CHAPTER 2:
ALTERNATIVES, INCLUDING THE PREFERRED ALTERNATIVE

INTRODUCTION

As noted in Chapter 1, many aspects of the desired conditions of Guadalupe Mountains National Park are defined in the establishing legislation, the park's purpose and significance statements, and the servicewide mandates and policies that apply to all units of the national park system. Within these parameters, the NPS planning team solicited input regarding the park's desired condition from the public, NPS staff, government agencies, tribal officials, and other organizations. The National Park Service then used this information to develop four planning alternatives that reflect the range of ideas proposed by the National Park Service and the public.

This chapter describes the management zones that define desired conditions for park resources and visitor experiences within the park. It then presents four alternative approaches for managing the park for the next 15 to 20 years. Each alternative includes the concept, management zones, and costs. The NPS planning process requires development of action alternatives (which for this plan include the preferred alternative, alternative B, and alternative C) which are compared with current park management and trends (alternative A, the no action alternative).

Supporting information includes identification of mitigation measures that would be applied regardless of the alternative that was selected, future plans that would be needed, and alternatives or actions that were not included in any of the alternatives, with explanations of why they were dismissed. The environmentally preferred alternative is identified, and tables are presented that highlight the differences among the alternatives and summarize their impacts.

El Capitan from Williams Ranch Road

FORMULATION OF MANAGEMENT ZONES

PURPOSE OF MANAGEMENT ZONES

Management zones are descriptions of desired conditions for park resources and visitor experiences in different areas of the park. The management zones identify the widest range of potential, appropriate resource conditions, visitor experiences, and facilities for the park that fall within the scope of the park's purpose, significance, and special mandates.

Each management zone describes a different approach to administering or treating the resources or uses within a specified area. Management zones are based on the desired outcomes for natural and cultural resource conditions and visitor opportunities. To achieve these outcomes, management approaches include target goals or objectives for the resources and visitor experiences within the zone. Two of the factors considered during the development of the management zones were visitor use capacity and management of wilderness.

Visitor Use Capacity

A consideration when developing management zones is the intensity of visitor use that can be sustained within various part of the park.

The National Park Service defines visitor use capacity as the type and level of visitor use that can be accommodated while sustaining desired resource conditions and visitor experiences in the park so they are left unimpaired for future generations. General management plans are required to include identification and implementation commitments for use capacities for all areas of a park. User capacity does not necessarily involve identifying a maximum number of visitors. It also may not require closing or limiting visitor access to particular areas. Rather, user capacity is measured by comparing desired resource and visitor experience conditions to actual conditions and, when an imbalance is noted, employing management practices to return to the desired conditions. Factors considered may include visitor density, types of activities, types of resources, and measurable impacts on those resources.

Managing user capacity involves the following steps:

- Identify desired conditions for resources and visitors.
- Identify indicators, which are the attributes to monitor for desired conditions.
- Identify standards, which are the limits of acceptable change for the indicators.
- Monitor the indicators against the standards.
- Take management actions as needed to ensure that standards continue to be met.
- Evaluate and make adjustments to the capacity management process based on ongoing resource or visitor information.

The management zones defined in the following pages establish the desired conditions within each area of the park to which that zone is applied. In subsequent planning that tiers from this *General Management Plan*, these desired conditions will serve as the basis for developing mechanisms, including the indicators and standards that denote when visitor capacity is being approached or exceeded, and the management actions that would be implemented when concern was indicated.

Within Guadalupe Mountains National Park, visitor use capacity planning currently is needed at McKittrick Canyon; the Pine Springs visitor center, campground, and trailhead; and Frijole Ranch. The use of this technique may also be appropriate at the Salt Basin Dunes within the 15- or 20-year timeframe of this document.

Because this *General Management Plan* addresses the future of Guadalupe Mountains National Park at a broad, overview level, it does not include details for addressing visitor use capacity at specific park locations or facilities. However, the National Park Service commits to developing and implementing a visitor use capacity program as part of implementing this *General Management Plan*.

Management of Wilderness

The Wilderness Act mandates the types of visitor and administrative activities, as well as the level and types of facilities development, allowed in designated wilderness areas. Procedures for managing lands that possess wilderness qualities have been developed by Congress and the National Park Service. Consistent with these procedures

- The park staff performed a wilderness eligibility assessment to identify lands within Guadalupe Mountains National Park that possess wilderness qualities and should be studied for future wilderness designation. The results are presented in appendix D of this *General Management Plan*.
- A future wilderness study will evaluate the lands that were identified as possessing wilderness qualities to determine if they should be recommended to Congress for wilderness designation.

Until this process is completed, the National Park Service will manage these lands to preserve their wilderness qualities. Consistent with this approach, all lands found eligible for future consideration for wilderness were assigned to the backcountry zone in all of the action alternatives. This zone would protect these lands from incompatible development and inappropriate use.

MANAGEMENT ZONES FOR THE GENERAL MANAGEMENT PLAN

Each of the action alternatives for Guadalupe Mountains National Park has six management zones. Alternative A, the no action / continue current management alternative, does not include the use of management zones, and also may not meet all park management goals.

Different physical, biological, and visitor opportunities and experiences are emphasized in each management zone. These factors then define the types of activities or facilities that are appropriate within the area to which the zone is applied.

Although the configuration of the management zones is different in each of the action alternatives, all of these alternatives are designed to meet all of the park-specific purposes, significance statements, and mission goals, and to the servicewide mandates and policies that were described earlier in this general management plan. for example an archeological site will be protected, regardless of the zone in which it occurs. However, the *use* of that site for interpretive or educational purposes could vary, depending on the management zone applied to the site.

The six management zones used in the action alternatives include

- designated wilderness
- backcountry (assessed as eligible for wilderness)
- wilderness threshold
- frontcountry
- developed
- motorized scenic corridor.

Table 3 presents the characteristics of each management zone. These include

- the desired resource condition or character
- the desired visitor experience, or what the visitor sees, feels, and/or encounters
- appropriate activities or facilities, which describe what the visitor would be doing and the facilities that might be suitable

A description of each zone is provided below. The description includes the types of indicators that could be monitored to ensure that

the desired conditions are being maintained, and examples of actions that could be taken when the potential for nonconformance with desired resource conditions or visitor experiences is indicated.

Designated Wilderness

Only the lands that have been designated as wilderness by Congress in accordance with the Wilderness Act are assigned to the designated wilderness zone. These lands are managed to preserve wilderness resources and values, as prescribed by law. They present outstanding opportunities for solitude or primitive and unconfined recreation. Visitor facilities within areas assigned to the designated wilderness zone are primitive or absent. The desired resource condition or character, desired visitor experience, and appropriate activities or facilities in designated wilderness are presented in table 3.

Park staff would monitor resource conditions and visitor use patterns in the designated wilderness. General information, such as permit information and follow-up use data, would continue to be collected. Specific resource and visitor experiences would continue to be monitored. The number of permits issued could be adjusted to protect wilderness resources and the visitor experience.

Indicators in this zone could include, but may not be limited to

- the condition of important resources, such as riparian communities, indicator species, soil erosion, vegetation cover, and historic structures
- visible impacts, such as the presence of visitor-created trails, denuded or compacted campsites, trash, wood cutting, or invasive plants
- visitor experience values, such as encounter rates, camp area capacity, human or livestock excrement, and aesthetics

A combination of indicators would be monitored in specific popular or resource-sensitive areas to ensure that desired resource conditions were maintained and that desired visitor experiences were achieved. The park's wilderness management plan (NPS 1995d) would be updated to include specific indicators and standards to achieve wilderness management objectives.

Actions that could be undertaken to address adverse changes in resource conditions or visitor experiences could include, but may not be limited to managing

- the resource, such as removing invasive plants or rehabilitating damaged areas
- user activities, such as modifying permit numbers to reduce or shift use
- information, which would involve educating and informing wilderness users
- facilities, such as modifying trails, campsites, and trailheads
- administrative practices, which could involve changing wilderness staff levels or altering permit requirements for special uses

Details regarding indicators, standards, monitoring, and management actions to protect wilderness resources and visitor experiences within this zone will be included in the next update of park's wilderness management plan (NPS 1995).

Backcountry

The backcountry zone provides the same wilderness resource protection and visitor experience as the designated wilderness zone. However, the land in this zone has not been designated as wilderness in accordance with the Wilderness Act.

Table 3: Guadalupe Mountains National Park Management Zones for the Action Alternatives

Management Zone	Designated Wilderness	Backcountry	Wilderness Threshold	Frontcountry	Developed	Motorized Scenic Corridor
Resource condition or character	In these undisturbed natural settings, natural processes predominate. Visitor access and use improvements are primitive or absent. Significant cultural resources could be present and, as appropriate, are stabilized and preserved.	These lands are eligible for future consideration as wilderness, but have not been so designated by Congress. Resource character and condition are the same as designated wilderness.	Minimally disturbed natural settings are managed for a low level of human intervention and development. Significant cultural resources are stabilized and preserved as necessary.	Lands are natural in appearance with a moderate level of human intervention and development. Natural systems could be modified. Significant cultural resources are preserved or potentially rehabilitated for operational or visitor use.	The landscape includes natural features, but is highly modified and managed for visitor use. Significant cultural resources are preserved or rehabilitated for operational or visitor use.	This zone applies to vehicular corridors which pass through natural settings. Land within this zone has been moderately to highly modified.
Visitor experience	Access could be challenging. Visits are self-directed. Visitors experience a sense of high adventure and risk, solitude, and wildness. Chances for encounters with other people are extremely low.	Desired visitor experiences are the same as designated wilderness.	Access to and throughout these areas could be moderately challenging. Visitors experience a moderate sense of risk, adventure, and remoteness. Chances for encounters with other people are low.	Access presents a low to moderate challenge and a low level of adventure and risk. Encounters with other visitors are common.	Areas are easily and conveniently accessed by foot, bicycle, or motor vehicle from improved roads or trails. Frequent encounters with large numbers of visitors and staff are expected.	The corridors are accessible for automobiles (some are limited to four-wheel drive), bicycles, or hikers. Visitors experience landscapes with diverse, scenic features and frequent encounters with other people and vehicles.
Appropriate activities or facilities	Dispersed visitor activities predominate, including hiking, horseback riding, primitive camping, exploring, and wildlife viewing. Development could include narrow, unsurfaced trails; primitive trail markers; minimal trail drainage and erosion control measures; designated tent pads; and primitive sanitary facilities.	Appropriate activities are the same as designated wilderness.	Moderately dispersed visitor activities include hiking, horseback riding, resource education and discovery, and primitive picnicking and camping. Developments could include wider, more accessible trails; directional and interpretive signs; rustic benches and shade improvements; and rustic restrooms.	Visitor activities include hiking, horseback riding, picnicking, hike-in camping, nature study, and wildlife and scenic viewing, Developments could include improved and surfaced trails, gravel parking lots, picnic and staging areas, walk-in campground sites, and modern restrooms.	Activities include nature study, developed picnicking and camping, and scenic viewing. Visitor developments could include visitor centers, paved trails and parking lots, picnic area clusters, developed campgrounds accessible by automobile or recreational vehicle, and modern restrooms. Park administration and operations developments include maintenance and administrative facilities and staff housing. Screening separates these facilities from visitor use areas.	Visitor activities include scenic driving, wildlife viewing, hiking, and nature study. Development includes graded and surfaced (gravel or paved) roads and pullouts, parking lots, interpretive displays, and modern restrooms.

All lands found eligible for future consideration as wilderness were assigned to the backcountry zone in all of the action alternatives. This zone would protect them from incompatible development. The indicators and actions that would be used to maintain the desired resource conditions and visitor experiences in backcountry zones would be the same as those described for the designated wilderness zone in table 3.

Wilderness Threshold

Areas within the wilderness threshold zone have few facilities and services, and provide a relatively remote or isolated visitor experience. As shown in table 3, improved trails, signs providing direction or interpretation, and rustic visitor facilities could be present in this zone. Levels of use primarily are controlled by proximity to trailheads and capacity of trail facilities.

Indicators would be monitored to ensure that desired resource conditions and visitor experiences are met. Indicators in this zone could include

- the condition of important resources, such as riparian communities, vegetation cover, and archeological or paleontological sites
- visible impacts, including the presence of visitor-created trails, soil erosion, trash, or invasive plants

Types of management actions to address changes in resource conditions could include defining trailheads, trail edges, and visitor use area; restoring disturbed sites; removing invasive plants and revegetating using native plants; and expanding educational programs.

Frontcountry

The frontcountry zone is generally applied to areas of moderate use in the more accessible, low-country parts of the park. Levels of use in this zone are primarily controlled by the presence and capacity of existing facilities such as roads, trails, parking areas, and trailheads. The desired resource condition or character, desired visitor experience, and appropriate activities or facilities in frontcountry areas are presented in table 3.

Indicators would be monitored to ensure that the desired conditions are met. These indicators could include

- the frequency with which use approaches or exceeds the design capacity of facilities such as roads, parking lots, and buildings
- the number of visitors at one time and sense of crowding at popular destinations
- the condition of natural and cultural resources
- visible impacts, such as the presence of visitor-created trails and unplanned widening of trails, soil erosion, and the presence of invasive plants
- visitor satisfaction, based on anything from formal surveys to oral comments or complaints

The National Park Service would continue to collect general information, such as visitor use patterns, parking problems, crowding in facilities and trailheads, vandalism, numbers of law enforcement incidents, accidents, waste quantity, and requests for special uses. This information would be analyzed to identify changes over time.

Management actions that could be taken to address unacceptable impacts in the frontcountry zone include

- improving trail delineation or hardening trails
- increasing education about resource protection
- implementing a permitting system for hike-in camping
- modifying facilities
- encouraging visitors to come during less crowded times or to visit less popular park areas

Developed

The developed zone includes the high-use areas of the park. The desired resource condition or character, desired visitor experience, and appropriate activities or facilities in developed areas are presented in table 3. Levels of use are primarily controlled by the physical capacity of facilities such as parking areas, campground sites, and picnic tables.

Park staff would collect the same information described in the frontcountry zone. This information would be analyzed for changes over time. Management actions that could be undertaken if unacceptable impacts occur would include those identified in the frontcountry zone. Additional, more intensive management could include

- developing parking management strategies
- designing facilities to confine or reduce impacts
- removing exotic plants
- restoring damaged areas

Motorized Scenic Corridor

Areas within the motorized scenic corridor zone provide access to improved visitor facilities, trailheads, historic and natural resource areas, and scenic resources in the low-country areas of the park. Levels of use within the motorized scenic corridor zone primarily are controlled by the improvement level and capacity of the roadways and the facilities they serve. The desired resource condition or character, desired visitor experience, and appropriate activities or facilities in motorized scenic corridors are presented in table 3.

Park staff would continue to collect general information, such as traffic levels, accident rates, road surface and shoulder condition, law enforcement incidents, and exceedences of parking capacity. This information would be analyzed to determine use characteristics and maintenance needs. More specific indicators and standards would be established to monitor for problems that typically develop along road corridors, such as the presence and expansion of invasive plants and the development of social trails.

The range of management actions that might be undertaken if unacceptable impacts occur along motorized scenic corridors could include, but would not be limited to,

- increasing education about resource protection
- defining road and parking facility edges, using signage so that parking is limited to desired locations, and providing pullouts
- defining trailheads
- improving surrounding facilities, such as by hardening walkways, trails, and access points leading from roads to reduce or confine impacts
- removing exotic plants
- restoring damaged areas

FORMULATION OF ALTERNATIVES

The alternatives focus on what resource conditions and visitor uses, experiences, and opportunities should be available at Guadalupe Mountains National Park rather than on the details of how these conditions, uses, and experiences should be achieved.

DEVELOPING MANAGEMENT CONCEPTS

This draft general management plan presents four alternatives for future management of Guadalupe Mountains National Park.

Alternative A, the no action alternative, represents a continuation of existing management. It is included as a baseline for comparing the consequences of implementing each action alternative. Alternative A does not necessarily meet all of the goals and objectives that are critical if the National Park Service is to consider the general management plan successful. The National Park Service may also have difficulty satisfying some of the park-specific purposes, significance statements, or mission goals, and/or some of the servicewide mandates and policies that were presented in Chapter 1 and appendix C.

The three action alternatives present different ways to manage resources and visitor use, and to improve facilities and infrastructure at Guadalupe Mountains National Park. An overall management concept was first developed for each action alternative. Consistent with its general concept, the action alternative was then designed so that it would meet all NPS general management planning goals and objectives and would facilitate meeting servicewide mandates and policies. Within this framework

- Alternative B would increase opportunities for a wilderness experience.
- Alternative C would focus on expanding visitor opportunities and experiences.
- The NPS' preferred alternative would incorporate "the best" elements of alternative B and alternative C. Development of this alternative is described later in this chapter under "Identify the Preferred Alternative." This alternative seeks a balance between providing enhanced visitor opportunities and increasing exposure to wilderness.

The action alternatives embody the range of what the public and the National Park Service want to see accomplished at Guadalupe Mountains National Park with regard to natural resource conditions, cultural resource conditions, visitor use and experience, and NPS management and operations at the park.

A number of management actions that were proposed by the public do not conform with NPS planning goals and objectives for Guadalupe Mountains National Park, or conflict with servicewide mandates and policies. These actions, which were not incorporated into any of the alternatives, are discussed later in this chapter under "Alternatives and Actions Considered but Dismissed from Detailed Evaluation."

APPLYING MANAGEMENT ZONES

In formulating the alternatives, the management zones were placed in different locations or configurations on the map according to the overall concept of each alternative. That is, the management alternatives represent different ways to apply the management zones to Guadalupe Mountains National Park. For example, an alternative whose overall concept included having as much undeveloped backcountry as possible would have more land assigned to zones that involve lower levels of development than an

alternative whose overall concept was to increase access to the entire park.

There were limits regarding where the various zones could be applied. Specifically, only lands designated as wilderness by Congress could be assigned to the designated wilderness zone. Backcountry was applied only to the lands found eligible for future consideration as wilderness. Application of these two management zones in the park is consistent across all action alternatives.

The assignment of zones also was guided by the locations of existing facilities. For example, the Pine Springs and Frijole Ranch areas contain parking lots, buildings, and other features that already support visitor activities and administrative services. Therefore, these areas were assigned to the developed zone in all of the action alternatives. Similarly, the existing roads in the park were assigned to the motorized scenic corridor zone.

The National Park Service inventoried park-wide environmental data, including natural, cultural, and scenic attributes. These resources were digitally mapped and recorded in a geographical information systems (GIS) database. This database was used to prepare composite resource and visitor experience analysis maps, such as the high resource values and landscape unit maps in Chapter 1, and the natural resource, vegetation, visual resource, and cultural resource maps in Chapter 3. The maps helped guide the assignment of management zones to areas of the park. For example

- Areas with high concentrations of natural or cultural resources were more likely to be managed for greater resource protection and with some limitations on visitor use than areas with low concentrations of these valued resources.
- Areas of high scenic quality that were visually exposed would be in a management zone that provided access to visitors while minimizing impact of development or other intrusions in the viewshed.

The action alternatives in this general management plan are the different "pictures" of the park that could be painted with the available "colors" (management zones). Because the areas within the designated wilderness and backcountry zones cannot change among action alternatives and because these represent the largest zones by acreage in the park, the pictures at first appear quite similar. However, small changes in how the other zones are applied in the remaining areas of the park represent substantial changes in the type of experiences many visitors will encounter.

CONSIDERING RELATIVE COSTS

The purpose of the cost estimate in a general management plan is to provide a sense of the cost to implement one alternative relative to the other alternatives considered. The presentation of costs in this plan is based on the types and general intensities of development in each alterative, staffing levels that would be required to fully implement the alternative, and non-development projects, including resource management activities.

The cost figures shown in table 4 were developed using NPS and industry cost estimating guidelines to the extent possible. Because actual costs could be higher or lower, these estimates should not be used for budgeting purposes. Project-specific costs will be determined in subsequent, more detailed planning and design exercises, and will consider the design of facilities, identification of detailed resource protection needs, and changing visitor experience goals.

Actual costs to the National Park Service will vary, depending on if and when the actions are implemented, and on contributions by partners and volunteers. The implementation of the approved plan would depend on future NPS funding levels and service-wide

priorities, and on partnership funds, time, and effort.

The approval of a general management plan does not guarantee that funding and staffing needed to implement the plan will be forthcoming. Full implementation of the plan could be many years in the future.

Because of the generalized nature of these cost estimates, costs in this general management plan are presented only in general categories. All costs were rounded to the nearest thousand dollars.

Annual Costs and Staffing

Annual operating costs are the total annual costs for maintenance and operations associated with each alternative, including: utilities, supplies, staff salaries and benefits, leasing, and materials. Cost and staffing estimates assumed each alternative was fully implemented as described in this plan. The cost estimates were in 2006 dollars.

Total full-time-equivalent employees are the number of staff required to maintain the assets of the park at a good level, provide acceptable visitor services, protect resources, and administer the park. Park managers would also explore opportunities to work with partners, volunteers, and other federal agencies to manage the park effectively and efficiently. Full-time-equivalent salaries and benefits were included in the annual operating costs.

Deferred Maintenance

Deferred maintenance costs are those needed to improve park assets to NPS standards. The estimate in this general management plan represents all of the deferred maintenance in the park as of 2007.

This estimate is a snapshot in time and will change over the life of the plan, as a result of regular, on-time maintenance programs and the availability of funds. Deferred maintenance is not a cost associated with implementing the alternatives, but could impact implementation over a period of time. While deferred maintenance is not a cost associated with implementation of the general management plan, it has an impact on the park budget and could have an indirect effect on implementation.

One-Time Cost Estimates

Facility costs in this category are rough estimates, and were developed based on the average cost of similar facilities. Actual costs for one-time facility and non-facility projects may be higher or lower, depending on the final design, site conditions, and contracting agency. These cost estimates do not include all items that will be listed in the more inclusive estimates to be developed in subsequent planning efforts. In alternative A, one-time costs include only those costs already planned within existing programs and with an approved funding source.

Table 4: Costs of the Alternatives

Cost Category	Alternative A: No Action	Preferred Alternative	Alternative B	Alternative C
Total annual operating costs	$2,933,000	$2,933,000	$2,933,000	$3,623,000
Staffing in full-time equivalents	36	34	34	44
Deferred maintenance	$5,300,000	$5,300,000	$5,300,000	$5,300,000
Total one-time costs	$3,271,000	$9,716,000	$4,334,000	$18,743,000
Facility costs	$2,351,000	$7,436,000	$2,164,000	$16,563,000
Non-facility costs: resource management	$820,000	$2,030,000	$2,070,000	$2,030,000
Non-facility costs: interpretation and orientation	$100,000	$250,000	$100,000	$150,000

Shumard Canyon from Williams Ranch

IDENTIFYING THE PREFERRED ALTERNATIVE

The development of the NPS' preferred alternative involved the use of an objective analysis process called "Choosing by Advantages." During a workshop held January 28 through 30, 2003, the planning team used this process to identify and compare the relative advantages of the then-existing alternatives (alternative A, alternative B, and alternative C) according to their ability to

- Protect natural resources, including preventing loss, and maintaining and improving conditions.
- Preserve cultural resources, including preventing loss, and maintaining and improving conditions.
- Provide for visitor experience and orientation through direct resources interaction.
- Enhance visitor experience, orientation, understanding, and appreciation through education and orientation.
- Promote wilderness experiences, values, and protection.
- Improve operational efficiency and sustainability.

This comparison helped the planning team determine the actions that would be most advantageous to the resources and the public. The costs of implementing the alternatives also were considered.

A summary of the workshop results is provided in appendix E. As shown in the appendix, alternative B initially was judged among the three initial alternatives to provide the greatest benefits in achieving the

evaluation factors within the context of the mission and purpose of the park. This alternative was then improved by adding elements from the other two alternatives that increased benefits and/or decreased costs. The resulting preferred alternative would give the National Park Service the greatest overall benefits for each evaluation factor for the most reasonable cost.

IMPLEMENTING THE GENERAL MANAGEMENT PLAN

The alternatives focus on *what* resource conditions and visitor uses, experiences, and opportunities should be available at Guadalupe Mountains National Park rather than presenting details of *how* these conditions and uses or experiences should be achieved. Thus, the alternatives do not include many details on the management of resources or visitor uses.

More detailed plans or studies will be required before most conditions proposed in the alternatives are achieved. Many of these are identified later in this chapter under the heading "Future Studies, Implementation Plans, and Research Needed."

The implementation of any alternative also depends on future funding and completion of environmental compliance, as appropriate. There is no guarantee that the money needed to implement this general management plan will be available. This plan establishes a vision of the future that will guide day-to-day and year-to-year management of Guadalupe Mountains National Park, but its full implementation could take many years.

Patterson Hills - Salt Flat from Guadalupe Peak

ALTERNATIVE A: NO ACTION / CONTINUE CURRENT MANAGEMENT

CONCEPT

This alternative would extend the conditions, visitor services, and management practices as they currently exist at Guadalupe Mountains National Park into the future. Current visitor facilities and park infrastructure would stay in their existing locations. As shown in the Alternative A – No Action Management Zones map, the park would continue to provide limited areas that visitors can easily access and experience by vehicle, with much larger areas of the park that visitors could access and experience with considerable effort and challenge. Cultural resources would continue to be protected and maintained in a stable condition.

No management zoning is identified in alternative A, no action / continue current management. This alternative represents a continuation of existing park management practices that call for park lands outside developed areas to be managed as "backcountry," a designation that is similar to the designated wilderness and backcountry zones of the action alternatives.

FACILITIES AND ASSOCIATED VISITOR ACTIVITIES

Pine Springs

Pine Springs, at the mouth of Pine Springs Canyon, would continue to be a primary visitor destination point for most day use, overnight camping, and interpretive activities. This busy area would be conveniently accessed by all ground transportation modes. Visitors would experience frequent encounters with many other visitors and interaction with park staff would be common.

Visitor Center Area. The visitor center is located about 0.2 miles northwest of U.S. Highway 62/180. Under alternative A, the visitor center would be maintained in its current configuration. This building is in relatively good condition. Within this building, the following uses would continue:

- visitor services, including orientation to the park
- park headquarters and other administrative uses
- some collections storage

This alternative would not involve any changes to the displays within or outside the visitor center. The displays, which are relatively modern, accurate, and in good condition, would continue to provide an introduction to and basic understanding of the park's geological and natural history. The primary interpretation of the park's cultural resources would continue to occur at Frijole Ranch. Because the visitor center represents the only park experience of many visitors, particularly those who stop as they travel through the region on U.S. Highway 62/180, these people would continue to miss most of the interpretation of the park's important cultural resources.

The bookstore at the visitor center would continue to be an important source of more in-depth information on the park's resources. These include not only the geological, natural, and cultural resources that were introduced at the visitor center, The Pinery (see below), and Frijole Ranch, but other topics such as American Indians; other history of the area; wilderness resources, including values and ethics; and night skies. A wide selection of books and educational materials on the park and region would continue to be available at this facility.

The parking area south of the visitor center provides for bus and personal vehicle park-

ing for the visitor center and adjacent picnic area. During busy periods, such as spring and autumn weekends, this parking lot is used as overflow parking by day users and backpackers when the Pine Springs Trailhead parking lot is full. A picnic area located south of this parking lot supports day use near the visitor center.

The Pinery Area. The Butterfield Stage Station Ruins, also called the Pinery, is located about a quarter mile east of the visitor center. This site is listed in the National Register of Historic Places and provides the cultural landscape associated with the operation of a stagecoach line in the late 1850s. The Pinery is directly accessed from U.S. Highway 62/180 and has its own, six-space parking lot. The 0.3-mile-long, paved, wheelchair-accessible Pinery Nature Trail connects the Butterfield Stage Station Ruins and the visitor center and provides interpretation of the Chihuahua Desert vegetation. All of these facilities would be maintained with the implementation of alternative A.

Pine Springs Trailhead Area. The trailhead is located at the northwest end of the Pine Springs area. This is the primary trailhead in the park and is a starting point for the Guadalupe Peak, El Capitan, Tejas, Frijole, and Foothills Trails. These connect to other trails, such that virtually the entire trail system through the interior of Guadalupe Mountains National Park can be accessed from Pine Springs. As a result, this is the main trailhead for overnight parking for backpackers.

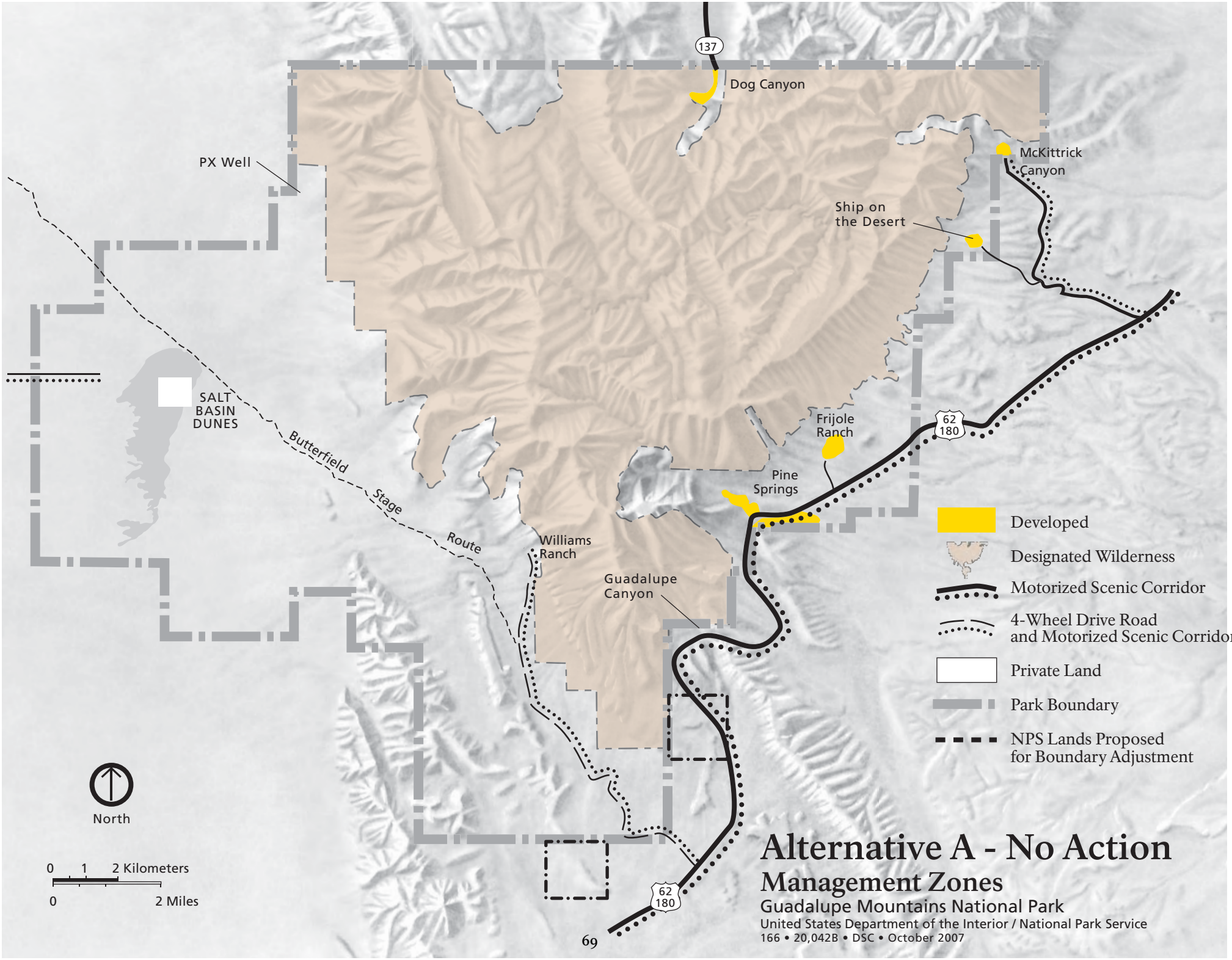
Parking and picnic tables are provided on a loop road at the trailhead. The original intent was to provide day use and parking for day-hike and overnight trail users close to the trailhead. However, a tent camping area has evolved adjacent to the trailhead parking lot and picnic area that provides private-vehicle tent camping and two group campsites. Visitors access the tent camping via a gravel road from the trailhead parking lot, and park adjacent to or near their tent site. The visitor center can be accessed using the 0.2-mile-long Campground Trail.

Over time, the trailhead parking and picnic area evolved into a *de facto* campground for recreational vehicles. The recreational vehicle sites are defined by painted lines and numbers on the parking lot pavement. This use by recreational vehicles restricts the parking available for day hikers and backpackers.

A comfort station on the perimeter of the trailhead / parking lot adequately serves trail users and the camping areas. There are no hookups or dump stations.

The issues associated with the trailhead area, all of which would continue under alternative A, include the following.

- Only limited parking is available to day hikers and backpackers at the trailhead. When the trailhead parking is full, these park users are directed to the visitor center parking lot.
- The capacity of the *de facto* tent and recreational vehicle campgrounds is exceeded often in the spring and autumn. When this occurs, the additional campers are directed by NPS staff to other campgrounds operated by private entities in nearby communities, or to public lands on the Lincoln National Forest-Guadalupe District or Bureau of Land Management lands, both of which are located nearby in New Mexico.
- The large size of many recreational vehicles and their concentration in a small area causes a visual intrusion and creates safety concerns.
- The two group campsites are close to the single campsites in the tent campground. These most commonly are used by university/college groups on educational visits and groups of adults associated with an organization like the Sierra Club.



Alternative A - No Action

Management Zones

Guadalupe Mountains National Park

United States Department of the Interior / National Park Service

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Because of the large number of people, noise from these campsites typically is greater than noise from the nearby single sites and sometimes can be disturbing to other visitors.

- The parking lot was not designed for overnight camping. There are no picnic tables or hookups, and recreational vehicle users do not even have space to set out a lawn chair. The low level of support facilities may lead to a low-quality experience for visitors in recreational vehicles who use the trailhead parking lot for camping.

Administrative Facilities. Under alternative A, Pine Springs would continue to serve as the park headquarters and maintenance center. Issues associated with administrative and other support facilities in this area would continue to include the following.

- Although more than half of the visitor center building is occupied by NPS staff offices and museum storage, the space available is too small for both purposes. Moreover, continued use of the building for these purposes precludes opportunities to expand visitor services in the building.
- Twenty-two housing units near the maintenance area ensure round-the-clock staff availability. Because there is inadequate office space, two of the largest housing units have been converted to administrative use. This has reduced the available housing in the park by about 15 percent, which diminishes the ability of the National Park Service to provide after-hours services, park protection, and emergency response. It also limits operational flexibility, including the ability to hire seasonal staff, effectively use volunteers, develop partnerships, and take advantage of the services offered by groups such as the Student Conservation Association and Youth Conservation Corps.
- Currently, all cultural interpretive exhibits are housed at a location separate from the visitor center that is only open part of the time. This limits the ability of visitors to see the cultural exhibits and learn about the history of the area. Building a new headquarters would provide additional space in the visitor center for these cultural exhibits. In addition to being more visible, the exhibits would be more available to visitors because the visitor center is more consistently staffed than the current exhibit location.
- The current visitor center and headquarters facility lacks flexibility to meet other interpretive needs, such as space for environmental education and outreach education. Because the park is so remotely located, a multipurpose space is needed to accommodate these needs.
- Museum storage is inadequate in the existing facility. Some museum items are being stored in a separate facility that lacks environmental controls. A new facility would allow for all museum items to be kept in the park and stored in one place with appropriate environmental controls.
- Currently, offices for Resource Management staff members are located in a three-bedroom house. The house was not designed for this purpose, and the inappropriate layout limits the ability to perform wet and dry laboratory work. Also, there is inadequate space for maps, plans, and geographical information system (GIS) workstations.
- Similar problems associated with inappropriate layout are encountered by Visitor Protection and Wildland Fire Management staff members, who are located in another three-bedroom house.
- The location of these operations separate from headquarters creates inefficiencies, as staff must travel several miles to attend meetings or consult with other staff. This also results in higher vehicle and gasoline costs. These remote locations require special connections to provide computer access to network servers and result in higher utility costs, for ex-

ample, for multiple business phone hook-ups.

Frijole Ranch

Frijole Ranch would continue to be a visitor destination for day-use opportunities. Conditions that would continue include the following:

- The primary introduction to the park's major cultural and historical themes would remain at the museum in the Frijole Ranch house. This would continue to be available to the public only when volunteers were present. In addition, visitors who made only a single stop in the park, at Pine Springs, would miss an introduction to the park's cultural resources.
- The site's trailhead would provide direct access to the Frijole Trail, and Foothills Trail, which connect to other trails that provide access to the interior of the park.
- The Smith Spring Trail would continue to be wheelchair accessible from the trailhead to Manzanita Spring, and would provide an easy loop walk past Smith Spring for all other hikers.
- Manzanita Spring would be dredged periodically to remove accumulated sediment and maintain an open pond.
- The public corral would remain adjacent to the Frijole Ranch Road.

Actions currently are underway at the Frijole Ranch complex to restore the cultural landscape and improve visitor amenities. Because they are in progress, these improvements would be included in alternative A (and all of the action alternatives). They include:

- constructing a new gravel-surfaced parking area about a quarter-mile from the complex that would have space for 20 automobiles and 3 recreational vehicles
- constructing a new, eight-site picnic area with potable water near the parking area, with one van-style wheelchair-accessible site
- installing a hard-surface path (suitable for use by people with impaired mobility) from the parking area to the ranch complex
- providing new interpretive and trailhead signs
- replacing the chemical toilet with a permanent, vault-type toilet (suitable for use by people with impaired mobility)
- relocating the NPS' pack stock horse corrals away from Frijole Ranch to a site near the Pine Springs administration area south of U.S. Highway 62/180
- revegetating the areas from which facilities were removed

McKittrick Canyon

McKittrick Canyon would continue to be a visitor destination for day-use opportunities. Conditions that would continue include the following:

- Access to McKittrick Canyon would be for day use only.
- The site would serve as a trailhead, providing direct access to the Permian Reef Geology Trail and the McKittrick Canyon Trail, which connects to the Tejas Trail and the interior of the park. Beyond Pratt Cabin, the McKittrick Canyon Trail would be managed as a wilderness trail.
- Orientation and interpretation would occur at the visitor contact station. Interpretation also would be provided along the loop McKittrick Nature Trail.
- Pratt Cabin would continue to be preserved and used intermittently as an interpretive center without any water or toilet facilities.
- The electrical power line through the canyon would be removed.

Dog Canyon

Dog Canyon would continue to provide a more remote setting for day-use opportuni-

ties and overnight camping. Conditions that would continue include the following:

- Visitors would receive orientation and interpretation at the visitor contact station.
- The trailhead would provide access to the interior of the park via the Tejas and Bush Mountain Trails. The 0.6-mile-long, loop Indian Meadow Nature Trail would provide interpretation to visitors.
- Visitors could camp in the nine tent sites and four recreational vehicle sites. Picnicking would continue in the campground. All visitors would have access to the site's restrooms, which have potable water and flush toilets.
- Visitors with horses could keep them in the public horse corral, and the NPS would maintain its pack horse facilities in this area.
- The water storage system would remain at its current size of 10,000 gallons.

Salt Basin Dunes

Salt Basin Dunes would continue to be maintained as a remote, limited-access visitor destination for day use. Conditions that would continue include the following:

- Visitors could access the Salt Basin Dunes by a 2-mile hike from the park boundary, or by obtaining a permit that enabled them to enter the park by automobile and travel about 1 mile on a primitive access road, park in the small interior parking area, and hike a 1-mile trail to the dunes.
- There would not be any interpretive exhibits.
- The absence of services or facilities limits visitor satisfaction and understanding.

Williams Ranch

Williams Ranch would continue to be accessible only by a high-clearance, 4-wheel-drive road. Use of the road would be by permit only, and use of Williams Ranch would be limited to day use. The Williams Ranch house and cultural landscape would continue to be maintained as a historic structure and site.

Other Visitor Facilities

Ship-on-the-Desert would continue to be used as a meeting facility and as quarters for Volunteers-in-Parks and visiting researchers.

PX Well would continue as a remote historic remnant that is accessible only by trail.

The **Dell City contact station** would remain as is, with no staff, few exhibits, and little interpretive material.

The **Guadalupe Pass trailhead** is an access point to Guadalupe Canyon and the Salt Basin Overlook Trail. This access would continue to occur from a small, unmarked highway pull-out at Guadalupe Pass and would cross private land along the old highway right-of-way by a informal agreement with the previous land owners

NATURAL RESOURCES

Natural resource management would emphasize creating stable ecologic health and function conditions.

The management of threatened or endangered species and other species of concern would continue to be in compliance with requirements and direction from federal and state laws and regulations, and with NPS policy. Other native species of management concern, such as rare, declining, sensitive, or unique species and their habitats, would continue to be managed to maintain their natural distribution and abundance. Native species populations that have been severely reduced or extirpated from the park, such as desert bighorn sheep, pronghorn antelope,

and black-tailed prairie dogs, would be restored where feasible and sustainable.

Air quality also will be managed in conformance with federal and state laws and regulations, and with NPS policy. Awareness of air quality and the measures that individuals can implement to maintain and enhance air quality would be improved through public education. The park staff would continue working with government and other entities throughout the region to increase awareness regarding the importance of air quality and factors it affects, including visibility, human health, ecosystem health, and resource protection.

Wilderness

This alternative would not include zoning. However, most of the park outside developed areas would be managed to protect wilderness values and opportunities for wilderness experiences. The existing tent pads would be maintained at the 10 designated backcountry campsites. Wilderness ethics and "leave no trace" standards would continue to be emphasized for all wilderness activities.

The lands on the west side of the park that were acquired following Congressional authorization in 1988 have been assessed for wilderness eligibility, and areas formerly excluded from wilderness, such as the northeastern slopes of Guadalupe Peak (including trail), Bear Canyon, the Patterson Hills, and western bajadas, have been reassessed (see Appendix D).

Geological and Paleontological Resources

Geological resources and paleontological resources would continue to be protected, as follows:

- The existing cave permitting system would be maintained to regulate, control, and restrict cave access.
- Specific stratotype and fossil locations would be protected by continuing limitations on access.

Plants and Wildlife

The goal of all management actions for plants and wildlife within the park would be to develop and maintain a healthy, dynamic, naturally functioning ecosystem, characteristic of the Guadalupe Mountains environment. To the extent possible, this ecosystem would have its diversity fully restored, including animals, plants, and biological interrelationships currently missing. Where possible, fire would be allowed to resume its natural role on the landscape of Guadalupe Mountains National Park, while protecting cultural and natural resources, through the use of wildland fire, prescribed fire, and suppression, as described in the park's fire management plan (NPS 2005).

Management of Human-Disturbed Ecosystems. Human-disturbed ecosystems would be allowed to restore naturally or as staffing permits. Specifically

- Access would be managed, and areas would be closed as necessary to allow areas to recover.
- Tent pads would be maintained at backcountry campsites.
- Previously grazed areas would be allowed to recover naturally.

Management of Exotic Species. The management of populations of exotic plant and animal species would be undertaken wherever such species threatened park resources or public health. This could include eradication, and may be applied to aoudads, a species of sheep that is native to north Africa.

Target species of exotic plants would be eradicated. In addition, plant and animal species and communities would be protected from impacts from exotic species by the continued implementation of preventive measures.

- Horse use (a possible vector in the spread of exotic species) would continue to be allowed but in backcountry areas it would be limited to day use on designated trails.
- Conditions would be created for natural revegetation.

Management of Wetland and Aquatic Environments. There would not be any changes in the management of wetland and aquatic environments. Most would continue to be protected as natural ecosystems. Undeveloped springs and wetlands would be protected for their value to wildlife.

Management of Research Natural Areas. Research natural areas would continue to be managed in a manner consistent with NPS standards for resource protection, monitoring, and scientific study. All research natural areas in the park would be retained at current sizes and configurations. These areas would continue to be managed as a future resource research bank with no visitor access allowed.

Water Quality and Quantity

Water quality and quantity would continue to be protected. This would include inventorying current resources to establish a baseline against which future conditions can be compared to determine change. Park staff would continue to work with outside interests and parties to eliminate or mitigate degradation of the park's surface and groundwater supply.

CULTURAL RESOURCES

Management would continue to focus on protecting and maintaining the stable condition of cultural resources.

Ethnographic Resources

Ethnographic resources would continue to be managed in compliance with requirements and direction from federal and state laws and regulations, and with NPS policy. In addition, the National Park Service would strive to improve its understanding of local ethnographic conditions and work with American Indians to protect and/or improve those conditions.

Archeological Resources

Archeological sites would be protected. The continuation of existing management practices would include the following.

- Visitor access to sites would not be provided.
- Stable conditions would be determined by monitoring.
- Minimum impact visitor use education programs would be developed, including "leave no trace" and sustainability.
- Facilities would be removed and appropriate mitigation would occur, or areas would be closed to visitor use if archeological resources were degraded.

Historic Structures and Landscapes

Historic structures and landscapes throughout the park would continue to be preserved while providing appropriate access. Most cultural sites in the backcountry zone would be managed as discovery sites. Most remnants of historic ranching activities would remain and would be stabilized for visitor safety, if required.

The management of historic structures and landscapes associated with visitor facilities throughout the park was described previously under the heading "Facilities and Associated Visitor Activities." The management of sites that were not addressed as part of visitor facilities would be as follows.

- The Butterfield Stage route would continue to be a discovery site.
- The Hunter Line Cabin would continue to be stabilized and/or preserved, as appropriate.

Collections

The National Park Service would continue to store the park's museum collections in a manner that was consistent with NPS preservation and security standards. However, because of the lack of space within the park that met the specialized storage requirements of museum collections, some of the existing and/or new specimens could be moved to alternate locations, potentially including universities and museums.

VISITOR USE AND UNDERSTANDING

There are multiple aspects to visitor use and understanding, including

- visitor experience
- visitor education, interpretation, and orientation
- interpretive and educational outreach programs and media
- visitor access, parking, and circulation
- hiking trails, trailheads, and horse use

Many elements of visitor use and understanding already have been described in other elements of alternative A, particularly including "Facilities and Associated Visitor Activities." To avoid repetition, this section focuses on the broad nature of visitor use and understanding that would be associated with this alternative, plus features that contribute to visitor use and understanding that were not covered previously. Lists are used to summarize features that were covered in other sections.

Under this alternative, visitor understanding would continue to be based on the opportunities to develop an appreciation of the park's primary themes.

Visitor Experience

Visitors would continue to receive a park introduction and a basic understanding of the park's geological and natural history at the Pine Springs visitor center. Their introduction to the major cultural and historical themes would continue to occur at the Frijole Ranch house.

An understanding of wilderness values and leave no trace standards would be available to all visitors seeking a backcountry experience either through day hikes into the park's backcountry or through a backcountry permit allowing overnight use. An understanding of wilderness values and ethics would be emphasized in all interpretive activities.

Campers at most levels, including recreational vehicle users, would have an opportunity to understand the value and importance of clear night skies and explore them relatively free of light and air pollution.

Visitor Education, Interpretation, and Orientation

Education, interpretation, and orientation opportunities would continue to be focused primarily on existing, centralized visitor facilities. Most visitor interpretive activities would continue to be at the Pine Springs visitor center. Interpretation and education also would occur at the Frijole Ranch museum and at contact stations in McKittrick Canyon, Dog Canyon, and Dell City. There would not be any changes in wayside exhibits. Pratt Cabin would continue to be used intermittently as an interpretive center in McKittrick Canyon. Ship-on-the-Desert would continue to be used for education programs, meetings, and quarters for researchers.

Interpretive and Educational Outreach Programs and Media

Education, interpretation, outreach, and orientation programs and media would continue to offer a variety of nonpersonal and personal programs to park visitors and regional schools and groups. Specifically

- Interpreted walks, topical programs and evening presentations would continue to be provided.
- Programs at regional schools would continue.
- Publications and audio/visual presentations would be updated or replaced as needed.

Visitor Access, Circulation, and Parking

Overnight access would occur only at Pine Springs, Dog Canyon, and in the backcountry primitive campsites. All other parts of the park would be for day use only.

Park roads would continue to provide vehicular and visitor access from highways and roads. New roads would not be built and existing roads would not be upgraded. The Williams Ranch road would remain accessible only by high-clearance vehicles and would be available by permit only. Access to the Salt Basin Dunes would continue to be available by parking at the park boundary and hiking in about 2 miles, or by obtaining a permit to access the vehicle staging location about a mile inside the boundary and hiking a mile to the dunes.

Alternative A would not include any changes to parking facilities except, as described earlier, improvements at Frijole Ranch that already are underway and would be included in all of the alternatives.

Hiking Trails, Trailheads, and Horse Use

Hiking trails would continue to provide the primary means of access to the interior and upland areas of the park. No new trails or trailheads would be built, and existing facilities would receive maintenance as needed. Visitor use levels would continue to be managed in the backcountry zone with an overnight permit system so that primitive, solitary conditions could be maintained.

- Hiking trails would provide access to most park users. Trails outside of developed areas would remain narrow and primitive in character. Selected trails could be closed or rerouted to improve visitor and staff safety and/or enhance resource protection.
- Existing trailheads would provide vehicular access to park trails and destinations. Trailheads would be maintained as minimally improved facilities.
- Horseback riding would continue to be allowed on some of the park's interior trails, while other trails would be for hiking only. Horse use in the backcountry would be limited to day use only. Public corrals would be available at Dog Canyon and Frijole Ranch.

PARK OPERATIONS

Many elements of park operations already have been described in other elements of alternative A, particularly including "Facilities and Associated Visitor Activities." To avoid repetition, this section focuses on elements of operations that were not covered previously.

Park visitor and operations buildings would remain in the existing locations and configurations. Facilities would be maintained at current conditions. No new facilities would be anticipated. In addition to features described earlier for this alternative

- The Pine Top patrol cabin would remain.
- No sanitary facilities would be provided in backcountry zone.
- There would not be any commercial services planning.

BOUNDARY ADJUSTMENT

A boundary adjustment would be sought to include the two parcels of NPS-owned land currently outside and adjacent to the legislated park boundary. These parcels contain important geologic and paleontological resources that are connected the to the park's purpose and significance.

COSTS

The estimated costs to fully implement alternative A were shown in table 4. The costs in the table provide a relative sense of the resources necessary to implement this alternative. The cost estimate is in 2006 dollars and has been rounded to the nearest thousand dollars. These estimates should not be used for budgetary purposes. In the no-action alternative, only those projects with identified funding have been included in the cost estimate.

The total one-time cost to implement alternative A would be $3,271,000. Of this, $2,351,000 would be for one-time construction costs, including work at Frijole Ranch to rehabilitate the ranch house and improve the picnic area. Other construction-related activities would include improvements to the Williams Ranch road.

One-time costs not associated with park facilities would include resource management to control exotic species, and improvements to interpretation and orientation materials. One-time costs for resource management would be $820,000, and costs for interpretation and orientation would be $100,000.

Annual operating costs for the park would be covered within the estimated 2008 base budget of $2,933,000.

The total number of full-time-equivalent staff would be 36; no additional staff would be required. Under this alternative, most actions, including all field work, would be completed with full-time NPS staff.

The total amount of deferred maintenance in the park would be unlikely to change as a result of implementing this alternative. This could have an impact on the NPS' ability to address some deferred maintenance actions, and could affect implementation of priority actions that otherwise potentially would be funded from the park budget.