



United States Department of Agriculture
Forest Service

April 2016

Elk Late-Successional Reserve Enhancement Project

Draft Record of Decision

Shasta-McCloud Management Unit McCloud Ranger District, Shasta-Trinity National Forest
Siskiyou County California, T40N, R1W, Sections 4 and 5; and T41N, R1W, Sections 27 to 34, MDM

Introduction

The Shasta-Trinity National Forest has completed the Final Environmental Impact Statement (FEIS) for the Elk Late-Successional Reserve Enhancement Project (project) (FEIS, 2016). This Draft Record of Decision describes my rationale for selecting Alternative 1, which based on my review of the project area, FEIS and supporting analysis, will best address the purpose and need. The April 2016 FEIS provides complete details on the Purpose and Need for Action, Public Involvement, Range of Alternatives considered, and Environmental Consequences. Copies of the FEIS are available at the Shasta-Trinity National Forest, Shasta-McCloud Management Unit Mt. Shasta and McCloud ranger station offices. Electronic copies and additional documentation, including more detailed analyses of project area resources, may be found in the project planning record located in the [online project record](#).¹

Project Location

The 3,519-acre project area is located in Siskiyou County, California, approximately nine miles northeast of the community of McCloud and 70 miles northeast of Redding within the California Cascades province. The vicinity includes Elk Flat and nearby areas between National Forest Roads 13 (Pilgrim Creek Road) and 19 (Military Pass Road) within the Ash Creek 5th field watershed. Elevation ranges from 4,000 to 4,500 feet. Seventy-five percent is a ponderosa pine forest type, 10 percent mixed conifer and 15 percent dry meadow (Elk Flat). Natural stands are predominantly ponderosa pine in the eastern and southeastern portion of the project area, transitioning to white fir-pine and mixed conifer-pine toward the west and northwest as elevation increases. Average natural stand ages range between 60 and 120 years with plantations from 10 to 50 years. Figure 1 of the FEIS provides a vicinity map.

Management Direction

This Project is guided by management direction in the Forest Plan, as amended. The Forest Plan also cites the NWFP ROD with its attached standards and guidelines as a source that provides additional direction

¹ <http://www.fs.usda.gov/project/?project=31312>

in the form of the land allocations and associated goals, standards, and guidelines (Forest Plan p. 4.1).² The primary Forest Plan land allocation is Late-Successional Reserve. The Elk Flat Late-Successional Reserve (LSR RC-360) is approximately 87 percent of the project area with the remainder designated as Matrix with a Commercial Wood Products emphasis. Approximately 240 acres of Riparian Reserves overlay LSR and Matrix lands. The project area is in Forest Plan Management Area 2 - McCloud Flats, with a smaller proportion in Management Area 3 - Mt. Shasta.

The Elk Flat LSR was identified as an important area of late-successional habitat during the mapping efforts undertaken for the Northwest Forest Plan (Johnson, 1991; LSRA, 1999). The LSR's origins are as a habitat conservation area under the Interagency Scientific Committee's northern spotted owl management strategy (LSRA p. 124).³ The Forest prepared a Forest-wide Late Successional Reserve Assessment (LSRA) in 1999 that was clarified in 2009 (Mohoric, 2009). Overall, management objectives within the LSRs are to protect and enhance conditions of late-successional forest ecosystems. Protection includes reducing the risk of large-scale disturbance, including stand-replacing fire and insect and disease epidemics, and major human caused impacts. The California Cascades Province has been identified as an area of elevated risk to large-scale disturbance due to changes in the characteristics and distribution of the mixed-conifer forests resulting from past fire suppression.

Purpose and Need for Action

The purpose and need for action was identified through comparison of existing and desired conditions. Existing conditions in the project area are departed from the desired conditions identified in the Forest Plan and LSRA. Primarily, there is a need to take actions that will:

1. **Reduce Risk** – Reduce risk in early, mid and late-successional habitat and increase stand resilience to disturbance in the Elk Flat Late-Successional Reserve.

Natural disturbance is an important process within late-successional forest ecosystems, but both human and natural processes have altered the disturbance regime in the Elk Flat LSR such that without action, the existing and future late-successional habitat, including approximately 718 acres of designated critical habitat for the northern spotted owl, will remain at risk to loss from high tree densities, drought, disease, insects, and the potential for uncharacteristic high severity wildfire.

The desired condition is stand conditions where prescribed, or natural, fire plays a more natural role at protecting and enhancing late-successional habitat by maintaining health and diversity components and where stand densities foster resilience to large-scale insect and disease disturbances.

Secondarily, actions are needed to:

2. **Accelerate Habitat Development** – Accelerate development of late-successional and old growth forest characteristics and promote late-successional habitat connectivity.

² *Record of Decision on Management for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl Northwest Forest Plan*). Northwest Forest Plan standards and guidelines for each land allocation provide a coordinated ecosystem management approach. The Northwest Forest Plan established a network of LSRs (late-successional reserves) and accompanying management standards and guidelines. The network of LSRs is intended to provide habitat for species associated with late-successional and old-growth forests and to help ensure that late-successional wildlife species diversity will be conserved. The Shasta-Trinity National Forest Land and Resource Management Plan (Forest Plan, 1995) integrated direction from the Northwest Forest Plan Record of Decision including the late-successional reserve land allocations on the Forest.

³ At the time the Elk Flat LSR was established, it was occupied by one pair of northern spotted owls. This activity center has not been occupied since 1990.

The existing conditions will delay or prevent existing stands to develop into late-successional forest on approximately 1,500 acres of early and mid-successional forested stands.

The desired condition within LSR includes structurally diverse mature and old-growth age classes with natural ecosystem processes present. Increasing individual tree growth and resilience of contiguous early and mid-successional pine and mixed-conifer stands within the LSR and adjacent Matrix lands to foster connectivity and develop late-successional habitat is important, along with maintaining and restoring the connectivity provided by Riparian Reserves.

3. **Restore Meadow Habitat** – Restore meadow habitat at Elk Flat (which is partially in the LSR).

Conifer encroachment is diminishing dry meadow areas at Elk Flat to less than 50 percent of its extent in 1944. The lack of frequent, low- to moderate-intensity fire and fire suppression has contributed to this encroachment. Unauthorized routes have diverted flow from Swamp Creek, concentrating flow and disconnecting it from spreading out over the meadow.

The desired condition is restored early seral habitat in the meadow at Elk Flat to its historic size, as evidenced in the 1944 photographs where scattered large conifers are present with diverted stream channels restored to natural contours (see #5 below).

4. **Retain Hardwoods** – Retain hardwoods as a stand component commensurate with development of late-successional stands.

Aspen and California black oak occur as a scattered, very minor vegetation component in the project area, generally in the understory at a reduced abundance and decreased vigor.

The desired condition is for groups and individual hardwoods to be restored to naturally occurring levels as they provide important habitat structure for late-successional associated wildlife species and their prey, and contribute toward increased diversity and complexity in forest stands.

5. **Restore Hydrologic Function** – Increase streamflow, raise water table elevation and improve water quality and vegetation conditions within Riparian Reserves associated with Elk Flat, Ash and Swamp Creeks and their tributaries.

Riparian vegetation is currently limited to discontinuous locations where sunlight can reach the forest floor along streambanks. Woody debris dams are widening channels and accelerating bank erosion.

The desired condition is a restored hydrologic environment in support of the Aquatic Conservation Strategy Objectives as listed on page 4-53 of the Forest Plan.

6. **Manage the Transportation System** – Manage the National Forest Transportation System and Decommission Unauthorized Routes.

Unauthorized routes are not maintained and are not open to legal vehicular access, although they are physically open. Several routes are degraded and intercept stream channels and present a resource concern for soils, vegetation, erosion, and wildlife. A 0.1-mile segment of an unauthorized route accesses a popular dispersed recreation site on the edge of Elk Flat meadow.

The desired condition is a safe, efficient transportation system with the minimum road density needed to meet administrative, recreational, and cultural access needs while protecting natural resources (Forest Plan pp. 4.4, 4.16, 4.17). Open road density will only include roads that are open to vehicle use as designated on the Forest Motor Vehicle Use Map (MVUM). Unauthorized routes not needed for the road system will be restored to a natural condition (USDA-FS, 2010a p. 4).

Decision and Rationale

[Any portion of this section may be updated prior to my final Decision to reflect the latest information.]

Decision

Based on the analysis presented in the final EIS, supporting analysis and documentation in the project record and review of public and other agency input, I have decided to implement Alternative 1 (the preferred, and draft selected alternative). My decision includes the actions listed under Alternative 1 as described in detail in Chapter 2 of the FEIS (see “Description of Action” pp. 49 to 59, and “Alternative 1” under “Alternatives Considered in Detail”). The selected alternative incorporates implementation of project design features, resource protection measures, best management practices and monitoring, all of which are described in the final EIS. (See “Resource Protection Measures” at pp. 84 to 93, “Monitoring” at pp. 93 to 96, project design features in Appendix A and Best Management Practices in Appendix C).

Project implementation is scheduled to begin in 2016 and may last up to about 30 years including the three prescribed fire entries; however, the majority of project actions will be implemented within five to 10 years.

Pursuant to 36 CFR 218, this project is subject to a pre-decisional administrative review (or objection) process. More information on the results of the objection resolution is provided in the Public Involvement section of this ROD.

The selected alternative is the Modified Proposed Action and the Agency’s Preferred Alternative. Alternative 1 was incrementally modified since the project was scoped and noticed in 2013.⁴ It includes five broad categories of treatments, which in combination, meet the six elements of the purpose and need for action:

1. **Forest Restoration Treatments** – Variable density thinning with site-specific prescription elements, subtreatments, and reforestation to reduce risk of habitat loss and accelerate development of habitat in the LSR (2,190 acres of thinning with 313 acres of reforestation consisting of interplanting in mortality areas and planting group selection areas with a mix of conifer and hardwood). Thinning prescriptions are variable and depend on stand type, tree species composition and habitat type and quality. Subtreatments include group selection in six older plantations and two natural stands, radial thinning to protect large sugar pine and ponderosa pine in 13 stands, small gap creation in dense white fir in four stands, aspen restoration and black oak release where it occurs. Additional discussion of subtreatments, their placement and rationale is included below in “Achievement of Purpose and Need.” Adaptive management includes optional methods for biomass thinning, aspen restoration, and reducing risk in the LSR through salvage of dead and dying trees, primarily pine.
2. **Fire Restoration and Fuels Reduction Treatments** – Piling, pile burning and low-intensity prescribed fire (up to 1,461 acres of machine piling as needed, and 3,483 acres of underburning, unless otherwise directed by resource protection measures).
3. **Meadow Restoration** – Conifer removal (378 acres), and reintroduction of fire (518 acres and included in acres in #2). Includes restoration of hydrologic function through road decommissioning (included in #5 below) and recontouring (included in #4 below).
4. **Hydrologic Function and Soils Restoration** – Floodplain recontouring (15.3 acres), decommissioning unauthorized routes that intersect stream channels (included in #5 below), forest restoration (64 acres of thinning and revegetation in Riparian Reserves included in #1 above, 65 acres of meadow enhancement included in #3 above), and reintroduction of fire

⁴ The responsible official may modify the proposed action and alternative(s) under consideration prior to issuing an EIS. In such cases, the responsible official may consider the incremental changes as alternatives considered. The documentation of these incremental changes to a proposed action or alternatives shall be included or incorporated by reference in accord with 40 CFR 1502.21. (36 CFR 220.5(e))

(211 acres in Riparian Reserves included in #2 above, with 80 acres of underburning only). Soil restoration will be completed through windrow respreading on 167 acres of older plantations.

5. **Transportation System Management and Decommissioning of Unauthorized Routes –** Managing existing roads, adding an existing route to the system and decommissioning other unauthorized routes. (14.9 miles of road maintenance and 0.3-mile of reconstruction, use and closure, 0.1-mile of unauthorized route in Matrix added to system). Approximately 2.6 miles of maintenance level (ML) 1 roads⁵ will be temporarily opened to access treatment units, then at completion of the project, reclosed to vehicular traffic. Closure methods will consist of earthen berm, guardrail barricade or other natural obstacles with consideration for cost, effectiveness and resource protection. An estimated 0.7-mile of unauthorized route will be decommissioned, 5.7 miles of unauthorized route will be used as temporary roads then decommissioned, and 2.9 miles of temporary roads will be constructed, used and then decommissioned. Approximately 78 landings will be needed to implement the project, of which an estimated 38 exist and could be reused. Landings will be decommissioned at the close of the project.

I have decided that the adaptive management strategies developed and analyzed for the project will respond to the rapidly changing conditions and project implementation monitoring. They include: aspen restoration using fire or soil disturbance if conifer removal fails to stimulate aspen suckering, thinning trees between 4 and 6.9 inches diameter breast height through underburning if it is not feasible to remove the material as biomass, risk reduction in select stands through salvage treatments of dead and dying pine if stand conditions deteriorate further and tree mortality spreads between the time this decision is made and implementation. If risk reduction through salvage is needed, materials will be removed through commercial mechanisms if the material is sound, however the purpose is to reduce risk to adjoining late-successional and younger forest stands.

Connected actions include hazard tree and snag felling for safety (primarily in the 87 acres of hazard reduction treatment areas identified along roads and property lines), treatment of stumps larger than 14 inches in diameter with a borate fungicide to reduce the spread of root disease, hand and machine fireline construction and rehabilitation, and release of reforested areas for survival and growth.

Decision Rationale

The following section provides my rationale for choosing the selected alternative, including how well it meets the purpose and need and addresses current conditions (FEIS Chapter 1, summarized above); addresses relevant issues (FEIS Chapter 2); and benefits or negatively affects the physical, biological, social and economic environment (disclosed in FEIS Chapter 3). My decision to actively manage the Elk Flat LSR and adjacent Matrix lands by approving the selected alternative is based upon the analysis presented in the FEIS, supporting documentation, and review of public and other agency feedback. I find that the selected alternative is consistent with the applicable recommendations from the Recovery Plan for the Northern Spotted Owl for restoring dry forest ecosystems, and Recovery Plan and Final Critical Habitat Rule guidance regarding active management to influence stand resilience while conserving high quality habitat. My decision considers the relevant scientific information, opposing views, acknowledgment of incomplete or unavailable information, and a careful evaluation of both the beneficial and adverse effects of implementing the selected alternative. I believe the selected alternative addresses many of the conflicting environmental and social needs and concerns in the project area.

⁵ Currently all ML-1 roads are closed and in a storage status.

The final EIS and supporting documentation presents an objective and well-documented analysis of environmental effects expected to result from implementation of the selected alternative. Direct, indirect, and cumulative effects, including interrelated and interdependent actions and effects from adaptive management were addressed for each resource area potentially affected. Please refer to the FEIS for additional information, including discussion of the issues, alternatives analyzed and the environmental consequences.

Achievement of Purpose and Need

Although all action alternatives considered in detail meet the purpose and need, it is to varying degrees. When compared to the other alternatives considered, the selected alternative meets the purpose and need for action to the greatest extent. The selected alternative moves the entire project area toward conditions that are more ecologically resilient to disturbance and large-scale habitat loss, while accelerating development of habitat and restoring meadow, hardwoods and riparian areas. The actions respond to the purpose and need for action as follows:

Forest, Fire and Fuels, and Soils Restoration

In combination, the forest and fire/fuels restoration meet Purpose and Need #1 (by thinning to reduce stand density and fuels treatment to reduce hazard), #2 (by thinning to accelerate development and enhance connectivity of late-successional habitat), and #4 (through oak and aspen release to retain and promote hardwoods at naturally occurring levels).

The variable density thinning and associated subtreatments in natural stands will reduce the ongoing risks to existing and developing late-successional habitat from high stand density, drought, disease and insect-related mortality. These treatments, combined with reductions in current ground and ladder fuels, will also reduce the predicted extreme fire behavior and habitat loss that could occur during a summer-time wildfire. The variable thinning treatments will accelerate individual tree growth and health, and development of late-successional habitat structure by increasing availability to water, light and nutrients. Current high value habitat areas for late-successional associated species such as northern spotted owl (NSO), northern goshawk, fisher, and rare mosses will be retained in their current condition and the surrounding treatments will afford an increased level of protection to these habitat areas.

The variable thinning prescriptions in current suitable habitat for NSO and other species will maintain the majority of the current habitat function while increasing habitat resilience and creating fine-scale heterogeneity and complexity between and within stands. Creating small gaps in stagnated or diseased white fir to facilitate a new age or species class, radial thinning around legacy sugar and ponderosa pine to protect these important late-successional elements, and oak release to promote species diversity will not create significant barriers to wildlife known or expected to inhabit the LSR. These treatments influence a small portion of the project area's suitable habitat and will not reduce the value of currently connected areas. The unthinned patches and project design features described in FEIS Chapter 2 and Appendix A that maintain habitat areas within thinning units will contribute to maintaining habitat function in the short term while the surrounding treatments protect and enhance habitat development over the long term.

Variable density thinning treatments in more open pine-dominated natural stands that do not provide suitable NSO or other species habitat will reduce the spread of black stain and *Heterobasidion* root disease and associated mortality. Plantation thinning will accelerate tree growth in early-successional stands, and subtreatments of group selections within six older plantations will increase tree species and age class diversity and complexity, transitioning these stands toward better quality and more resilient habitat. Soils restoration treatments will restore topsoil distribution in two previously windrowed plantations, allowing for increased soil nutrient uptake and accelerated tree growth.

Piling and burning, and low-intensity prescribed fire will reduce existing high fuel loads and reintroduce fire, a lacking disturbance element, in the LSR and in the meadow at Elk Flat. The variable thinning treatments and mechanical and manual fuels reduction will create conditions that allow for a safe return of the natural, frequent fire regime on approximately 3,483 acres (all treatment acres in the project area except where excluded per resource protection measures). Based on current conditions, approximately 2,709 acres will be thinned before burning and 774 acres will be burned only. Underburning will be repeated every 5 to 10 years to burn the project area three times to reintroduce fire to the ecosystem and establish conditions that allow the return of a natural fire regime. Fire will be returned to its natural role in the ecosystem.

Prescription elements will address site-specific conditions:

- **Unthinned Patches** - Within thinning units in the LSR, these will range from 10 to 12 percent (or higher), of a stand. They will retain important processes and conditions such as thermal and visual cover; natural suppression and mortality; small trees and shrubby openings; natural size differentiation; large trees and trees with cavities, deformed or decadent limbs; large snags and down logs; undisturbed debris; and dense or multilayered stand attributes that contribute to late-successional habitat. Unthinned patches are considered separate ‘stands’ in treatment units where no mechanical treatment will occur. In stands with heavy mortality areas where the above-listed conditions do not occur, and in some plantations, large to small snag patches will comprise all or a portion of the unthinned patches.
- **Habitat Rest/Roost Clumps** - Habitat rest/roost clumps that provide important reproductive, hunting and thermoregulatory areas for late-successional associated wildlife species will be retained within thinning units.
- **Radial Thinning** - Radial thinning in a 50 foot radius around large, legacy sugar and ponderosa pine will reduce the risk of losing these valuable trees to disease or other disturbance on up to 193 acres across 13 stands.
- **Group Selections** – Several group selections up to 2 acres in size, and not exceeding more than 20 percent of a unit, will be created based on specific stand conditions. The groups will remove host species of *Heterobasidion* and black stain root disease in two natural stands (up to 16 acres) and six older pine plantations (up to 58 acres), while increasing species and age diversity in the plantations. Removing the diseased trees and allowing for increased sunlight to warm the soil will reduce root-to-root contact and break up the infection centers.
- **Gaps in White Fir** – Small, less than 0.25-acre sized gaps, and not exceeding more than 10 percent of a unit, will be created within four units (up to 11 acres) based on specific stand conditions. The gaps will be placed in dense, homogenous pockets of small white fir, typically 16 inches or smaller in diameter at breast height. These gaps will not be reforested, but will allow for additional sunlight, and potential regeneration of a younger age class of trees, or shrub development, adding some within-stand heterogeneity and layering.
- **Reforestation** - Reforestation of group selections in plantations and natural stands, and interplanting with non-host species in mortality areas and understocked plantations, will increase species diversity and resilience. Approximately 313 acres will be planted, with mechanical site preparation prior to planting and follow-up hand release of competing vegetation between the first and fifth year, if needed.

- **Piling and Pile Burning** - Machine piling and pile burning on up to 1,461 acres across 39 stands will reduce high concentrations of down wood prior to introducing low-intensity prescribed fire. Of these acres, an estimated 944 are estimated to actually need piling as the pre-treatment to burning. Snags and coarse woody debris will be retained at levels during piling to assure that the required retention levels are met or exceeded after underburning.
- **Biomass Thinning** - Thinning trees that are 4 to 9.9 inches in diameter at breast height will reduce under and midstory density and fuel ladders on approximately 1,864 acres, including the meadow enhancement stand. Trees in some plantations will be thinned using mastication, and trees in other plantations, natural stands and meadow, will be commercially thinned as biomass material for cogeneration. If market conditions at the time of implementation make commercial removal infeasible, trees that are 4 to 6.9 inches diameter will be thinned through underburning.

Risk Reduction using Salvage - Adaptive management will reduce risk by removing standing dead and dying trees if additional mortality occurs between this decision and implementation. Salvage of dead and dying trees, primarily pine, will be included in stands with current excessive and ongoing mortality. The required snag and coarse woody debris retention levels will be met. Adaptive management for risk reduction through salvage could occur, if needed, in up to 19 stands that total 811 acres (FEIS Table Appendix A-2).

- **Oak Release** - Conifer removal within 30 to 60 feet of California black oak trees will reduce conifer encroachment and increase the individual oak's height and diameter growth from increased sunlight, water, and nutrients; aiding in maintaining and promoting oak as a stand component. Any predominant trees, dominant trees with late-successional characteristics and healthy sugar pine will be retained. In critical habitat for the NSO, any Douglas fir, incense cedar or sugar pine that is 24 inches or larger in diameter at breast height will also be retained. These species and this size class in the stands currently contribute to important reproductive structure for NSO and fisher, and are an important stand component of the mixed conifer stands in critical habitat. Oak release will occur on approximately 30 acres across several stands, with the largest portion in critical habitat.
- **Aspen Restoration** - Conifers will be removed within 150 feet of aspen, with the exception of large predominant trees and healthy sugar pine. If monitoring shows that conifer removal fails to stimulate suckering within three years of conifer removal, mechanical disturbance or underburning will be utilized to increase aspen. If browse damage indicates a need, fencing will be installed to protect young aspen shoots. Aspen restoration through conifer removal will occur on approximately 24 acres.

Meadow Restoration

Meadow restoration at Elk Flat will meet purpose and need #4 through conifer removal on approximately 378 acres to retain and promote early seral habitat, including perennial and annual grasses and forbs. Early-seral vegetation will be restored to approximate the 1944 conditions by removing most conifer, except for predominant trees and dominant trees with late-successional characteristics. Conifer removal will be reduced incrementally where the meadow transitions to natural stands or plantations, creating a feathered appearance along the periphery of the meadow. Approximately 62 acres of unthinned patches will be retained in the LSR portion of the meadow. To begin the processes of restoring the natural fire regime, conifer removal will be followed by underburning the entire 518-acre meadow at Elk Flat, unless precluded by resource protection measures. The Hydrologic Function Restoration treatments described below will also restore meadow habitat and function.

Hydrologic Function Restoration

The combined forest, meadow, fire and fuels, and hydrologic restoration treatments, and unauthorized route decommissioning, will meet purpose and need #5 (hydrologic function restoration by restoring natural contours and correcting channel intersections with unauthorized routes. Natural flooding between floodplains and channels will be restored to improve sheet flow, infiltration and groundwater storage) Treatments include:

- **Contouring and Decommissioning** - Contouring floodplain geometry and old landings in Riparian Reserves will restore natural flooding between floodplains and channels. This will improve sheet flow and infiltration; contributing to more natural groundwater storage processes in the floodplain. Unauthorized routes that capture and concentrate runoff will be restored to the natural contour through decommissioning. Concentrated runoff that is currently increasing stream channel erosion will be corrected. Approximately 15.3 acres in Riparian Reserves will be restored by contouring and hydrology-related route decommissioning.
- **Variable Density Thinning** - Variable density thinning in 64 acres of the Ash Creek Riparian Reserves will allow for increased sunlight and an increase of riparian plant production, growth and improved riparian function. Riparian vegetation will strengthen channel banks and reduce ongoing erosion, while thinning will improve individual tree health and growth, allowing for large woody debris input to be metered and create instream structure. (These acres are already included in the total thinning acres listed above for Forest Restoration Treatments and are not additional).
- **Reforestation** - Planting or seeding riparian and upland (mesic) species on approximately 95 acres in Riparian Reserves will further support riparian function. (These acres are already included in the reforestation acres listed above and are not additional acres).
- **Underburning** – Low-intensity prescribed fire in the total 240 acres of Riparian Reserves will reduce ladder and ground fuel loading in accordance with resource protection measures and the project design for down wood retention. Increased sunlight will improve growing conditions for riparian species and the mosaic created by burning will contribute to vegetation diversity. (These acres are already included in the total underburning acres listed above and are not additional).

Transportation Management and Unauthorized Route Decommissioning

Transportation management actions and unauthorized route decommissioning will meet purpose and need #6. A tenth of a mile of an existing unauthorized route will be added to the transportation system to access a long-established dispersed use site in the Matrix portion of Elk Flat. Approximately 6.4 miles of

inventoried unauthorized routes will be decommissioned. At a minimum, decommissioning typically involves physically blocking the entrance to allow natural revegetation, and may also include ripping to promote natural revegetation and restoration, and water bars to prevent erosion when necessary, including the necessary cleanup work. The unauthorized routes are not part of the current transportation system and do not appear on the Motor Vehicle Use Map. It is not legal to use these unauthorized routes with motor vehicles, although they are physically open.

Consideration of Project Effects

As described in Chapter 3 of the FEIS, the selected alternative will result in some environmental effects. My Decision adopts all practicable means to avoid or minimize environmental harm from the selected alternative, described in FEIS Chapter 2 Resource Protection Measures (RPMs), Monitoring, Standard Operating Procedures (SOPs), and Best Management Practices (BMPs) (FEIS pp. 84 to 96, Appendix C). All of these measures and procedures are part of this Decision. These requirements prevent or reduce environmental effects and contribute to compliance with the Forest Plan. The effects analyses conclusions in Chapter 3 and the Compliance and Consistency with the applicable laws, regulations, executive orders, and the Forest Plan (addressed in the resource sections in FEIS Chapter 3 and FEIS Appendix H) are based on adherence to the RPMs, Monitoring, SOPs and BMPs. The application of Forest Plan standards and guidelines, RPMs, SOPs, and BMPs are intended to limit the extent, severity and duration of potential impacts.

The selected alternative affects suitable nesting, roosting and foraging habitat for the threatened northern spotted owl, and its dispersal and capable habitat. Nesting/roosting habitat (120 acres) and high quality foraging habitat (89 acres) will be maintained and improved through careful, monitored application of low-intensity prescribed fire. These high value habitats were delineated during field review and are based on literature and knowledge of habitat types used by NSO on the Management Unit for nesting and roosting. They are relatively non-contiguous within the western extent of the project area, with the exception of a large nesting/roosting block. There will be no thinning or other mechanical treatments in these high value habitats and delineation of these areas meets the recommendation for Recovery Action 32 in the Revised Recovery Plan. *“to maintain and restore well distributed, older and more structurally complex multi-layered conifer forests on Federal and non-federal lands across its range, land managers should work with the Service to maintain and restore such habitat while allowing for other threats, such as fire and insects, to be addressed by restoration management actions”* (USDI-FWS, 2011 pp. III-67 to III-68). The project design meets the intent of both maintaining, and restoring or enhancing, habitat under Recovery Action 32. High value habitats are not proposed for mechanical treatment, but will be burned with low-intensity prescribed fire. While the greater proportion of the high value stands and patches in the project area are not considered “high quality” suitable habitat, they are the best of what is available in the project area based on field review. These stands and patches either encompass entire treatment units, a portion of a unit (ranging from 10 to 20 acres in size), or are incorporated into the unthinned patches. The prescribed burning treatments in these high value habitat areas are not expected to exacerbate any competitive interactions between NSO and barred owl.

In the project area, the selected alternative will maintain and improve foraging habitat through prescribed fire only (249 acres; 20 percent of suitable). It will variably thin moderate and lower quality foraging habitat, degrading 697 acres in the short term (areas will be maintained as foraging habitat post-treatment within 55 percent of suitable). It will downgrade 98 acres to dispersal habitat function over the short and long term through variable thinning combined with oak release or radial thinning around legacy pine, affecting eight percent of suitable habitat in the project area. Dispersal habitat will be maintained with fire or improved through plantation thinning on 80 acres or five percent of all dispersal, and will be modified and maintained as dispersal by thinning on 180 acres (11 percent of all dispersal). Dispersal habitat function will be removed on 41 acres (three percent of all dispersal). All 329 acres of capable habitat will

be improved and made more resilient to large scale disturbances, with 294 acres moved toward dispersal and lower quality suitable NSO habitat over the short and long term. The variable density thinning and subtreatments, combined with follow-up prescribed fire and other surface fuel treatments, meet several of the recommendations in the Recovery Plan for restoring dry forest ecosystems (FEIS p. H-23, Appendix E pp. 3-4, 49-50).

Degraded foraging habitat functions at pre-treatment habitat levels after treatment, since important habitat elements are maintained and provide for foraging (e.g., at least 40-60% or higher canopy closure, basal area of 125 to 200 or higher sq. ft./ac, layering, and abundant large snags and logs). The degraded foraging habitat is expected to transition to pre-treatment quality over 5 to 20 years after treatments start, depending on treatment type. Downgraded foraging habitat is expected to transition to pre-treatment quality levels over 10 to 30 years. These timeframe estimates are barring any events such as epidemic insect or disease outbreaks, or uncharacteristic stand replacing fire, that can reset the seral stage in a stand or part of a stand. The stands currently providing foraging habitat will continue to provide foraging opportunities for NSOs, should they occupy or disperse through the home range. Where habitat is downgraded to dispersal, minimal foraging opportunities will also remain. Where dispersal is modified or removed, the treatments are spread across the project area and will not create significant barriers to dispersal.

All of these habitat effects will occur in a significant portion of one NSO home range. Based on long term and current survey data, this home range has not been occupied by territorial or reproducing NSOs since 1990, and the last verified resident single NSO was a subadult female in 2003. The types of treatment and treatment locations within the home range were developed based on prioritization recommendations in the Recovery Plan for Recovery Action 10 (USDI-FWS, 2011 pp. III-44 to III-45), through consultation with the USDI Fish and Wildlife Service (FWS). This is fully described in the FEIS and the supporting Biological Assessment (FEIS Appendix E). The important function that this home range and the Elk Flat LSR likely provides, or is expected to provide in the future with treatment, is for dispersing juvenile, subadult or non-territorial adult NSOs. This is due to the overall habitat quality and configuration in the home range (lower quality overall in a dry site type with the majority of the area not supporting suitable habitat), and the fact that 59 percent of the current home range is in private lands management. Conversely, within the LSR that supports 41 percent suitable NSO habitat, the treatments that maintain and enhance current habitat function while facilitating more resilient habitat and transitioning dispersal and capable habitat over the long term toward suitable is considered consistent with the recommendations in the Recovery Plan and the Final Critical Habitat Rule for active management.

The Recovery Plan describes the three primary range-wide threats to the NSO as competition with barred owls; ongoing loss of spotted owl habitat as a result of timber harvest, habitat loss or degradation from stand-replacing wildfire and other disturbances; and loss and reduced distribution of spotted owl habitat due to past activities (USDI-FWS, 2011 p. vii). As discussed in Chapter 1, Chapter 3, and Appendix E of the FEIS, the 20-year monitoring report for the NWFP and 'Status and Trend of Northern Spotted Owl Habitat' describes that large wildfires continue to be the leading cause for loss of NSO habitats on federal lands and that most of these fire-related losses have occurred in the network of large reserves designed for the protection and restoration of habitat for long-term NSO conservation. Range-wide, the nesting/roosting habitat lost from fire represents about 31 percent of the total habitat loss over the 20-year NWFP timeframe. Based on the most recent meta-analysis for NSOs within the NWFP area, barred owls are the likely primary negative influence on NSO population recovery. I carefully considered the analysis in the FEIS and Biological Assessment, and the current occupancy history of the one home range in the project area. The analysis demonstrates that treatments are not likely to exacerbate competitive interactions between NSO and barred owls by reducing the availability of high-quality habitat or prey availability, and that treatments are expected to increase overall habitat resiliency to wildfire effects.

There are 720 acres of designated Critical Habitat for the NSO in the project area within the larger 112,179-acre East Cascades South critical habitat subunit (ECS-3). All 720 acres are within the one NSO home range.⁶ In Primary Constituent Elements (PCEs) of Critical Habitat, effects to nesting/roosting (PCE 2), dispersal (PCE 4) and capable habitats (PCE 1) will be wholly beneficial, insignificant or discountable.

In foraging habitat designated as critical habitat (PCE 3), there will be a temporary reduction in the quantity and quality of habitat, resulting in short term and minor adverse effects to PCE 3 on 270 acres, along with short and long term beneficial effects. Variable density thinning treatments will degrade PCE 3 foraging habitat as some stand components of trees, canopy closure, layering, snags and logs will be reduced or removed on approximately 224 acres. Stand components of PCE 3 will be similarly reduced and removed, but at a more intensive scale such that foraging habitat quality and function is downgraded to dispersal habitat (PCE 4) on approximately 46 acres. These activities will similarly influence prey and prey-base habitat in the short and long term. The *overall* habitat function across affected stands will not be removed. While these treatments result in both a short and long term beneficial effect to NSO habitat and critical habitat, including prey, they are not considered insignificant or discountable in the short term. The effects will occur in 82 percent of the PCE 3 in the project area, in a home range that is 59 percent on private lands and currently below the recommended levels of suitable habitat to better support NSO survivorship and productivity.

The Final Critical Habitat Rule describes that some management activities may have short term adverse effects and long term beneficial effects on physical or biological features of critical habitat. The Revised Recovery Plan recommends land managers actively manage portions of both moist and dry forests to improve stand conditions and forest resiliency, which should benefit the long term recovery of the northern spotted owl (USDI-FWS, 2011 pp. III-11). Over a 20 to 30 year timeframe, thinning and fuel reduction treatments are expected to enhance the function of the project area's critical habitat by improving long term quality of roosting, foraging and dispersal habitat. Treatments will facilitate capable habitat toward dispersal and lower quality foraging conditions. With no action, critical habitat will remain vulnerable to loss from overstocking, insect and disease outbreaks and a potential reduction or removal of habitat elements or connectivity from passive crown fire. Preliminary modeling of a wildfire under 97th percentile weather conditions predicts up to 40% mortality in the natural stands, and approximately 63 percent of this area is designated as Critical Habitat.

As I described above, the larger proportion of suitable habitat on NFS lands at the core and home range scale, the current unoccupied status of the home range by a reproductive or territorial NSO pair, and the management direction for, and conditions in, the Elk Flat LSR afford an opportunity to positively affect structural and compositional changes in NSO habitat and components of PCE 3 over the long-term. This is consistent with Recovery Action 10, and the recommendations in the Final Critical Habitat Rule. The treatments in critical habitat will increase foraging habitat resilience and long term habitat capability to support NSO life history functions and contribute positively toward the expected function of the Elk Flat LSR and one home range to provide a key area for dispersing juvenile, subadult or non-territorial adult NSOs.

The treatments in foraging PCE 3 will affect and maintain 68 percent of the PCE 3 in the project area, and will result in 14 percent of foraging PCE 3 being converted to dispersal PCE 4 in the short term. Dispersal PCE 4 will transition to foraging habitat over the 10 to 30 year period after treatment, as remaining conifer trees and released oaks grow larger; with a long term improvement in overall foraging suitability from larger tree sizes and structure, increased resilience, and an increase in hardwood and prey species

⁶ Not all acres of the home range, or core, are designated as critical habitat.

diversity. The proposed treatments will result in a greater assurance of long-term maintenance of suitable and dispersal habitat, and will contribute positively to the overall function of the ECS-3 subunit, which is to provide demographic support in an area of sparsely distributed high-quality habitat and Federal land, and provide for population connectivity between subunits to the north and south. The treatments will have minor and short term adverse effects, and long term benefits on 38 percent of the critical habitat in the project area, and will affect less than one percent of the ECS-3 Critical Habitat Subunit. Based on the analysis in the Biological Assessment, the project actions will not significantly reduce the value of the primary constituent elements of Critical Habitat or reduce the overall intended function of the ECS-3 Critical Habitat Subunit.

The project was designed to minimize or avoid direct effects to individual Threatened and Endangered species, and Forest Service Sensitive species and their habitat. As I described above, there are no mechanical treatments proposed in high value NSO habitat areas. This is also the case in the one known northern goshawk territory, and in suspected or known fisher denning areas that may be used as reproductive sites. Limited operating periods (LOPs) during critical breeding periods until NSO surveys, activity center searches and spot checks for, per the 2012 survey protocol, are completed each year will remain in place to limit the potential for direct effects to breeding individuals. The survey efforts will be continued prior to, throughout and after project implementation, along with monitoring of treatments and habitat conditions post-treatment, including underburning. This monitoring meets the guidance under Recovery Action 11. Similar limited operating periods and survey efforts are in place for the endangered gray wolf, and Forest Service sensitive northern goshawk and fisher. The LOPs and all project design elements, RPMs, BMPs and SOPs will reduce the potential for adverse direct, indirect or cumulative effects to these, and other species and habitats of concern.

There will be no removal of suitable habitat function for any listed or sensitive species, though some habitat elements will be variably reduced or removed (canopy closure and cover, basal area, shrubs, snags, down wood, grasses, forbs). Low- intensity prescribed fire in nesting/roosting, resting/denning and high quality foraging habitats is expected to result in beneficial effects of increased understory vegetation diversity and structure and increases in prey base while reducing surface fuel loading. Effects to NSO habitat are described above, and for the northern goshawk, foraging habitat will be similarly degraded, with function maintained, on 893 acres and downgraded on 98 acres. Approximately 990 acres of suitable habitat for fisher will be degraded and function will be maintained. Approximately 608 acres of capable habitats for these species will be improved and transitioned toward suitable.

While foraging habitats will be degraded or downgraded, these effects are not expected to create any significant barriers to habitat connectivity for these, or other sensitive species, or adversely impact how goshawk or fisher utilize the landscape for foraging. Habitat quality and locations have been field-verified, and the project design and RPMs will maintain and protect dispersal corridors in Riparian Reserves, critical reproductive areas and important habitat elements within and outside thinning units. The variable treatments will result in increased vertical and horizontal heterogeneity and species diversity. Treatments will improve capable habitats and transition stands toward more resilient conditions. The project's effects, in combination with the ongoing actions and reasonably foreseeable future activities on both federal and adjacent private lands, are not expected to result in any cumulative direct or indirect adverse effects to individuals or habitats. Nor are they expected to significantly impair the ability of NSO, northern goshawk or fisher to move across and utilize the project area or respective larger cumulative effects analysis areas for each species. Private actions include similar limited operating periods and survey requirements, and habitat retention guidance under the California Forest Practice Rules. The treatments on federal lands in the last 20 years have been implemented to protect or enhance habitat, or occurred in non-habitat, and are either considered cumulatively beneficial or to have had no cumulative effects on habitat or individuals.

As demonstrated in the FEIS, I believe this project will reduce the risk of losing existing and developing late-successional habitat in the Elk Flat LSR and improve biodiversity throughout the entire project area. It will achieve this through treatments that promote growing conditions for sustainable ponderosa pine stands, that maintain and promote higher quality mixed conifer stands, that maintain and promote hardwoods where they are currently found, and that restore meadow and Riparian Reserve functions.

The selected alternative will result in multiple public benefits and reduced resource impacts. Public benefits include both environmental and economic benefits. Environmental benefits include increased tree and stand resiliency during drought conditions, and climate change effects; and resilience to the ongoing and any future large-scale disturbances and detrimental effects from disease, insects or potential wildfire in the short and long term. Habitat for late-successional associated wildlife species will be protected and enhanced in the short and long term. Decommissioned unauthorized routes, restored meadow and hydrologic function, combined with increased forest resiliency to natural disturbances, and accelerated development of late-successional forest will result in improved watershed health and condition over the long term. Economic benefits include renewable sawlog and biomass volume, revenue and jobs. Jobs and income will be generated directly from the industries performing the tasks, as well as indirectly from the inter-industry purchasing habits and household expenditure patterns of directly affected industries and employees. Project actions will help support the continued operation of local facilities, such as biomass plants.

Environmental Documents Considered

In arriving at this Decision, I reviewed the project record including the FEIS and appendices, the specialist reports, and the consultation and coordination records completed to date.

Balance of Equities

I considered the balance of equities of the benefits of implementing the selected alternative, the harms and costs of the No Action alternative, and the risks of delayed implementation. Implementation of this project may result in some negative effects that are necessary to obtain the benefits of reducing the risk of large-scale habitat loss from ongoing natural disturbances and stressors such as drought, insects and disease. They are also necessary to reduce the risk and the high potential for habitat loss under a summer-time wildfire, and for accelerating development of late-successional and old-growth habitat characteristics in project-area stands.

Implementation of any of the alternatives considered in detail, or no action, could cause adverse environmental effects that cannot be effectively mitigated or avoided. Unavoidable adverse impacts often result from managing the land for one resource at the expense or condition of other resources. Some adverse effects are short term and necessary to achieve long term beneficial effects. While adverse effects of the action alternatives fall within Forest Plan standards and comply with the regulatory framework, some may view these losses as an adverse impact to the environment. Adverse effects are discussed in detail by resource in Chapter 3 of the FEIS.

Conversely, taking no action at this time will leave stands in the Elk Flat LSR susceptible to continued large scale disturbance and loss of existing and developing late-successional habitat. Under no action, forest stands are less likely to develop into desirable late-successional habitat conditions, due to overcrowding and increasing areas of root disease and insect activity with subsequent mortality. Loss of habitat is occurring right now, and the predicted adverse effects are relatively short term and minor in comparison to the ongoing and potential future losses of late-successional habitat.

The long-term public benefits anticipated from project implementation outweigh the short-term costs caused by implementing the selected alternative. The FEIS presents an objective and well-documented analysis of environmental effects expected to result from implementation of the selected alternative.

Consideration of Public Comments

Public comments were important in evaluating this project and in making my Decision. The FEIS Appendix I lists public comments on the draft EIS and includes the Forest Service's response to those comments. I considered all of the public comments in making this Decision, including opposing science, as described in the responses to comments and where applicable, in the consideration of effects and the required findings and consistency reviews. In particular, I consider the following:

Maintaining Large-Diameter Trees

During the comment period on the DEIS, several comments expressed concern about retaining large diameter trees, and suggested setting an upper diameter limit for trees selected for removal. In most cases a specific diameter was not specified in the comments, but the importance of large diameter trees in maintaining and developing late-successional forest vegetation for wildlife and other values was emphasized. The DEIS listed two Alternatives not Considered in Detailed Analysis that set diameter limits and these were carried through to the FEIS (Alternative 6 and Alternative 8). In light of the comments received on the DEIS, I again considered upper diameter limits.

Individual residual old-growth trees (also known as predominant or legacy trees) are scattered throughout portions of the project area; there are no old-growth stands. The silviculturist, wildlife biologist, and fuels specialist have carefully reviewed existing stand characteristics and desired stand conditions. I kept two of the project's key objectives in mind while considering an alternative that imposes upper diameter limits: 1) to reduce the risk of losing mid- and late-successional habitat while increasing stand resilience to disturbance, and 2) to accelerate development of late-successional and old-growth forest characteristics.

I agree that large trees are valuable ecosystem components and that diameter limits are a useful tool in some instances. To meet specific habitat objectives for both NSO and fisher in mixed conifer stands, the selected alternative includes a diameter limit for certain conifer species in the oak release treatments within NSO Critical Habitat. In this instance, I opted to restrict the oak release prescription in favor of retaining and promoting important habitat elements within NSO Critical Habitat. I acknowledge that as the upper diameter limit increases, our ability to fully achieve the Purpose and Need for Action improves; however, any particular arbitrary upper diameter limit in the absence of specific rationale would artificially constrain our ability to most effectively achieve the desired conditions. A diameter limit would reduce the ability to promote resiliency in the largest trees and stands as a whole, and is not necessary to retain large trees.

Project treatments are already designed to emphasize retention of large or old trees that exhibit late-successional characteristics. High value habitat areas contain the majority of these older, predominant trees and these areas will not be mechanically treated. Thinning treatments are primarily thinning from below which will result in removal of mostly smaller diameter trees, though not all areas will be purely thinned from below as some lower and mid-story trees will be retained. Tree selection criteria will retain some trees in the smaller size classes, thin heaviest in the suppressed and intermediate size classes, and thin some codominant trees where needed to reduce density and protect adjacent larger trees. The thinning treatments will retain the largest trees, including all those with late-successional characteristics. Exceptions to this, and where some dominant and large trees may be removed, is where radial thinning occurs around predominant, legacy pine (up to 193 acres); in the group selections in natural stands (up to 16 acres), and in the meadow enhancement unit (378 acres). The average diameter at breast height for

trees that will be removed *overall* is 11.9 inches, while the average stand diameter increases by approximately four inches immediately post-treatment. This relatively small average diameter removed validates that the largest trees are generally being favored for retention and that the variable density thinning and thinning from below are accomplishing project objectives. Treatments will increase forest stand resiliency, enhancing the potential for these stands to persist into the future. Reduced competition will enhance tree vigor, which in turn will promote growth to larger diameter trees with late-successional structure more quickly than with no action. Along with the majority of the larger tree size classes and higher quality habitats in the project area, the unthinned patches and high value habitat areas will remain at risk to loss from high stand densities in portions of these areas, and will also retain fungal and disease patterns that contribute to and create valuable late-successional structure.

Refer to Appendix I of the FEIS, Response to Comments for a more detailed consideration of concerns expressed about large tree retention. In particular, see the responses to concern numbers 2, 14, 103, 123, 133, 138, and 163.

Tree Species Diversity

I reviewed comments regarding the appropriateness of managing for ponderosa pine and hardwoods in the Elk Flat LSR, considering that NSOs benefit from mixed conifer. While it is acknowledged that mixed conifer can provide suitable NSO habitat, ponderosa pine is the appropriate species within the pine-dominated stands in the eastern and southeastern portions of the project area, and are an important habitat component within mixed conifer stands in dry forest ecosystems. Hardwoods are in the project area's mixed conifer-pine stands, and are important for NSO prey, the sensitive fisher and species diversity.

The LSRA (1999 pp. 2-3) acknowledges that past actions, including fire suppression, in the California Cascades have resulted in forest composition shifting toward more mixed conifer communities, and stands are occupying greater than the sustainable carrying capacity. It also describes that the Forest's portion of this province has been repeatedly recognized as crucial to providing sufficient habitat in both quality and quantity to provide NSO connectivity (p. 3), consistent with the primary function of the ECS-3 Critical Habitat Subunit. The LSRA describes the dominant vegetation type in the Elk Flat LSR as ponderosa pine and white fir (p. 227). Fire suppression has facilitated encroachment of more shade tolerant species in the pine-dominated stands and combined with overstocked conditions and lack of fire, these stands are being lost and remain at risk to further loss. Within the ponderosa pine type, tree density is too high for it to remain and thrive, leading to an unnatural stand conversion. Stands transition to white fir-pine and mixed conifer-pine in the central, western and northwestern portions of the LSR.

In addition to providing species diversity, California black oak and aspen provide high value habitat for wildlife including den and rest sites for fisher, prey base for NSO and fisher, and forage base for elk and deer. Treating stands to maintain and promote hardwoods as a stand component at naturally occurring levels is consistent with Forest Plan and LSRA direction. The Edson Watershed Analysis identifies hardwood decline as a concern for forest resilience. In the absence of fire, shade-tolerant species establish in the understory and can exclude shade-intolerant hardwoods and eventually fully occupy a site. Conifer species overtop aspen and oak, and successfully out-compete hardwoods for available sunlight, water and nutrients.

In response to the existing conditions, management direction, and the importance of the California Cascades and ECS-3 subunit function for NSO connectivity, the thinning and hardwood release treatments are tailored to the relative species composition within the project area. Lower basal areas are prescribed in pine-dominated areas, reflecting the lower tolerance of pine to density-related stress, and a range of higher basal areas are prescribed to support NSO foraging in mixed conifer-pine and white fir-pine stands. The proposed action is not attempting to convert mixed conifer to pine or pine to mixed

conifer, but rather manage to the appropriate densities for the forest types currently in the project area. While this results in overall higher basal areas being retained in a larger proportion of the project area than what was likely present under a more frequent, low- to moderate-intensity fire regime where there would be higher levels of widely-spaced, larger trees; it is a balanced and compromised approach to manage a portion of the Elk Flat LSR for threatened and sensitive species habitat and all of the LSR for late-successional conditions based on current species.

Releasing around predominant, legacy pine and black oak will have some short term and minor adverse effects to NSO critical habitat in the immediate vicinity of these release treatments. As I described above, affected NSO habitat will continue to function for foraging owls, and will be benefitted over the long term by retaining and promoting these valuable components of large trees and hardwoods.

Achieving Fuel Objectives with Machine Piling

I considered comments about machine piling effects on soils and watershed health. The high levels of mortality combined with an interrupted fire return interval has increased down woody debris to unnaturally high fuel loadings. In response to the public concern, I asked the IDT to closely review the project comments, related literature, and proposed actions. As described under the purpose and need section above, the selected alternative is expected to meet the purpose and need and is compliant with all applicable laws, regulations and policy. The selected alternative includes RPMs and application of BMPs to protect soils. Piling will not be done over an entire unit; only where needed to reduce levels of natural woody debris accumulations from mortality, or where activity-generated woody debris accumulates (typically from breakage of stressed trees), that exceeds the desired down wood levels. Manual piling will be done in limited sensitive areas; however, machine piling is the method to be employed in most of the 39 units that will need piling where the size and amount of the material limits the safe feasibility of hand piling. Soil Quality Standards will be met post-project. Addressing the high levels of surface fuels is important to reducing the risk of uncharacteristic fire in the project area and machine piling is a necessary component of fuels reduction for the project.

Impacts to Northern Spotted Owls, Habitat or Critical Habitat

I considered all comments on the project, including those regarding adverse impacts to NSO habitat, the influence of barred owls, research related to owl's use of burned forest after wildfires, appropriateness of active management in dry forest ecosystems and consistency with the NWFP, Revised Recovery Plan, or Final Critical Habitat Rule.

My consideration of the effects to NSO and NSO habitat is included under "Consideration of Effects" above. The analysis completed for the project includes the best available, site-specific information and science relative to NSO habitat use, including information from the Recovery Plan and Final Critical Habitat Rule, applicable research and literature on NSO use of dry forests, NSO prey and treatment effects on prey, and a review of opposing science. A consistency assessment for how the project meets Forest Plan Standards and Guidelines for maintaining and enhancing species habitats consistent with the recovery plans is included in the project record, and summarized in Chapter 3 of the EIS and EIS Appendix E. The one home range that overlaps a portion of the project area is not considered active or occupied by a territorial or reproductive NSO pair. Treatment types and locations in the core and home range were prioritized in accordance with recommendations for Recovery Action 10. In addition, the project does not mechanically treat any high value NSO habitat, in accordance with recommendations for Recovery Action 32.

In foraging habitat, the variable density thinning, combined with follow-up prescribed fire and other surface fuel treatments meet recommendations in the Recovery Plan for restoring dry forest ecosystems. As I described above, foraging habitat will be degraded or downgraded but will not significantly impact

how NSOs use the landscape for foraging. Project-wide, the variable density thinning treatments will maintain important habitat components and attributes such that the remaining conditions are well within the range of foraging habitat conditions frequently used by NSO. Additionally, the retained and increased species diversity, residual large trees, snags and down wood will contribute to habitat functioning as foraging post-treatment; providing prey base habitat and thermoregulation sites. The selected alternative will meet the special management considerations from the Final Critical Habitat Rule.

Active management is entirely consistent with the Revised Recovery Plan, Final Critical Habitat Rule, and the best available science for dry forest ecosystems, and when carefully examining NSO habitat and occupancy data in a project area. This is well demonstrated in FEIS Appendix E, including the consultation record in Appendix C. While NSOs can make use of some post-fire landscapes, high severity fire also reduces the function of critical reproductive and roosting habitat and likely removes this important habitat from immediate usability (USDI-FWS, 2011 pp. B-2). The amount of habitat mortality expected if a summer-time wildfire were to occur under current vegetative and fuel conditions is of significant concern in the project area, with up to 63 percent of this area being designated as Critical Habitat. Implementing the selected alternative will reduce the risk of wildfire in forest stands and help to reduce effects to higher and moderate quality NSO habitat in the Elk Flat LSR, Critical Habitat, and surrounding stands, while maintaining important habitat component and attributes.

Impacts to Boletus Mushroom Gathering at Elk Flat

I considered the impacts of the project on Boletus mushroom gathering, and motorized access to mushroom habitat. I considered additional Alternatives based on impacts to Boletus mushroom gathering concerns. Alternative 10 will add the unauthorized routes requested by the commenters to allow motorized access to their gathering areas. I did not consider Alternative 11 in detailed analysis because it will not meet the Purpose and Need for the project to restore meadow habitat, restore hydrologic function, and decommission unauthorized routes. See the FEIS starting on page 125 for more information.

Legal access is not affected by the selected alternative. The unauthorized routes being used within many portions of Elk Flat are not part of the National Forest Transportation System and were not added to the Forest Transportation System with the 2010 Motorized Travel Management Record of Decision (USDA-FS, 2010a). They do not show as open for vehicular access on the Motor Vehicle Use Map and are not legal to drive on. My Decision does not change the status of these routes, but physically decommissions them. Decommissioning the unauthorized routes in Elk Flat will help meet the Purpose and Need for hydrologic restoration. Adding the routes to the transportation system will continue the ongoing environmental degradation or require extensive reconstruction.

I also considered the negative effects to Boletus habitat in the meadow at Elk Flat from conifer removal treatments. Alternative 11, considered but not in detail in the FEIS, will shift, expand or add to the unthinned patches that are currently delineated in the meadow unit for the selected alternative. While it is acknowledged that the overall conifer removal treatment to restore early seral vegetation and the meadow is likely to negatively affect Boletus habitat, the restoration is an important purpose of the project. Unthinned patches will help protect the Boletus habitat within these areas as no conifer will be removed. The unthinned patches were established in partial consideration of the Boletus habitat, as identified by one of the commenters during scoping, and this was described in the DEIS under Alternative 5, and carried through to the FEIS (see pp. 119-120). Boletus are common on the Shasta-McCloud Management Unit and favorable conditions for them will shift locations over time through natural processes and management. Some of the RPMs and treatments will enhance boletus in other parts of the project.

Implementation

A combination of commercial stewardship (goods for services) contracts, service contracts and Forest Service employees will implement the actions. My decision includes adherence to all Resource Protection Measures, monitoring requirements, and Best Management Practices as described in FEIS Chapter 2 and FEIS Appendix C. All legal requirements and applicable laws and regulations will be met. A prescribed burn plan, including a Smoke Management Plan in compliance with the EPA Smoke Management Program, will be submitted to the Siskiyou County Air Pollution Control District (APCD) per their rules.⁷ The Siskiyou County APCD requires burn permits for all burns larger than 50 acres⁸ or for burning more than 3,000 tons material, or if within five miles of a sensitive receptor (APCD, 2014 p. 7.6). The Northeast Air Alliance (NEAA) has developed a standard Smoke Management Plan template (NEAA, 2012). As part of the Smoke Management Plan for the prescribed burn, the Forest must provide a detailed meteorological prescription to be met prior to ignition.

Public Involvement

The project proposal was first listed in the Shasta-Trinity National Forest [Schedule of Proposed Actions](#) on January 1, 2010.

Scoping

The Notice of Intent to prepare an environmental impact statement was published in the Federal Register on February 28, 2013 (USDA-FS, 2013). A legal notice for the NOI was published in the Redding Record Searchlight on March 3, 2013 and a display add was published in the Mt. Shasta Herald on February 27, 2013. The agency transmitted email notification to interested parties regarding the expected publication date of the NOI, and announcing a public meeting, on February 25, 2013. The agency prepared a scoping document that was mailed to interested individuals, organizations and agencies, and posted on the Forest's website, concurrent with the Notice of Intent (USDA-FS, 2013b). The proposal was provided to the public and other agencies for comment during scoping (February 28, 2013 through April 4, 2013). Public meetings were held on March 5 and March 26, 2013 in McCloud and Mt. Shasta.⁹ Eleven comment letters or emails were received in response to the scoping effort. Comments and consideration are provided in Appendix B of the FEIS.

Issue Identification and Alternative Development

Using the comments from the public during scoping and other agencies and tribes during consultation, the interdisciplinary team identified several issues regarding the effects of the proposed action (see FEIS starting on page 45). Main issues of concern included:

⁷ Regardless of local requirements, the Forest Service Manual Chapter 5140 requires that all burning on National Forest System lands have an approved prescribed fire plan prior to any ignitions. Burning activities will be coordinated with affected landowners and control agencies.

⁸ While the APCD rules require approval for all burns over 50 acres or within 5 miles of a sensitive receptor, the Forest Service has agreed as a member of the Northeast Air Alliance to submit plans for approval when more than 10 acres are planned for prescribed fire.

⁹ In addition to the formal scoping period the Forest also reached out to the public and other agencies and Tribes. Field trips were held in July and August of 2012, and U.S. Fish and Wildlife Service and Tribal Consultation has been ongoing throughout the planning process.

Issue 1 – Large Trees and Snags

Large tree and snag removal and group selection logging would directly harm forest health and late-successional ecosystems in Late-Successional Reserves, Riparian Reserves and Critical Habitat; prevent rather than facilitates forest succession processes; and is not consistent with the Northwest Forest Plan.

Issue 2 – Road Construction

Road construction directly harms forest health and wildlife and results in long-term impacts to soil health and productivity.

Issue 3 – Critical Habitat

Treatments within designated critical habitat for the northern spotted owl violate the 2011 Revised Recovery Plan and the 2012 Final Critical Habitat Rule for the Northern Spotted Owl

Issue 4 – Mushroom Collection in Elk Flat

There will be negative impacts to Boletus mushroom growth and collection activities within Elk Flat

Issue 5 – Machine Piling

Machine piling has disproportionately harmful impacts on watershed and soil resources.

The Forest Service developed alternatives to address these concerns. Key Issues 2 and 3 prompted development of Alternatives 2 and 3 considered in detail, and Alternative 9 not considered in detail. Issues 4 and 5 prompted development of Alternatives 5 and 7 respectively, considered but not in detail. Concerns brought forward in Issue 1 prompted development of Alternatives 6 and 8 considered but not in detail. Resource effects relating to these concerns are also included in Chapter 3 of the FEIS. Summaries of actions by alternatives are provided in Tables 22 through 26 of the FEIS and Alternative Maps are in Appendix D.

Comments on the Draft Environmental Impact Statement

Following alternative development and interdisciplinary analysis, a notice of availability appeared in the Federal Register on January 15, 2016 (USDA-FS, 2016) and a legal notice for comment was published in the Redding Record Searchlight on January 19, 2016 (USDA-FS, 2016). A display ad was placed in the Mt. Shasta Herald on January 20, 2016. A hardcopy of the DEIS was mailed to everyone on the project mailing list who requested one. The hardcopy DEIS was available at the Mt. Shasta and McCloud ranger station offices, and upon request during the comment period. It was available online throughout and after the comment period. The 45-day comment period for the DEIS ended on February 29, 2016. In response, 14 letters were received of which 13 provided comments and one noted the party had no comment. Of the 13 letters providing comment, two were from more than one individual or organization. Two of the letters were received from one organization. A summary of comments received on the DEIS and Forest Service responses is included in Appendix I of the FEIS.

From the comments on the DEIS, two additional alternatives were developed, but not considered in detail; Alternatives 10 and 11 regarding access to Boletus collection areas and maintaining Boletus habitat at Elk Flat.

Alternatives Considered

In addition to the selected alternative, the FEIS analyzed and reviewed three action alternatives, a no action alternative, and five alternatives that were eliminated from detailed study.

Alternatives Considered In Detail

In addition to the selected alternative, I considered three alternatives in detail. Chapter 2 of the FEIS provides detailed descriptions of the actions and each alternative description displays summary tables of the quantities of each action employed. A comparison of actions between alternatives is provided in the FEIS starting on page 97 (Table 29).

Alternative 2 - No New Temporary Road Construction Other Than Those Required for Landing Use/Access

Alternative 2 responds to Key Issue 2 regarding temporary road construction impacts on forest health and connectivity within the LSR. It is similar to Alternative 1 with the exception that no temporary roads will be constructed to complete project activities other than to access landings (typically, a landing “driveway” is about 200 feet). Project activities will be completed utilizing the existing forest transportation system roads and existing unauthorized routes in the project area. While the total acreage between Alternatives 1 and 2 treated is the same, Alternative 2 reduces the ability to mechanically treat approximately 103 acres with a corresponding decrease in needed landings. Hydrologic function restoration completed through mechanical means also drops slightly, as access to the work areas decreases. All other project design criteria, thinning, fuels treatments, and road actions are the same as Alternative 1 and 3,483 acres in the project area will still be underburned. Forest transportation system road maintenance and other actions will be the same under Alternative 2 as Alternative 1; however, the maintenance will be less intensive due to reduced hauling.

Alternative 3 - No Treatment of Natural Stands within Designated Critical Habitat for the Northern Spotted Owl

Alternative 3 is responsive to the issue regarding the assertion that treatments within designated critical habitat for the northern spotted owl violates the 2011 Revised Recovery Plan and the 2012 Final Critical Habitat Rule. Alternative 3 is the environmentally preferred alternative in the short term. Under Alternative 3, no critical habitat will be treated, with the exception of the thinning and other mechanical treatments proposed in seven plantations. No units within critical habitat will be underburned. In comparison to Alternative 1, the plantations in critical habitat that are prescribed for machine piling and pile burning will require additional fireline construction to provide a barrier between the pile burning areas and the surrounding untreated natural stands. Alternative 3 treats 270 fewer acres with silvicultural harvest than Alternative 1. All other project design criteria, thinning and fuels treatments and road actions outside of critical habitat are the same as Alternative 1.

Alternative 4 – No Action

The no action alternative is required (40 Code of Federal Regulations (CFR) 1502.14(d)) and provides reviewers a baseline to compare the magnitude of environmental effects from the action alternatives. Alternative 4 is the continuation of the existing condition, current management and ongoing activities in the project area. Under no action, no treatments or road actions will be implemented to accomplish the purpose and need and project resource objectives. Current management and ongoing activities in the project area, as permitted under past, current or potential future NEPA will continue. I did not select Alternative 4 for implementation because it will not address the purpose and need for action. It will not reduce risk of stand loss from ongoing density, insect and disease-related mortality, or reduce the potential for extreme fire behavior in the LSR during a summer-time wildfire. This alternative does

nothing to address the critical need of restoring ecosystem resilience, function and processes, primarily through mechanisms that reduce inter tree competition for site resources, promote tree growth and late-successional development, and allow for reintroduction of fire.

Alternatives Considered, but Not in Detail

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Public comments received in response to the proposed action provided suggestions for alternative methods for achieving the purpose and need. Seven additional alternatives, as well as the original scoped Proposed Action, are considered but not in detailed analysis (see below). These Alternatives are either duplicative to an alternative considered (i.e., the original Proposed Action), do not adequately meet the Purpose and Need for Action, or will cause more harm to the environment.

The original Proposed Action described the Purpose and Need for Action in terms of the primary purpose to reduce the current and future risk of large-scale disturbance events within early, mid and late-successional habitat within the Elk Flat LSR and nearby stands per LSRA Objectives III and I. Additional benefits of the project were to increase resilience and promote continued development and connectivity of late-successional forest habitat in the Elk Flat LSR (LSRA Objectives II and IV); restore and maintain meadow habitat in Elk Flat, increase hardwood diversity across the project area, and improve streamflow and vegetation conditions within Riparian Reserves associated with Ash and Swamp Creeks and their tributaries. To clarify that the additional benefits were part of the Purpose and Need for Action, they are now identified as secondary purposes under Alternative 1. Additionally, the original Proposed Action described road decommissioning in support of reducing impacts to meadow habitat, streamflows and wildlife habitat. It did not explicitly include management of the transportation system as a purpose and need, whereas the selected alternative includes it as a secondary purpose for clarity. Appendix G in the FEIS provides a list of the incremental changes between the original Proposed Action and the selected alternative under my Decision.

Additional alternatives considered but not in detail include the following, in addition to the original proposed action: Alternative 5 – *No Treatment in Elk Flat Meadow to preserve Boletus mushroom habitat*; Alternative 6 – *Limit Harvest to Trees Less Than 10 Inches in Diameter*; Alternative 7 – *Eliminate the Use of Machine Piling within Treatment Units and Substitute Hand Piling*; Alternative 8 – *Limit Harvest to Trees Less Than 20 Inches in Diameter with the Elk Flat Late-Successional Reserve*; Alternative 9 – *No New Temporary Road Construction*; Alternative 10 – *Addition of Unauthorized Routes in Elk Flat to the Forest Transportation System with Seasonal Closures*; and Alternative 11 – *Alter Configuration of Unthinned Patches in Elk Flat Meadow to Protect Additional Boletus Gathering Areas*. Chapter 2 of the FEIS provides a detailed discussion of these Alternatives and why they were not considered in detail starting on page 119.

Findings Required by Other Laws, Regulations and Executive Orders

[Any portion of this section may be updated prior to my final Decision to reflect the latest information.]

National Forest Management Act

My decision to implement the selected alternative is consistent with the intent of the Forest Plan's long term goals and objectives (Forest Plan p. 4.4 to 4.6). The project is designed in conformance with Forest Plan standards, and incorporates appropriate Forest Plan guidelines for Late Successional Reserves, Matrix-Commercial Wood Products, Riparian Reserves, and Heritage Resource Management within

Management Areas 2 and 3. It includes the Forest-wide Late Successional Reserve Assessment Desired Conditions and Management Recommendations (Forest Plan pp. 4.11 to 4.30, 4.37 to 4.44, 4.50 to 4.64, 4.67, and 4.79 to 4.83; LSRA p. 162 to 208). I find the selected alternative to be consistent with the provisions of the National Forest Management Act (see FEIS p. H-12).

Forest Plan Consistency

Appendix H in the FEIS (pp. H-13 to H-32) provides the Forest Plan consistency review for resource topics not covered in the effects analyses provided in the FEIS by resource in Chapter 3. Consistency with the Aquatic Conservation Strategy, Late Successional Reserve Objectives, Management Indicator Assemblages, and Survey and Manage requirements are among the key Forest Plan requirements relative to the Elk Project:

- **Aquatic Conservation Strategy (ACSO)** - Page B-10 of the NWFP Record of Decision¹⁰ requires the decision maker to find that the proposed management activity is consistent with the ACSO by finding that a project “meets” or “does not prevent attainment” of the ACSO. This project both meets and does not prevent attainment of the ACS Objectives. Overstocked stands and fuels are variably reduced across the project area Riparian Reserves. Treatment within Riparian Reserves improves openings and increases sunlight for riparian vegetation. Floodplain processes and functions are restored. The FEIS (pp. H-13 to H-15) provides specific information on how the project responds to each of the nine ACS Objectives.
- **Management Indicator Assemblages** - The Forest Plan directs resource managers to monitor assemblage habitat trends at the National Forest scale (Forest level; Forest Plan p. 5.16). The Forest Plan identifies management indicator assemblages for monitoring and lists examples of representative species for each assemblage. Five assemblage habitats will be affected. Treated areas will continue to provide the same quantity and distribution of each assemblage type after the project is completed. The project is not likely to result in any meaningful change to population trends or habitat availability for the representative species. (See FEIS p. H-25 to H-26 for more information).

Survey and Manage Standard and Guideline - Page 4.12 of the Forest Plan lists provisions for survey and manage species (Appendix R of the Forest Plan). The project was analyzed for potential impacts to Survey and Manage species. All project activities are compliant with direction regarding the Survey and Manage standards and guidelines issued by Regional Foresters’ Connaughton and Moore (Connaughton, et al., 2014).¹¹ (See FEIS pp. H-26 to H-28).

Late-Successional Reserve Consistency¹² - I find the Elk Late-Successional Reserve Enhancement Project is consistent with the Ecological Principles for Management of Late-

¹⁰ 1994 ROD, Attachment B, p. B-10. The 2007 ACS Compliance Memo direction resulting from the Pacific Coast Fed. of Fishermen’s Assn. et al v. Natl. Marine Fisheries Service, et al and American Forest Resource Council, Civ. No. 04-1299RSM (W.D. Wash)(PCFFA IV) requires a finding of consistency with the NWFP, 1994 ROD, Attachment B, p. B-10. Page B-10 requires the decision maker to find that the proposed management activity is consistent with the ACSO by finding that a project “meets” or “does not prevent attainment” of the ACSO.

¹¹ This direction was issued pursuant the district court’s remedy order issued on February 18, 2014 (Conservation Northwest v. Bonnie, W.WA No. C08-1067-and other Mitigation Measure Standards and Guidelines (USDA-FS & USDI-BLM, 2001) [or 2001 ROD].

¹² Per the NWFP, thinning or other silvicultural activities must be reviewed by the REO and/or the RIEC. (NWFP page 8 and pages C-12, 13, and 26). The NWFP describes that a management assessment should be prepared for each large LSR/group of smaller LSRs before habitat manipulation activities are designed and implemented. The 1999 LSRA met the management assessment requirement and the August 26, 1999 letter from REO satisfied the

Successional Forests under the Northwest Forest Plan. The project is designed to move the landscape toward the desired condition for the Elk Flat LSR as guided by the visions, goals, strategies and design criteria embodied in the NWFP, Forest Plan and LSRA. Ecological Principles for Management of Late-Successional Forests discussion in Section B of the NWFP Standards and Guidelines were assessed in project development (FEIS pp. B-24, H-17, H-22). The Forest submitted a request to the Regional Ecosystem Office for a late-successional reserve project consistency review for consistency with objectives of the NWFP (NWFP pp. 35, C-12) and specific treatment standards in the Forest-wide LSRA on March 16, 2016 (Myers, 2016). The Forest received concurrence that the project is consistent from the Regional Ecosystem Office on March 23, 2016 (Rubado, 2016).

All treatments fall under LSRA activity design criteria (ADC) numbers 1, 4, 7, 9 and 10. However, the Forest asked for a REO consistency review because some of the treatments deviate from the treatment standards described in the LSRA, specifically for ADC 4 and ADC 7 in order to promote of species diversity and reduce risk with group selection treatments, and reduce risk to the LSR from potential extreme fire behavior in the Extensive Mortality Area. The creation of openings through group selections will be up to two acres in size, larger than the ¼-acre size treatment standard described for ADC 4c in the Forest-wide LSRA, and there will be mortality of live trees during the burning of the Extensive Mortality Area, also inconsistent with treatment standards for ADC 7b, 7c and 7h in the LSRA:

- Group selections in six ponderosa pine plantations and two natural stands will create openings between 0.6 and 2 acres, which is larger than the ¼ acre opening size described for treatment standard “c” of ADC 4 (FEIS p. H-22 to H-23). The group selection size is based on recent science (North, et al., 2012; Churchill, 2013) and is designed to create structural and age diversity and provide for successful regeneration and planted shade intolerant pine in natural stands, and planted mixed conifer species in plantations.
- The Extensive Mortality Area treatment will result in mortality of live trees during prescribed fire activities within approximately 79 acres. Snags and logs will be retained, but many will be consumed by the burn. The treatment is consistent with all treatment standards of ADC 7, except treatment standards “b” (retention of live trees), “c” (retention of snags), and “h” (retention of logs). These deviations are needed to reduce risk and result in greater assurance of long-term maintenance of habitat, particularly if a fire were to start in or move through the extensive mortality area and transition, or spot to surrounding stands in the LSR.

Endangered Species Act

[This section will be updated prior to my final Decision in order to reflect the latest information.]

I find the selected alternative complies with the Endangered Species Act (ESA). The Forest Service has completed a thorough analyses of the selected alternative’s effects on federally listed species. Consultation with the FWS under Section 7 of the Endangered Species Act has yet to be completed (19 U.S.C. 1536 (c)), however. See FEIS p. 264, Appendix H (p. H-6) and Appendix E for more information.

REO/RIEC review requirement. The August 26, 1999 REO determined that the silvicultural activities as described in the LSRA were consistent with the standards and guidelines (S&Gs) of the NWFP and were exempted from further project-level REO review (p. 5).

The Forest Service made a determination that the selected alternative: may affect, but is not likely to adversely affect the northern spotted owl; is likely to adversely affect designated critical habitat; may affect, but is not likely to adversely affect gray wolf; and will have no effect on gray wolf critical habitat. The Forest Service submitted a draft Biological Assessment to the FWS on January 18, 2016; and a final agreed-to Biological Assessment on April 4, 2016. The Forest awaits a Biological Opinion from the FWS prior to signing a final Decision. Based upon streamlined consultation timelines, the Biological Opinion is due within 60 days after confirmation that the FWS has received the final Biological Assessment. Under streamlined consultation procedures, the FWS and Forest may agree to an extension of this timeframe, if the FWS requires additional time to complete its independent analysis (USDA-FS; USDI-FWS; USDI-BLM, 2013 p. 8). At this time, the FWS is expected to issue its Biological Opinion prior to my final Decision on the Project. The Forest Service will adjust the project as needed to comply with any terms and conditions in the Biological Opinion.

The Biological Assessment provides the analysis of effects that are expected to occur from implementing the selected alternative. It was prepared in accordance with the legal requirements set forth under Section 7 of the Endangered Species Act of 1973, as amended [16 U.S.C. 1536 (c) *et seq.* 50CFR 402], and its implementing regulations. It follows the standards established in Forest Service Manual direction (FSM 2672.42) and the guidance provided in the Consultation Handbook (USDI-FWS & NOAA-NMFS, 1998). The final Biological Assessment is included in the FEIS as Appendix E.

The Shasta-Trinity National Forest engaged in streamlined consultation with the FWS.¹³ This includes early involvement by FWS biologists on the project's Interdisciplinary Team, FWS participation in interdisciplinary team meetings and field reviews, FWS providing feedback on prescriptions and minimization measures that reduce or avoid adverse effects to species and their habitat, and discussions about preliminary effect determinations. Consultation was initiated on August 25, 2009 with Red Bluff FWS field office personnel attending the first initial interdisciplinary team meeting, and transitioned to the Yreka FWS field office in October 2011. The Forest Service and Yreka FWS field office have been in streamlined consultation since 2012, which will continue through the signing of the Biological Opinion. Refer to the ESA Consultation and Coordination section in the FEIS (p. 264) and Appendix C of FEIS Appendix E for additional details on consultation.

Consultation with NOAA Fisheries was not required as the project will not affect listed or proposed fish species or critical habitat, as there is no habitat for listed anadromous fish species or designated critical habitat within or near the project area.

Migratory Bird Treaty Act

I find the selected alternative complies with Executive Order 1386 because migratory birds of management concern are identified as Threatened or Endangered, Forest Service Sensitive, representative species of Management Indicator Assemblages (MIA), the four special status species under the NWFP, survey and manage species, and Species of Conservation Concern (USDI-FWS, 2008). Effects to federally threatened and endangered species are discussed in the project Biological Assessment (NSO). Effects to sensitive bird species are discussed in the project Biological Evaluation (northern goshawk). Effects to MIA and representative species are discussed in the project-level MIA report. Effects to Survey and Manage bird species are discussed in the project-level Survey and Manage report. The four species of special management concern under the NWFP and other bird species of conservation concern in the Great

¹³ Streamlined consultation offers action agencies like the Forest Service an opportunity to address their conservation responsibilities under section 7(a)(1) of the ESA, similar to the early consultation process described at 50 CFR 402.11. Region 5 of the Forest Service has a Memorandum of Understanding with the Pacific Southwest Region of the (USDA-FS; USDI-FWS; USDI-BLM, 2013) that outlines procedures for streamlining consultation.

Basin Bird Conservation Region (BCR 9) are discussed in the project-level Migratory Bird report, available on the project website.

Clean Water Act

Through a Memorandum of Understanding with the State of California, and in compliance with the Clean Water Act for controlling non-point pollution sources, the U.S. Forest Service will implement Best Management Practices (BMPs) that are approved by the U.S. Environmental Protection Agency on ground disturbing activities (USDA-FS, 2000). All timber sales that may have the potential to impact water quality are evaluated, identified, monitored, and reported by the Forest Service and the State under a Conditional Waiver of Waste Discharge Requirements to assure BMPs are applied to prevent impacts to water quality (CVRWQCB, 2010). Appendix C of the FEIS provides the BMPs most pertinent to the project. See FEIS (pp. H-11 to H-12) for more information.

Federal Clean Air Act

The project area is not within a nonattainment air basin for any criteria pollutant under federal ambient air quality standards and therefore a conformity determination is not required under the Federal Clean Air Act (see FEIS pp. H-2 to H-3 for more information).

National Historic Preservation Act

In accordance with 36 CFR § 800.3(f) and Section 106 of the National Historic Preservation Act, Native American consultation was conducted. The State Historic Preservation Office (SHPO) was informally consulted about a non-intensive inventory strategy under Stipulation 7.4 (c) of the Region 5 Programmatic Agreement (R5 PA). (See FEIS p. 265 for more information). I find the selected alternative to be consistent with the provisions of the National Historic Preservation Act.

Environmental Justice, Executive Order 12898 of February 11, 1994

No disproportionate adverse effects on low income or minority populations from implementation of the selected alternative and this Decision are expected. The Forest has worked with local tribes to protect or avoid special areas and coordinate the timing of implementation activities to avoid disrupting traditional and ceremonial activities. No disproportionate adverse effects on Native Americans are expected. (See FEIS pp. H-7 to H-8 for more information).

Invasive Species, Executive Order 13112 of February 3, 1999, and Departmental Regulation 9500-10

Executive Order 13112 addresses preventing the introduction of invasive species and provides for their control and minimization of the economic, ecological, and human health impacts that invasive species can cause. I find that the project is in compliance with the executive order because project actions that may affect the status of invasive species have been identified. Relevant programs and authorities will be used to prevent the introduction of invasive species, and measures are in place to minimize risk and harm caused by invasive species. The project complies with DR 9500-10 that directs integration of appropriate science, and stewardship to manage and prevent the spread of noxious weeds. (See FEIS pp. H-8 to H-9 for more information).

Environmentally Preferable Alternative

Implementing regulations for the NEPA require agencies to specify the alternative or alternatives which are considered to be environmentally preferable, 40 CFR 1505.2(b). In addition, Forest Service NEPA policy defines “environmentally preferable” as: “The alternative that will best promote the national

environmental policy as expressed in the NEPA's section 101 (42 United States Code 4321). Ordinarily, the environmentally preferable alternative is that which causes the least harm to the biological and physical environment; it is also the alternative which best protects and preserves historic, cultural, and natural resources. In some situations, there may be more than one environmentally preferable alternative (36 CFR 220.3)."

Section 101 of the NEPA describes national environmental policy, calling on federal, state and local governments and the public to "create and maintain conditions under which man and nature can exist in productive harmony." Section 101 further defines this policy in six broad goals:

1. fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. assure for all Americans safe, healthful, productive and esthetically and culturally pleasing surroundings;
3. attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
4. preserve important historic, cultural, and natural aspects of our national heritage, and maintain wherever possible, an environment which supports diversity and variety of individual choice; achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
5. enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Based on review of the material presented in the FEIS, the project record, and this Record of Decision, I believe that the selected alternative best promotes the national environmental policy as expressed in Section 101 of the NEPA and therefore is the environmentally preferred alternative in the long term. Stand density will be reduced below the levels for pine mortality threshold for approximately 20 years in pine-dominated stands and existing insect and disease outbreaks will be treated; reducing the risk to adjoining stands and habitat on the most acres. Stand conditions that allow for a return of the natural fire regime will be returned on all acres.

The selected alternative results in a temporary reduction in the quantity and quality of NSO foraging habitat designated as critical habitat (PCE 3). Habitat quality, but not function, will be reduced on 224 acres of foraging PCE 3 in the short term (68 percent of PCE 3 in the project area); and foraging habitat PCE 3 will be downgraded to dispersal habitat (PCE 4) on approximately 46 acres over the short and long term (14 percent of the project area). These short term and minor adverse effects to critical habitat, including prey and prey base habitat, also result in both short and long term habitat benefits. There will be long term habitat improvements from thinning treatments that protect and create larger and more resilient trees, including legacy pine and California black oak, and from the overall risk reduction and acceleration of late-successional habitat within the LSR. The selected alternative provides the most benefit to the LSR and critical habitat resilience and the actions proposed under the selected alternative are designed to conform to management standards and guidelines in the Forest Plan, including the Recovery Plan.

Alternative 3 is the environmentally preferred alternative in the short term.

Under Alternative 3, active western pine beetle infection centers will continue to threaten adjacent stands by providing conditions that support epidemic outbreaks. 303 fewer acres will have densities reduced below the pine mortality threshold, and late-successional habitat will not be accelerated on these acres.

Approximately 148 fewer acres of stands will have hardwood release treatment. Fewer acres will meet objectives for fuel loading and fire will be returned to the landscape on 716 fewer acres.

Also under Alternative 3, no NSO critical habitat will be treated, with the exception of the thinning and other mechanical treatments proposed in seven plantations. Treating and maintaining foraging habitat function (with some loss of quality due to reduction of habitat elements) and downgrading foraging to dispersal habitat, as I have described above for the selected alternative, will not occur. The short term advantage of Alternative 3 is lost over the long term. Alternative 3 meets the purpose and need, but not as well as the selected alternative. Under Alternative 3, there will be 472 fewer acres of natural stands and younger plantation areas designated as critical habitat with reduced stand density and no critical habitat will have low-intensity prescribed fire applied, leaving these areas in their current condition and the natural stands vulnerable to loss.

The No Action alternative will not result in any direct environmental impacts but fails to meet the purpose and need for action. It does nothing to move the project area toward the desired condition and will not produce social or economic benefits. For these reasons, Alternative 4 is not the environmentally preferable alternative.

I believe the selected alternative is the environmentally preferable alternative and best meets NEPA Section 101 goals. It provides the widest range of beneficial uses of the environment without significant degradation of the environment and balances resource use and protection. The selected alternative incorporates project design features and best management practices that will minimize negative environmental effects.

Implementation Date

If no objections are filed within the 45-day time period, approval of the proposed project or activity documented in a ROD may occur on, but not before, the fifth business day following the end of the objection filing period. If an objection is filed, the responsible official may not sign a ROD until the reviewing officer has responded in writing to all pending objections and all concerns and instructions identified by the reviewing officer in the objection response have been addressed (36 CFR §218.12).

Administrative Review or Objection Opportunities

This decision is subject to objection pursuant to 36 CFR Part 218. Objections will only be accepted from those who submitted project-specific written comments during scoping or other designated comment period. Issues raised in objections must be based on previously submitted comments unless based on new information arising after the designated comment period(s).

Objections must include (36 CFR 218.8(d)): 1) name, address and telephone; 2) signature or other verification of authorship; 3) identify a single lead objector when applicable; 4) project name, Responsible Official name and title, and name of affected National Forest(s) and/or Ranger District(s); 5) reasons for, and suggested remedies to resolve, your objections; and, 6) description of the connection between your objections and your prior comments. Incorporate documents by reference only as provided for at 36 CFR §218.8(b). In cases where no identifiable name is attached to an electronic message, a verification of identity will be required. A scanned signature is one way to provide verification.

Objections must be submitted within 45 days following the publication of the legal notice in the Redding Record Searchlight. The date of the legal notice is the exclusive means for calculating the time to file an objection. Those wishing to object should not rely upon dates or timeframes provided by any other source. It is the objector's responsibility to ensure evidence of timely receipt (36 CFR §218.9).

Objections must be submitted to the reviewing officer:

ATTN: OBJECTIONS
Randy Moore, Regional Forester
USDA Forest Service, Pacific Southwest Region
1323 Club Drive
Vallejo, CA 94592
FAX (707-562-9229)
Phone (707) 562-8737, (TTY 707-562-9240).

Objections may be submitted via mail or delivered during business hours (M-F 8:00am to 4:00pm). Electronic objections, in common (.doc, .pdf, .rtf, .txt) formats, may be submitted to: objections-pacificsouthwest-regional-office@fs.fed.us with Subject: Elk LSR Enhancement Project.

Contact Persons

For additional information concerning the Elk Late-Successional Reserve Enhancement Project and this decision, contact:

Cindy Diaz
Natural Resource Planner
Shasta-Trinity National Forest, Shasta-McCloud Management Unit
204 West Alma Street, Mt. Shasta, CA 96067
(800) 877-8339 (TDD)
(530) 926-5120 (FAX)

Electronic copies of the Draft ROD, FEIS, and resource reports are available at: <http://www.fs.usda.gov/project/?project=31312>. It can also be found at the URL for the Shasta-Trinity National Forest website location for all NEPA projects (<http://www.fs.usda.gov/projects/stnf/landmanagement/projects>) (select Elk Late-Successional Reserve Enhancement Project from the list)

[Signature and date will be added after the objection filing period is complete and any objections have been addressed and resolved].

DAVID R. MYERS
Forest Supervisor
Shasta-Trinity National Forest Supervisor's Office

DATE

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