /$1,500 (for 5,000)	$17,500	**$170,500**
Year 4 Total	$60,000	$3,000	$56,000	$4,000	$30,000		$15,000	$2,500		
Years 5-12	0	60 @ $50 each = $3,000	1 @ 3 mos $12,000 +$6,000 (8x18K)	$4,000 (8x4k)	$10,000 (8x10k)	$336,000	$15,000	$1,000 /$1,500 (for 5,000)	$140,000	**$476,000**
Subtotal for years 5-12:		**$24,000**	**$200,000**	**$32,000**	**$10,000**		**$120,000**	**$20,000**		
Totals for 12 years:	**$240,000**	**$33,000**	**$424,000**	**$51,000**	**$160,000**	**$978,000**	**$180,000**	**$45,000**	**$225,000**	**1.203 m**

N.16 Designation Orders and Record

Each Field Office is required to input their route information in the FIMMS/MAXIMO systems so that Bureau maintenance funding can be allocated to the route system (IM UT 2004-061, p. 6).

N.17 References

43 C.F.R. Part 8340

BLMs Comment Analysis on RRHC Proposal, April 2005

BLM Moab and Monticello Field Office, Planning Bulletin #3 – Request for Route Data, November 1, 2003

BLM Moab and Monticello RMP Revisions, Scoping Summary, July 2004

BLM Monticello Field Office, Analysis of Management Situation (AMS), January 2005

BLM Monticello Field Office, Draft Alternatives Matrix, April 15, 2005

BLM Land Use Planning Handbook 1601

Draft Travel Management Guidelines for the Public Lands in Wyoming, September 21, 2004

Memorandum, MFO Travel Plan Development, October 8, 2004

NRCC Technical Team, State-wide OHV Trail Signing Standards (from Utah BLM State Office, September 5, 2001

Natural Resource Coordinating Council (NRCC) Utah Interagency OHV Steering Committee, Final Report, April 1, 2004

Standards for Rangeland Health of BLM Land in Utah, May 1997

U.S. Department of the Interior, BLM, Interim Management Policy for Lands Under Wilderness Review, H-8559-1

U.S. Department of the Interior, BLM, National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands, January 2001

Utah OHV Transactions by County and Fiscal Year, 2005

Utah!, Scenic Byways and Backways, Utah Scenic Byway Committee, 2002

www.discoverytrail.org

ATTACHMENT A: ACRONYMS

ACEC – Area of Critical Environmental Concern

ATV – All Terrain Vehicle

BLM – Bureau of Land Management

DEIS – Draft Environmental Impact Statement

DWR – Department of Wildlife Resources

EA – Environmental Assessment

EIS – Environmental Impact Statement

MFO – Monticello Field Office

MSO – Mexican spotted owl

NEPA – National Environmental Policy Act

NRCC – Natural Resource Coordinating Council

OHV – Off-highway Vehicle [synonymous with ORV)

ORV – Off-road Vehicle

RAC – Resource Advisory Council

RMP – Resource Management Plan

ROD – Record of Decision

SHPO – State (Utah) Historic Preservation Office

SRMA – Special Recreation Management Area

USFWS – U.S. Fish and Wildlife Service

SITLA – School Institutional Trust Land Administration

UTSO – Utah (BLM) State Office

WSA – Wilderness Study Area

WSR – Wild and Scenic River

ATTACHMENT B: DEFINITIONS

All-Terrain Vehicle (ATV) – A wheeled or tracked vehicle, other than a snowmobile or work vehicle, designed primarily for recreational use of the transportation of property or equipment exclusively on undeveloped road rights of way, marshland, open country or other unprepared surfaces (BLM, National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands, January 2001).

Closed Designations – Areas or trails are designated closed if closure to all vehicular use is necessary to protect resources, promote visitor safety, or reduce use conflicts (8342.06 E).

Considerable Adverse Impacts – Any ORV related adverse environmental impact that causes: (a) significant damage to cultural or natural resources, including but not limited to historic, archaeological, soil, water, air, vegetation and scenic values, or (b) significant harassment of wildlife and/or significant disruption of wildlife habitats; or (c) significant damage to endangered or threatened species or their habitat, or (d) impairment of wilderness suitability; *and* is irreparable due to the impossibility or impracticality of performing corrective or remedial actions. The significance of these damages is determined on a case-by-case basis by BLM's authorized officers in the field (normally District [Field Office] Managers) in the context of local conditions (BLM Manual 8342.05).

Designation – The formal identification of public land areas and trails where off-road vehicles use has been authorized, limited, or prohibited through publication in the *Federal Register*. The types of designation used by the BLM are open, limited, or closed to off-road vehicle use (BLM Manual 8342.05).

Emergency Limitations or Closures – Limiting use or closing areas and trails on public lands to ORV use under the authority of 43 CFR 8341.2. Such limitations or closures are not ORV designations (BLM Manual 8341.05).

Implementation Plan - A site-specific plan written to implement decisions made in the land use plan. An implementation plan usually selects and applies best management practices (BMP) to meet land use plan objectives. Implementation plans are synonymous with "activity" plans. Examples of implementation plans include interdisciplinary management plans, habitat management plans, and allotment management plans (BLM, National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands, January 2001).

Land Use Plan - A set of decisions that establish management direction for land within an administrative areas, as prescribed under the planning provisions of FLPMA; and assimilation of land use plan-level; decisions developed through the planning process outlines in 43 CFR 1600, regardless of the scale at which the decisions were developed. (BLM, National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands, January 2001)

Limited Designations – The limited designation is used where ORV use must be restricted to meet specific resource management objectives. Examples of limitations include: number or types of vehicles; time or season of use; permitted or licensed use only; use limited to designated roads and trails; or other limitations if restrictions are necessary to meet resource management objectives including certain competitive or intensive use areas which have special limitations (BLM Manual 8342.06 F).

Mechanized Travel – Moving by a mechanical device such as a bicycle, not powered by a motor.

Minimize ORV Damage – To reduce ORV effects to the maximum extent feasible short of eliminating ORV use, consistent with established land management objectives as determined by economic, legal, environmental, and technological factors (BLM Manual 8342.05).

Motorized Travel – Moving by means of vehicles that are propelled by motors such as cars, trucks, OHVs, motorcycles, boats, etc.

Non-motorized Travel – Moving by foot, stock or pack animal, boat, or mechanized vehicle such as a bicycle.

O**ff-highway Vehicle (OHV) -** OHV is synonymous with, and the more current term for, Off-Road Vehicles (ORV). ORV is defined in 43 CFR 8340.0-5(a): Off-road vehicle means any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding: 1) Any non-amphibious registered motorboat; 2) Any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; 3) Any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved; 4) Vehicles in official use; and 5) Any combat or combat support vehicle when used in times of national defense emergencies.

OHV area designations - Refers to the land use plan decisions that permit, establish conditions, or prohibit OHV designations (43 CFR 8342.1). The CFR requires all BLM-managed public lands to be designated as open, limited, or closed to off-road vehicles, and provides guidelines for designation. The definitions of open, limited, and closed are provided in 43 CFR 8340-5 (f), (g), and (h), respectively.

Open Designations – Open designations are used for intensive ORV use areas where there are no special restrictions or where there are no compelling resource protection needs, user conflicts, or public safety issues to warrant limiting cross-country travel (8342.06 D).

Preliminary Network - If a final road and trails network is not identified in the RMP process, the plan should include a preliminary network that will be identified for use until a final network is selected through a subsequent implementation plan (Attachment to IM 2004-005).

Resource Management Plan (RMP) Area - Most RMPs cover a large planning and management area. As a result, the planning area may be divided into smaller areas, each with differing values, issues, needs and opportunities that may warrant differing management prescriptions (Attachment to IM 2004-005).

Road and Trail Selection - For each limited area, the BLM should choose a network of roads and trails that are available for motorized use, and other access needs including non-motorized and non-mechanized use, consistent with the goals and objectives and other consideration described in the plan (Attachment to IM 2004-005).

Road and Trail Identification - For the purposes of this guidance, road and trail identification refers to the on-the-ground process (including signs, maps and other means of informing the public about requirements) of implementing the road and trail network selected in the land use plan or implementation plan. Guidance on the identification requirements is in 43 CFR 9342.2© (Attachment to IM 2004-005).

"Ways" - See p. N-14, Section N.7.2.4 – Route Designations in Wilderness Study Areas (WSAs).

APPENDIX O. IDENTIFICATION OF WILDERNESS CHARACTERISTICS ON NON-WSA LANDS MANAGED BY MONTICELLO BLM

O.1 BACKGROUND

O1.1 THE 1999 UTAH WILDERNESS INVENTORY

Subsequent to the establishment of the Wilderness Study Areas (WSAs), there has been considerable debate as to whether additional lands qualify, and should be considered, for congressional wilderness designation. Charges that the Utah BLM improperly omitted qualifying areas in the inventory lead to hearings before Congress and the most intractable controversy over any resource inventory since the passage of FLPMA.

As a result of the debate (and a significant passage of time since BLM's original inventories), in 1996 the Department of the Interior (DOI) directed BLM to take another look at some of the lands in question. In response to the direction of the Secretary of the Interior, BLM inventoried approximately 3,105,300 acres of BLM-managed lands that were then proposed for wilderness designation in H.R. 1500. As a result of the inventory, BLM determined that approximately 2,712,100 of these acres have wilderness characteristics as prescribed in the Wilderness Act, and 393,200 acres do not have wilderness characteristics. Approximately 490,744 of the acres determined to have wilderness characteristics and approximately 80,731 of the acres determined to not have wilderness characteristics are public lands managed by the Monticello Field Office (*1999 Utah Wilderness Inventory* and revisions). Refer to Table O.1 for a list of areas and acres involved.

O1.2 GUIDANCE SUBSEQUENT TO THE *1999 UTAH WILDERNESS INVENTORY*

The BLM's manual for wilderness inventory, "Wilderness Inventory and Study Procedures Handbook" (H-1630-1), was rescinded on September 29, 2003 by Bureau of Land Management (BLM) Instruction Memorandum 2003-274, "BLM Implementation of the Settlement of Utah v. Norton Regarding Wilderness Study". On October 23, 2003, Instruction Memorandum 2003-275, Change 1, "Consideration of Wilderness Characteristics in Land Use Plans," was issued and became the sole written guidance for the consideration of non-WSA lands with wilderness characteristics in the land use planning process until the revised Land Use Planning Handbook was published in 2005. Instruction Memorandum 2003-275, Change 1 states that "the BLM may consider information on wilderness characteristics, along with information on other uses and values, when preparing land use plans."

The guidance also states that the consideration of non-WSA lands with wilderness characteristics in the land use planning process has the potential for three distinct outcomes:

1) to give priority to other uses over the protection of wilderness characteristics;
2) to give priority to other uses, but applying management restrictions to protect some or all of the wilderness characteristics; or
3) to give priority to the protection of wilderness characteristics.

The current BLM Land Use Planning Handbook (H-1601-1, 2005) states that land use plans must:

> Identify decisions to protect or preserve wilderness characteristics (naturalness, outstanding opportunities for solitude, and outstanding opportunities for primitive and unconfined recreation). Include goals and objectives to protect the resource and management actions necessary to achieve these goals and objectives. For authorized activities, include conditions of use that would avoid or minimize impacts to wilderness characteristics.

The Land Use Planning Handbook also authorizes the BLM to consider wilderness proposals from the public during the land use planning process.

O1.3 Wilderness Characteristics Review

Subsequent to the *1999 Utah Wilderness Inventory* and either prior to or during scoping for the Monticello RMP, the BLM received new information from the Southern Utah Wilderness Alliance (SUWA) concerning several areas. In response to this information, Monticello BLM's Interdisciplinary Team reviewed the new information in conjunction with other available information, and made findings regarding whether or not wilderness characteristics exist. Refer to Section O.2.2 for information on the review process.

O1.4 Overview of Wilderness Characteristics Review Process

Monticello BLM used an interdisciplinary team to review all of the SUWA-proposed wilderness areas that had not been already established as WSAs or inventoried in the *1999 Utah Wilderness Inventory*.

In addition to reviewing digital aerial photos from 2006, BLM used other GIS information, including county road data (previously verified as part of travel plan formulation), county intrusion data, and BLM files for such resource uses as range improvements and community pits. The review identified impacted areas, as well as those areas that appeared relatively free of impacts on naturalness. Monticello BLM also relied upon specialists' field experience within each of these areas to assist in determining whether these units possess wilderness character.

IM 275-Change 1, unlike the revoked *Wilderness Inventory and Study Procedures Handbook*, does not mention size as an essential wilderness characteristic. However, Monticello BLM took into consideration the language of the 1964 Wilderness Act, and concluded that a size criterion is an important indicator of whether or not outstanding opportunities for solitude and/or primitive recreation exist. Areas of less than 5,000 acres are *generally* not large enough to provide for these opportunities. However, there were areas, which were less than 5,000 acres that were reviewed, because it was determined that they could, in fact, provide for these opportunities.

Although there were areas of less than 5,000 acres that were reviewed for Wilderness Characteristics, in general, the size criterion of 5,000 acres was applied only to "stand-alone" units; that is, units not contiguous with other federal lands previously determined to possess wilderness characteristics (including designated wilderness, WSAs, WIAs with wilderness characteristics, and National Park Service and U.S. Forest Service lands that are administratively endorsed for wilderness). Units that are contiguous to federal lands with wilderness characteristics as identified above were evaluated for naturalness alone because size and

outstanding opportunities for solitude and/or primitive recreation were assumed to be present in association with the larger contiguous area.

Table O1 presents the lands inventoried in the *1999 Utah Wilderness Inventory (revised 2003).*

Table O.1 Non-WSA Lands Inventoried in the *1999 Utah Wilderness Inventory (revised 2003),* Total Acreage, and Acreage with Wilderness Characteristics (WC) and without Wilderness Characteristics (NWC)

Name (areas marked with an asterisk are contiguous with a WSA of the same name)	Total Acreage of Inventoried Unit	Acreage with Wilderness Characteristics (WC)	Total BLM Acres not Brought Forward (NWC)[1]
Arch and Mule Canyons	13,600	0	13,600
*Bridger Jack Mesa	27,300	23,254	4,046
*Butler Wash	3,000	1,661	1,339
*Cheesebox Canyon	16,080	13,244	2,836
Comb Ridge	16,400	13,763	2,637
*Cross Canyon	2,100	1,355	745
*Dark Canyon	67,400	66,325	1,075
*Fish Creek Canyon	28,480	26,649	1,831
Fort Knocker Canyon	12,800	12,409	391
Gooseneck	3,600	3,571	29
*Grand Gulch	49,570	47,109	2,461
Gravel and Long Canyons	37,100	36,933	167
Harmony Flat	10,200	9,660	540
Harts Point	57,796	26,214	31,582
*Indian Creek	20,850	18,937	1,913
*Mancos Mesa	73,900	62,190	11,710
Nokai Dome	94,189	94,189	0
*Road Canyon	13,960	11,377	2,583
San Juan River	14,700	14,338	362
Sheep Canyon	4,700	3,998	702
*Squaw & Papoose Canyon	3,750	3,568	182
Totals	**571,475**	**490,744**	**80,731**

[1] Although the 1999 inventory evaluated State lands for wilderness character, BLM has no authority to manage such areas for wilderness characteristics. Therefore, no State lands are being carried forward into the DEIS.

Table O2 displays all other non-WSA lands currently proposed for wilderness, and findings by the BLM Interdisciplinary review team.

Table O.2 Other Non-WSA Lands Proposed for Wilderness; Total Acreage, and Acreage with and without Wilderness Characteristics

External Proposal Area (Name)	Total Acres[1]	Acres possessing Wilderness Characteristics (WC)[2]	Acres not having Wilderness Characteristics (NWC)	Comments
Allen Canyon 1	2,330	0	2,330	Size too small and contiguous to lands with NWC
Allen Canyon 2	307	0	307	Size too small and contiguous to lands with NWC
Allen Canyon 4	281	0	281	Size too small and contiguous to lands with NWC
Allen Canyon 5	3,491	0	3,491	Size too small and contiguous to lands with NWC
Arch Canyon 1	4,461	0	4,461	Not natural in appearance due to wood cutting & vegetation treatments
Arch Canyon 2	1,819	0	1,819	Size too small and contiguous to lands with NWC
Arch Canyon 3	26	0	26	Not natural in appearance due to paved road and other routes
Arch Canyon 4	46	46	0	Natural in appearance and contiguous to Mule Canyon WSA
Arch Canyon 5	2,111	0	2,111	Size too small and contiguous to lands with NWC
Arch Canyon 6	2,691	0	2,691	Size too small and contiguous to lands with NWC
Bridger Jack Mesa	564	564	0	Natural in appearance and contiguous to Bridger Jack Mesa WC
Bridger Jack Mesa 2	17	0	17	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Bridger Jack Mesa 3	18	0	18	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Bridger Jack Mesa 5	33	0	33	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Bridger Jack Mesa 6	2	0	2	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Butler Wash 7	43	0	43	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Copper Point 1	820	0	820	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Copper Point 2	3,595	0	3,595	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)

Table O.2 Other Non-WSA Lands Proposed for Wilderness; Total Acreage, and Acreage with and without Wilderness Characteristics

External Proposal Area (Name)	Total Acres[1]	Acres possessing Wilderness Characteristics (WC)[2]	Acres not having Wilderness Characteristics (NWC)	Comments
Dark Canyon 1	27	0	27	Not natural in appearance due to multiple routes
Dark Canyon 2	90	0	90	Not natural in appearance due to multiple routes
Dark Canyon 6	13	0	13	Not natural in appearance due to multiple routes
Dark Canyon 7	22	0	22	Not natural in appearance due to multiple routes
Dark Canyon 8	10	0	10	Not natural in appearance due to multiple routes
Dark Canyon 9	11	0	11	Not natural in appearance due to multiple routes
Dark Canyon 10	22	0	22	Not natural in appearance due to multiple routes
Dark Canyon 11	63	0	63	Not natural in appearance due to multiple routes
Dark Canyon 12	35	0	35	Not natural in appearance due to multiple routes
Dark Canyon 13	122	0	122	Not natural in appearance due to multiple routes
Dark Canyon 16	28	0	28	Not natural in appearance due to multiple routes
Fish Owl Creek Cyns1	75	0	75	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Fish Owl Creek Cyns2	53	0	53	Not natural in appearance due to general disturbances – multiple routes
Fish Owl Creek Cyns3	134	0	134	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Gooseneck 4	241	0	241	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Grand Gulch A	7,485	7,485	0	Natural in appearance and is contiguous to Grand Gulch ISA (Pine Canyon WSA)
Grand Gulch B	643	643	0	Natural in appearance and is contiguous to WSA
Grand Gulch 13	68	0	68	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)

Table O.2 Other Non-WSA Lands Proposed for Wilderness; Total Acreage, and Acreage with and without Wilderness Characteristics

External Proposal Area (Name)	Total Acres[1]	Acres possessing Wilderness Characteristics (WC)[2]	Acres not having Wilderness Characteristics (NWC)	Comments
Grand Gulch 14	246	0	246	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Hammond Canyon	4,702	4,702	0	Natural in appearance and has outstanding opportunities for solitude and primitive recreation and contiguous to Grand Gulch ISA and WC
Hatch Lockhart Hart 1	12,578	0	12,578	Natural in appearance but lacks outstanding opportunities for solitude and primitive recreation
Hatch Lockhart Hart 2	7,563	0	7,563	Not natural in appearance due to multiple routes, and a permanent cow camp and cabin
Hatch Lockhart Hart 3	1,765	1,765	0	Natural in appearance and contiguous to WC
Hatch Lockhart Hart 4	225	0	225	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Hatch Lockhart Hart 5	398	0	398	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Hatch Lockhart Hart 6	180	0	180	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Hatch Lockhart Hart 7	278	0	278	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Hatch Lockhart Hart 9	131	0	131	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Hatch Lockhart Hart 11	11	0	11	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Hatch Lockhart Hart 23	204	0	204	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Indian Creek A	3,916	3,916	0	Natural in appearance and contiguous to Indian Creek WC and Canyonlands NP AE
Indian Creek B	100	100	0	Natural in appearance and contiguous to Indian Creek WC and Canyonlands NP AE
Indian Creek C	293	293	0	Natural in appearance and contiguous to Indian Creek WC and Canyonlands NP AE

Table O.2 Other Non-WSA Lands Proposed for Wilderness; Total Acreage, and Acreage with and without Wilderness Characteristics

External Proposal Area (Name)	Total Acres[1]	Acres possessing Wilderness Characteristics (WC)[2]	Acres not having Wilderness Characteristics (NWC)	Comments
Indian Creek Adjustment	26	26	0	Natural in appearance and contiguous to Indian Creek WC and Canyonlands NP AE
Indian Creek 4	43	0	43	Not natural in appearance due to multiple routes
Lime Creek	5,556	5,556	0	Natural in appearance and has outstanding opportunities for solitude or primitive recreation
Monument Canyon	18,178	0	18,178	Not natural in appearance due to multiple routes and seismic lines
Nokai Dome 2	58	0	58	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Red Rock Plateau 2	28	0	28	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Red Rock Plateau A	17,011	17,011	0	Natural in appearance and has outstanding opportunities for solitude and primitive recreation
Red Rock Plateau B	38,918	0	38,918	Not natural in appearance due to multiple access routes
Red Rock Plateau C	6,195	0	6,195	Not natural in appearance due to multiple access routes
Road Canyon	163	163	0	Natural in appearance and contiguous to Road Canyon WSA
San Juan River A	36	0	36	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Shay Mountain 1	188	0	188	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Shay Mountain A	6,708	6,708	0	Natural in appearance and has outstanding opportunities for solitude and primitive recreation
Shay Mountain B	7,149	0	7,149	Not natural in appearance due to multiple access routes and vegetative treatments (chaining).
Shay Mountain C	973	0	973	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
The Needle A	3,717	0	3,717	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)

Table O.2 Other Non-WSA Lands Proposed for Wilderness; Total Acreage, and Acreage with and without Wilderness Characteristics

External Proposal Area (Name)	Total Acres[1]	Acres possessing Wilderness Characteristics (WC)[2]	Acres not having Wilderness Characteristics (NWC)	Comments
The Needle B	7,023	0	7,023	Not natural in appearance due to evidence of mining activities and a permanent cow camp
The Tabernacle A	6,459	0	6,459	Natural in appearance, but has no outstanding opportunities for solitude or primitive recreation
The Tabernacle B	982	0	982	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Tin Cup Mesa	15,897	0	15,897	Not natural in appearance due to multiple vehicle routes and seismic lines
Upper Red Canyon A	24,918	24,918	0	Natural in appearance and has outstanding opportunities for solitude and primitive recreation
Upper Red Canyon B	158	0	158	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Valley of the Gods A	13,668	13,668	0	Natural in appearance and has outstanding opportunities for solitude and primitive recreation
Valley of the Gods B	891	0	891	Not natural in appearance due to multiple vehicle routes, backcountry airstrip, and seismic lines
White Canyon	6,292	6,292	0	Natural in appearance and has outstanding opportunities for solitude and primitive recreation.
White Canyon 1	1,140	0	1,140	Not natural in appearance due to multiple routes
White Canyon 2	178	0	178	Not natural in appearance due to multiple routes
White Canyon 3	636	0	636	Not natural in appearance due to multiple routes
White Canyon 4	231	0	231	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
White Canyon 5	84	0	84	Not natural in appearance due to mining disturbance
White Canyon 6	12	0	12	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
White Canyon 7	191	0	191	Not natural in appearance due to multiple routes
White Canyon 8	381	381	0	Natural in appearance and contiguous to Cheesebox Canyon WSA

Table O.2 Other Non-WSA Lands Proposed for Wilderness; Total Acreage, and Acreage with and without Wilderness Characteristics

External Proposal Area (Name)	Total Acres[1]	Acres possessing Wilderness Characteristics (WC)[2]	Acres not having Wilderness Characteristics (NWC)	Comments
White Canyon 9	1,238	1,238	0	Natural in appearance and contiguous to Gravel/Long WC
White Canyon 10	1,228	0	1,228	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
White Canyon 11	124	0	124	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
White Canyon 14	39	0	39	Not natural in appearance due to multiple routes
White Canyon 15	38	0	38	Size too small and contiguous to NWC (*1999 Utah Wilderness Inventory*)
Totals	**251,142**	**95,475**	**155,667**	

[1] Public lands managed by Monticello Field Office. Excludes acreage encompassed by State lands, Wilderness Study Areas, and lands inventoried in 1999 and found by BLM to lack wilderness character.

[2] Acres judged by BLM as likely to possess wilderness characteristics.

The acreage described in the tables shown above, when added to acreage within WSAs, encompasses the totality of acreage included in external wilderness proposals.

A complete record of findings regarding non-WSA lands with wilderness characteristics can be found in the Administrative Record accompanying the Monticello RMP Revision.

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APPENDIX P.
FILM PERMITS: MINIMUM IMPACT CRITERIA

P.1 MINIMUM-IMPACT CRITERIA FOR ALL BLM LANDS

Filming is allowed in all areas provided the following criteria are met:

1. Project would not adversely impact sensitive habitat or species.
2. Project would not adversely impact Native American sacred site(s) and/or National Register eligible sites.
3. Project does not involve use of pyrotechnics more than a campfire in an appropriate setting.
4. Filming allowed in all areas, provided impacts to land, air, or water can be avoided, mitigated, or reclaimed.
5. Project does not involve use of explosives.
6. Project, involving use of exotic animal species, includes provisions for containment and/or capture of animals.
7. Project does not involve extensive restriction of public access.
8. Limited filming would be allowed in areas with the following sensitive resources provided that impacts to these sensitive resources can be avoided, mitigated, or reclaimed:
    a. Historic, Cultural or Paleontological sites
    b. Sensitive soils (see chapter 3 Soils section for definition of these soils)
    c. Relict environments
    d. Wetlands, floodplains, or riparian areas
    e. Water quality
    f. Wildlife habitat
9. Use of heavy equipment would be allowed provided that any resource damage can be avoided, mitigated, or reclaimed.
10. Criteria for use of aircraft (helicopter, fixed wing, hot air balloons):
    a. No refueling requested within WSAs and Designated Wilderness Areas.
    b. Use of aircraft in an area with wildlife concerns would be allowed if a survey or inventory by an approved biologist demonstrates that animals are not present, or, if animals are present, aircraft use is not proposed for more than one day and does not exceed the frequency of 2 projects per 30-day period.
    c. Use of aircraft in areas with outstanding recreational opportunities, Wilderness Study Areas, designated Wilderness, or close to residential areas is proposed for no more than 2 days and does not exceed the frequency of 3 two-day projects per 30-day period.
    d. Aircraft use proposed within ½ mile of any designated campground would be during low-use times (i.e. weekdays and not during major holidays between 8:00 a.m. and 6:00 p.m.)
11. Project does not involve use of more than 20 livestock in these locations. Impacts from livestock can be avoided, mitigated, or reclaimed.

12. Project does not involve 15 or more production vehicles. Vehicles would only be allowed on Wilderness Study Areas or designated Wilderness boundary roads.
13. Project does not involve 50 or more people within these areas.
14. The activity within these areas would not continue in excess of 10 days.

If filming projects do not meet the criteria listed above, site-specific NEPA will be required.

APPENDIX Q.

FINALIZED CONSERVATION MEASURES AND BEST MANAGEMENT PRACTICES (BMPS) FOR T&E SPECIES OF UTAH FROM THE LAND USE PLAN PROGRAMMATIC BAS AND SECTION 7 CONSULTATIONS—2007

As part of the proposed action, the BLM has included conservation measures to minimize or eliminate adverse impacts to federally listed species. These measures are listed by species:

Q.1 BALD EAGLE (*HALIAEETUS LEUCOCEPHALUS*)

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Bald eagle (*Haliaeetus leucocephalus*). This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the Service.

1. BLM will place restrictions on all authorized (i.e., permitted) activities that may adversely impact bald eagles, their breeding habitat, roosting sites, and known winter concentration areas, in order to avoid or minimize potential impacts.

   Measures have been adapted from guidance published in the *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances* (USFWS 2002), as well as coordination between BLM and the Service. Measures include, but may not be limited to seasonal/daily timing limitations, and/or spatial buffers as follows:

   - Temporary activities[1] or habitat alterations that may disturb nesting bald eagles will be restricted from *January 1st, to August 31st* within 1.0 mile of Bald eagle nest sites. Exceptions may be granted where no nesting behavior is initiated prior to June 1st.
   - Temporary activities or habitat alterations that may disturb bald eagles will be restricted within 0.5 mile of known winter concentration areas from *November 1st to March 31st*. Additionally, where daily activities must occur within these spatial buffers, and are approved through subsequent consultation, activities should be properly scheduled to occur after 9 a.m. and terminate at least one hour before official sunset to ensure that bald eagles using these roosts are allowed the opportunity to vacate their roost in the morning and return undisturbed in the evening.
   - No permanent[2] infrastructure will be placed within 1.0 mile of bald eagle nest sites or within 0.5 mile of bald eagle winter concentration areas.
   - Where activities are authorized within breeding habitats or known winter concentration areas, monitoring efforts would document what, if any, impacts occur during project

[1] Temporary activities are defined as those that are completed prior to the start of the following raptor breeding season, leaving no permanent structures and resulting in no permanent habitat loss.

[2] Permanent activities continue for more than one breeding season and/or cause a loss of habitat or displace individuals through disturbance (e.g., creation of a permanent structure including but not limited to well pads, roads, pipelines, electrical power line).

implementation, and to what extent the species was affected. The results of these monitoring efforts would be carried forward in the design and implementation of future projects as part of the adaptive management process.

2. For all project-related survey and monitoring actions:
   - Reports must be provided to affected field offices within 15 days of completion of survey or monitoring efforts. Reports must follow field office guidance for BLM-specified formats for written and automated databases.
   - Any detection of bald eagle presence during survey or monitoring efforts must be reported to the authorized officer within 48 hours of detection.
3. Appropriately timed surveys in suitable bald eagle nesting habitat or identified concentration areas shall be conducted in accordance with approved protocols prior to any activities that may disturb bald eagles. Surveys would only be conducted by BLM-approved individuals or personnel.
4. BLM shall in coordination with cooperating agencies and/or partners (e.g., UDWR, Service, etc.), verify annual status (active vs. inactive) of all known bald eagle nests, and other identified concentration areas on BLM administered lands.
5. When project proposals that may affect threatened and endangered species are received, BLM will coordinate with the Service at the earliest possible date so that the Service can provide necessary information to minimize, or avoid, the need to redesign projects at a later date to include conservation measures that may be determined as appropriate by the Service.
6. BLM administered lands within 1.0 mile of bald eagle nests, or identified communal winter roosts, should not be exchanged or sold. If it is imperative that these lands be transferred out of BLM ownership, then every effort should be made to include conservation easements or voluntary conservation restrictions to protect the bald eagles and support their conservation.
7. Proponents of BLM authorized actions will be advised that roadside carrion can attract foraging bald eagles and potentially increase the risk of vehicle collisions with individuals feeding on carrion. When carrion occurs on the road, appropriate officials will be notified for necessary removal.
8. Power lines will be built to standards and guidelines identified by the Avian Protection Plan (APP) Guidelines (APLIC and USFWS 2005).
9. BLM will make educational information available to project proponents and the general public pertaining to the following topics:
   - appropriate vehicle speeds and the associated benefit of reduced vehicle collisions with wildlife;
   - use of lead shot (particularly over water bodies);
   - use of lead fishing weights; and
   - general ecological awareness of habitat disturbance.
10. Since bald eagles are often dependent on aquatic species as prey items, BLM will periodically review existing water quality records (e.g., UDEQ, UDWR, USGS) from monitoring stations on, or near, important bald eagle habitats (i.e., nests, roost, concentration areas) on BLM lands for any conditions that could adversely affect bald eagles or their prey. If water quality problems are identified, BLM will contact the appropriate jurisdictional entity to cooperatively monitor the condition and/or take corrective action.

Q.2 MEXICAN SPOTTED OWL (*STRIX OCCIDENTALIS LUCIDA*)

The following list of measures provides species-specific guidance, intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Mexican spotted owl (*Strix occidentalis lucida*). This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the Service.

1. BLM will place restrictions on all authorized (permitted) activities that may adversely affect the Mexican spotted owl in identified PACs, breeding habitat, or designated critical habitat, to reduce the potential for adverse impacts to the species. Restrictions and procedures have been adapted from guidance published in the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (USFWS 2002b), as well as coordination between BLM and the Service. Measures include:
   - Surveys, according to USFWS protocol, will be required prior to any disturbance related activities that have been identified to have the potential to impact Mexican spotted owl, unless current species occupancy and distribution information is complete and available. All surveys must be conducted by USFWS certified individuals, and approved by the BLM authorized officer.
   - Assess habitat suitability for both nesting and foraging using accepted habitat models in conjunction with field reviews. Apply the appropriate conservation measures below if project activities occur within 0.5 mile of suitable owl habitat, dependent in part on if the action is temporary[3] or permanent[4]:
   - For all temporary actions that may impact owls or suitable habitat:
     - If action occurs entirely outside of the owl breeding season, and leaves no permanent structure or permanent habitat disturbance, action can proceed without an occupancy survey.
     - If action will occur during a breeding season, survey for owls prior to commencing activity. If owls are found, activity should be delayed until outside of the breeding season.
     - Eliminate access routes created by a project through such means as raking out scars, revegetation, gating access points, etc.
   - For all permanent actions that may impact owls or suitable habitat:
     - Survey two consecutive years for owls according to established protocol prior to commencing of activity.
     - If owls are found, no actions will occur within 0.5 mile of identified nest site.
     - If nest site is unknown, no activity will occur within the designated Protected Activity Center (PAC).

[3] Temporary activities are defined as those that are completed prior to the start of the following raptor breeding season, leaving no permanent structures and resulting in no permanent habitat loss.

[4] Permanent activities continue for more than one breeding season and/or cause a loss of owl habitat or displaces owls through disturbances, e.g., creation of a permanent structure including but not limited to well pads, roads, pipelines, electrical power line.

- Avoid placing permanent structures within 0.5 mi of suitable habitat unless surveyed and not occupied.
- Reduce noise emissions (e.g., use hospital-grade mufflers) to 45 dBA at 0.5 mile from suitable habitat, including canyon rims (Delaney et al. 1997). Placement of permanent noise-generating facilities should be determined by a noise analysis to ensure noise does not encroach upon a 0.5 mile buffer for suitable habitat, including canyon rims.
- Limit disturbances to and within suitable owl habitat by staying on designated routes.
- Limit new access routes created by the project.

2. BLM will, as a condition of approval (COA) on any project proposed within identified PACs, designated critical habitat, or within spatial buffers for Mexican spotted owl nests (0.5 mile), ensure that project proponents are notified as to their responsibilities for rehabilitation of temporary access routes and other temporary surface disturbances, created by their project, according to individual BLM Field Office standards and procedures, or those determined in the project-specific Section 7 Consultation.
3. BLM will require monitoring of activities in designated critical habitat, identified PACs, or breeding habitats, wherein it has been determined that there is a potential for take. If any adverse impacts are observed to occur in a manner, or to an extent that was not considered in the project-specific Section 7 Consultation, then consultation must be reinitiated.

   Monitoring results should document what, if any, impacts to individuals or habitat occur during project construction/implementation. In addition, monitoring should document successes or failures of any impact minimization, or mitigation measures. Monitoring results would be considered an opportunity for adaptive management, and as such, would be carried forward in the design and implementation of future projects.

4. For all survey and monitoring actions:
   - Reports must be provided to affected field offices within 15 days of completion of survey or monitoring efforts.
   - Report any detection of Mexican spotted owls during survey or monitoring to the authorized officer within 48 hours.
5. BLM will, in areas of designated critical habitat, ensure that any physical or biological factors (i.e., the primary constituent elements), as identified in determining and designating such habitat, remains intact during implementation of any BLM-authorized activity.
6. For all BLM actions that *"may adversely affect*" the primary constituent elements in any suitable Mexican spotted owl habitat, BLM will implement measures as appropriate to minimize habitat loss or fragmentation, including rehabilitation of access routes created by the project through such means as raking out scars, revegetation, gating access points, etc.
7. Where technically and economically feasible, use directional drilling from single drilling pads to reduce surface disturbance, and minimize or eliminate needing to drilling in canyon habitats suitable for Mexican spotted owl nesting.
8. Prior to surface disturbing activities in Mexican spotted owl PACs, breeding habitats, or designated critical habitat, specific principles should be considered to control erosion. These principles include:

- Conduct long-range transportation planning for large areas to ensure that roads will serve future needs. This will result in less total surface disturbance.
- Avoid surface disturbance in areas with high erosion hazards to the greatest extent possible. Avoid mid-slope locations, headwalls at the source of tributary drainages, inner valley gorges, and excessively wet slopes such as those near springs. In addition, avoid areas where large cuts and fills would be required.
- Locate roads to minimize roadway drainage areas and to avoid modifying the natural drainage areas of small streams.

9. Project developments should be designed, and located to avoid direct or indirect loss or modification of Mexican spotted owl nesting and/or identified roosting habitats.
10. Water production associated with BLM authorized actions should be managed to ensure maintenance or enhancement of riparian habitats.

Q.3 SOUTHWESTERN WILLOW FLYCATCHER (*EMPIDONAX TRAILLII EXTIMUS*)

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Southwestern willow flycatcher (*Empidonax traillii extimus*). This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. Surveys will be required prior to operations that *"may adversely affect"* the Southwestern willow flycatcher unless species occupancy data and distribution information is complete and available. Surveys will only be conducted by BLM-approved personnel. In the event species occurrence is verified, project proponents may be required to modify operational plans at the discretion of the authorized officer. Modifications may include appropriate measures for minimization of adverse effects to the Southwestern willow flycatcher and its habitat.
2. BLM will monitor and restrict, when and where necessary, authorized or casual use activities that *"may adversely affect"* the Southwestern willow flycatcher, including but not limited to, recreation, mining, and oil and gas activities. Monitoring results should be considered in the design and implementation of future projects.
3. To monitor the impacts of BLM-authorized projects determined *"likely to adversely affect"* the Southwestern willow flycatcher, BLM should prepare a short report describing progress, including success of implementation of all associated mitigation. Reports shall be submitted annually to the USFWS Utah Field Office by March 1st beginning one full year from date of implementation of the proposed action. The report shall list and describe the following items:
   - Any unforeseen adverse effects resulting from activities of each site-specific project (may also require reinitiation of formal Consultation);
   - When, and if, any level of anticipated incidental take is approached (as allowed by separate Incidental Take Statements of site-specific Formal Section 7 Consultation efforts);
   - When, or if, the level of anticipated take (as allowed by separate Incidental Take Statements from site-specific formal consultations) is exceeded; and
   - Results of annual, periodic monitoring which evaluate the effectiveness of the reasonable and prudent measures or terms and conditions of the site-specific Consultation.

4. BLM should avoid granting activity permits or authorizing development actions in Southwestern willow flycatcher habitat. Unoccupied potential habitat should be protected in order to preserve them for future management actions associated with the recovery of the Southwestern willow flycatcher.
5. BLM will ensure project design incorporates measures to avoid direct disturbance to populations and suitable habitats where possible. At a minimum, project designs should include consideration of water flows, slope, seasonal and spatial buffers, possible fencing, and pre-activity flagging of critical areas for avoidance.
6. The BLM will continue to address illegal and unauthorized OHV use and activity upon BLM administered lands. In order to protect, conserve, and recover the Southwestern willow flycatcher in areas of heavy unauthorized use, temporary closures, or use restrictions beyond those which are already in place, may be imposed. As funding allows, BLM should complete a comprehensive assessment of all OHV use areas that interface with Southwestern willow flycatcher populations. Comparison of Southwestern willow flycatcher populations and OHV use areas using GIS would give BLM personnel another tool to manage and/or minimize impacts.
7. All surface disturbing activities should be restricted within a 0.25 mile buffer from suitable riparian habitats and permanent surface disturbances should be avoided within 0.5 mile of suitable Southwestern willow flycatcher habitat.

   Unavoidable ground disturbing activities in occupied Southwestern willow flycatcher habitat should only be conducted when preceded by current year survey, should only occur between August 16 and April 30 (the period when Southwestern willow flycatcher are not likely to be breeding), and should be monitored to ensure that adverse impacts to Southwestern willow flycatcher are minimized or avoided, and to document the success of project specific mitigation/protection measures. As monitoring is relatively undefined, project specific requirements must be identified.

8. BLM will properly consider nesting periods for Southwestern willow flycatcher when conducting horse gathering operations in the vicinity of habitat.
9. BLM will ensure that plans for water extraction and disposal are designed to avoid changes in the hydrologic regime that would likely result in loss or undue degradation of riparian habitat.
10. Native species will be preferred over non-native for revegetation of habitat in disturbed areas.
11. BLM will coordinate with other agencies and private landowners to identify voluntary opportunities to modify current land stewardship practices that may impact the Southwestern willow flycatcher and its habitats.
12. Limit disturbances to within suitable habitat by staying on designated routes.
13. Ground-disturbing activities will require monitoring throughout the duration of the project to ensure that adverse impacts to Southwestern willow flycatcher are avoided. Monitoring results should document what, if any, impacts to individuals or habitat occur during project construction/implementation. In addition, monitoring should document successes or failures of any impact minimization or mitigation measures. Monitoring results would be considered an opportunity for adaptive management and, as such, would be carried forward in the design and implementation of future projects.

14. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in Southwestern willow flycatcher habitat.
15. Habitat disturbances (i.e., organized recreational activities requiring special use permits, drilling activities, etc.) will be avoided within 0.25 mile of suitable Southwestern willow flycatcher habitat from May 1 to August 15.
16. Grazing allotments that contain habitat for the species will be managed with consideration for recommendations provided by the Southwestern Willow Flycatcher Recovery Plan, and other applicable research.

Q.4 Colorado River Endangered Fishes

Bonytail (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), Humpback chub (*Gila cypha*), and Razorback sucker (*Xyrauchen texanus*)

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Colorado pikeminnow, Humpback chub, bonytail, and razorback sucker, herein referred to as the Colorado River fishes. This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. Monitoring of impacts of site-specific projects authorized by the BLM will result in the preparation of a report describing the progress of each site-specific project, including implementation of any associated reasonable and prudent measures or reasonable and prudent alternatives. This will be a requirement of project proponents and will be included as a condition of approval (COA) on future proposed actions that have been determined to have the potential for take. Reports will be submitted annually to the USFWS - Utah Field Office, beginning after the first full year of implementation of the project, and shall list and describe:
   - Any unforeseen direct or indirect adverse impacts that result from activities of each site-specific project;
   - Estimated levels of impact or water depletion, in relation to those described in the original project-level Consultation effort, in order to inform the Service of any intentions to reinitiate Section 7 Consultation; and
   - Results of annual, periodic monitoring which evaluates the effectiveness of any site-specific terms and conditions that are part of the formal Consultation process. This will include items such as an assessment of whether implementation of each site-specific project is consistent with that described in the BA, and whether the project has complied with terms and conditions.
2. The BLM shall notify the USFWS immediately of any unforeseen impacts detected during project implementation. Any implementation action that may be contributing to the introduction of toxic materials or other causes of fish mortality must be immediately stopped until the situation is remedied. If investigative monitoring efforts demonstrate that the source of fish mortality is not related to the authorized activity, the action may proceed only after notification of USFWS authorities.

3. Unoccupied, suitable habitat areas should be protected in order to preserve them for future management actions associated with the recovery of the Endangered Colorado River Fish, as well as approved reintroduction, or relocation efforts.
   - BLM will avoid impacts where feasible, to habitats considered most representative of prime suitable habitat for these species.
   - Surface disturbing activities will be restricted within ¼ mile of the channel centerline of the Colorado, Green, Duchesne, Price, White, and San Rafael Rivers
   - Surface disturbing activities proposed to occur within floodplains or riparian areas will be avoided unless there is no practical alternative or the development would enhance riparian/aquatic values. If activities must occur in these areas, construction will be designed to include mitigation efforts to maintain, restore, and/or improve riparian and aquatic conditions. If conditions could not be maintained, offsite mitigation strategies should be considered.
4. BLM will ensure project proponents are aware that designs must avoid as much direct disturbance to current populations and known habitats as is feasible. Designs should include:
   - protections against toxic spills into rivers and floodplains;
   - plans for sedimentation reduction;
   - minimization of riparian vegetation loss or degradation;
   - pre-activity flagging of critical areas for avoidance;
   - design of stream-crossings for adequate passage of fish; and
   - measures to avoid or minimize impacts on water quality at the 25-year frequency runoff
5. Prior to surface disturbing activities, specific principles will be considered to control erosion. These principles include:
   - Conduct long-range transportation planning for large areas to ensure that roads will serve future needs. This will result in less total surface disturbance.
   - Avoid, where possible, surface disturbance in areas with high erosion hazards.
   - Avoid mid-slope location of drill pads, headwalls at the source of tributary drainages, inner valley gorges, excessively wet slopes such as those near springs and avoid areas where large cuts and fills would be required.
   - Design and locate roads to minimize roadway drainage areas and to avoid modifying the natural drainage areas of small streams.
6. Where technically and economically feasible, project proponents will use directional drilling or multiple wells from a single pad to reduce surface disturbance and eliminate drilling in suitable riparian habitat. Ensure that such drilling does not intercept or degrade alluvial aquifers. Drilling will not occur within 100 year floodplains that contain listed fish species or their designated critical habitats.
7. The Utah Oil and Gas Pipeline Crossing Guidance (BLM National Science and Technology Center), or other applicable guidance, will be implemented for oil and gas pipeline river/stream crossings.
8. In areas adjacent to 100-year floodplains, particularly in systems prone to flash floods, BLM will analyze the risk for flash floods to impact facilities. Potential techniques may include the use of closed loop drilling and pipeline burial or suspension as necessary to minimize the potential for equipment damage and resultant leaks or spills.

9. Water depletions from any portion of the Upper Colorado River drainage basin above Lake Powell are considered to adversely affect and adversely modify the critical habitat of these endangered fish species. Section 7 consultation will be completed with the Service prior to any such water depletions.
10. Design stream-crossings for adequate passage of fish (if present), minimum impact on water quality, and at a minimum, a 25-year frequency run-off.

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