



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Glendale Resource Area
2164 N.E. Spalding
Grants Pass, Oregon 97526

IN REPLY REFER TO:

1792 (ORM080)
DOI-BLM-M080-2010-010-EA

MAR 30 2011

Dear Interested Party:

Attached is a CD of the Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the Farout Project (DOI-BLM-M080-2010-010-EA) prepared by the Glendale Resource Area, Medford District, Bureau of Land Management.

This EA discloses the predicted environmental effects of the Proposed Action and No Action Alternative. The Proposed Action includes 745 acres of silvicultural thinning and density management on Matrix and riparian thinning in a portion of Riparian Reserves. To facilitate the transport of logs, there would be maintenance work on existing roads and temporary route construction and re-construction to be decommissioned after use. Merchantable sawlogs would be removed from yarded material, and any remaining debris at the landing sites would be piled and burned at approved locations, chipped, or removed for biomass utilization. Field assessment is evaluating site conditions to determine whether lop-and-scatter, handpile/machine pile with burning, and/or chipping would be proposed for treating activity slash remaining in units and along roadways.

The Farout Project Planning Area is located approximately 10 miles west of the community of Glendale, and 12 miles west of Interstate 5. The legal description of the PA is T.31S., R.10W., Sections 12 & 13; T.31S., R.9W. Sections 1-3, 7-29, & 33-36; T.31S., R.8W., Sections 6-8, 16-20, & 29-32; T.32S., R.9W., Section 1; and T.32S., R.8W., Sections 5 & 6.
in Douglas and Coos Counties, Willamette Meridian.

The EA and FONSI are available for review and comment March 31, 2011 in the Grants Pass Interagency Office, 2164 NE Spalding Avenue, 97526. The documents may also be accessed on the Medford District's internet site at <http://www.blm.gov/or/districts/medford/plans/index.php>. Office hours are Monday through Friday, 8:00 A.M. to 4:30 P.M., closed on holidays. Paper copies of these documents may also be obtained by contacting Michelle Calvert, (541) 471-6505.

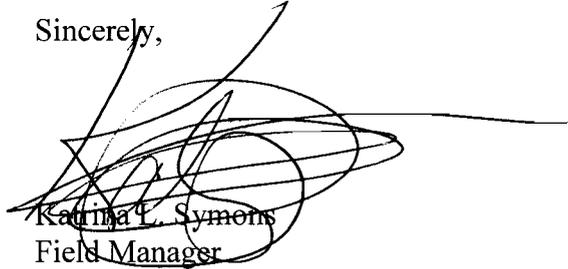
Written comments concerning the significance, as defined in 40 CFR 1508.27, of the environmental effects predicted for this action are requested to be submitted in writing to Glendale Field Manager, and received on or before May 2, 2011 at the address previously stated. Comments received will be considered in making the final decision.

Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored by the extent allowed by law. All submissions from organizations or businesses, and from individuals

identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection on their entirety.

Thank you for your interest in public land management in the Glendale Resource Area.

Sincerely,

A handwritten signature in black ink, appearing to read 'Katrina L. Symons', is written over the typed name. The signature is stylized and somewhat scribbled.

Katrina L. Symons
Field Manager
Glendale Resource Area

Enclosures

- 1- Environmental Assessment and Finding of No Significant Impact for the Farout Project (CD)
- 2- Farout Project EA Map (1pp)

FAROUT PROJECT ENVIRONMENTAL ASSESSMENT

(DOI-BLM-M080-2010-010-EA)

March 2011

United States Department of the Interior
Bureau of Land Management
Medford District
Glendale Resource Area

Responsible Official: Katrina Symons
Glendale Field Manager
2164 NE Spalding Avenue
Grants Pass, OR 97526

Abstract:

The Farout Project Environmental Assessment (EA) includes 745 acres of silvicultural prescription thinning and density management. This EA discloses the predicted environmental effects of thinning on Matrix and Riparian Reserve lands. Harvesting would be done by tractor yarding (259 acres) and cable yarding (484 acres) logging systems. Associated harvest activities include 89 miles of existing standard road maintenance, 10.5 miles of daylighting road maintenance, and 1.5 miles of temporary route construction and 0.22 miles of temporary route reconstruction (to be decommissioned after use).

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FINDING OF NO SIGNIFICANT IMPACT

Based upon review of the EA (DOI-BLM-M080-2010-010-EA) and supporting project record, I have determined that Alternative 2 (Proposed Action) is not a major federal action and would not significantly affect the quality of the human environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in context or intensity as defined in 40 CFR 1508.27. Therefore, an environmental impact statement is not needed. This finding is based on the following discussion:

Context. The Proposed Action is a site-specific action directly involving approximately 745 acres of BLM (Bureau of Land Management) administered land that by itself does not have international, national, region-wide, or state-wide importance. The Proposed Action is located within the Matrix (including a Connectivity/Diversity Block) and Riparian Reserve land use allocations. Table 1-1 lists the watersheds and sub-watersheds in the Farout Project Planning Area.

Table 1-1. Farout Project Planning Area Watersheds

Sub-watersheds (HUC 6s)	Watershed (HUC 5s)
Gold Mountain	West Fork Cow Creek (55,842 acres)
Elk Valley	
Bear Creek	
Twelve Miles Creek	Middle Fork-Coquille River

The Planning Area also includes 1992 Northern Spotted Owl Critical Habitat (CHU) OR#62 and OR#67; however, there are no proposed activities in OR#67. The Proposed Action does not occur within revised Critical Habitat (2008; [Federal Register \(73\): 47326-47522](#)), as designated by the U.S. Fish and Wildlife Service. The Planning Area contains Elk Management Area (RMP 1995) in T31S-R8W-Sections 7, 17, 19, 20, 29, 31. The Farout Project Planning Area is in the West Fork Cow Creek fifth-field watershed which is a Tier 1 Key watershed of the Medford District Resource Management Plan. Key watersheds “contribute directly to conservation of at-risk anadromous salmonids, bull trout, and resident fish species” (RMP, p.22).

The discussion of the significance criteria that follows applies to the intended actions and is within the context of local importance. Chapter 3 of the EA details the effects of the Alternatives. None of the effects identified, including direct, indirect and cumulative effects, are considered to be significant and do not exceed those effects described in the *Medford District Proposed Resource Management Plan/Environmental Impact Statement (1994 PRMP/EIS)*.

Intensity. The following discussion is organized around the Ten Significance Criteria described in 40 CFR 1508.27.

1. Impacts may be both beneficial and adverse. The predicted environmental effects of the Proposed Action, most noteworthy, include:

a) Social and economic benefits by providing a sustainable supply of timber and other forest commodities to provide jobs and contribute to community stability;

b) A short term increase in fire hazard may occur due to slash generated during harvest activities, until the slash is treated (generally over a year). This short term effect would be minimized by whole-tree yarding the majority of the slash to the landing piles followed by landing pile burning or removal of the material for biomass utilization. In areas utilizing ground based logging equipment, processing of tops in skid trails and the resulting slash being walked over may occur. After this activity, slash remaining in units would be proposed for lop-and-scatter treatment, if the slash can successfully be scattered in a discontinuous arrangement to break up jackpots of material and to not increase the fire hazard. A short term (generally over a year) increase in fire hazard would occur if the current condition of a unit in a fuel model below the flame length threshold (Timber fuel model) shifted to a fuel model that exceeds the threshold due to the presence of slash on site (Slash fuel model). In this scenario, handpile/burn or chipping would likely be recommended along roadways to reduce the increase in fire hazard because, in the event of a wildland fire, roads provide ingress and egress access and strategic containment areas for firefighting equipment and personnel. Slash created from daylighting road maintenance would be chipped, lopped-and-scattered, handpiled/burned, and/or removed for biomass so any remaining slash is arranged in a discontinuous pattern.

c) The Proposed Action would result in 55.2 acres of compacted/displaced soils that would affect productivity. Under Best Management Practices in the 1995 RMP (p. 166) up to 12% skid trail compaction is allowed to remain within a unit until final entry. Total compaction/displacement associated with new and existing temporary routes, tractor skid trails, landings and cable yarding corridors would account for an average of 8.1% per unit. Alternative 2 would result in a 3.5% soil productivity loss within the proposed harvest units. Therefore, each proposed Farout Project unit would be below 12% compaction and 5% productivity loss analyzed in the 1994 Medford District FEIS RMP.

d) Sediment from the Farout Project would not result in more than a 10% increase in stream turbidity, and would not measurably increase sediment for more than 25 feet from haul roads. Logically it can be concluded that negligible increases in sediment from activities would contribute to the overall amount of sediment entering streams from past, present, and future impacts within these sub-watersheds, but sediment deposition from this action would not be distinguishable above baseline levels or have any effect on aquatic habitat or macroinvertebrate populations. Farout Project activities, which are within the West Fork Cow Creek and Upper Middle Fork Coquille Watersheds, would be consistent with the Clean Water Act, State of Oregon water quality standards, and ACS objectives (Appendix 5).

e) See effects to ESA threatened and endangered species in criteria # 9 below.

2. The degree to which the selected alternative will affect public health or safety.

Public health and safety would not be affected. The BLM would schedule hand pile burning primarily from October to May during unstable atmospheric conditions (e.g., rain, snow, or storm events) when atmospheric mixing is occurring and pollutant concentrations would be reduced. Wet season conditions minimize the amount of smoke emissions by burning when duff and dead woody fuel have the highest moisture content, which reduces the amount of material actually burned. Timing of all prescribed burning would be dependent on weather and wind conditions to help reduce the amount of residual smoke to the local communities. If residual smoke impacts exceed limits set by the Oregon Smoke Management Plan and the Department of Environmental Quality's Air Quality and Visibility Protection Program, additional burning would be suspended until given the notice to proceed by the Oregon Department of Forestry.

All substantive comments were fully responded to in Appendix 3 of the Farout Project EA. Comments were considered in the development of the project.

Prescribed fire would be consistent with the Oregon Department of Forestry's Smoke Management Plan and the Department of Environmental Quality's Air Quality and Visibility Protection Program. The Planning Area is not located within a Class I designated airshed or non-attainment area. The impact of smoke on air quality is expected to be localized and of short duration. Particulate matter would not be of a magnitude to harm human health, affect the environment, or result in property damage. The general policy for prescribed burning on the Medford District is to notify residents prior to seasonal burning through news releases.

Dust created from vehicle traffic on gravel or natural-surfaced roads, temporary route construction, and logging operations would be localized and of short duration. As such, the Proposed Action is consistent with the provisions of the Federal Clean Air Act.

3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farm lands, wetlands, wild and scenic rivers, or ecologically critical areas. There are no prime farm lands, wetlands, wild and scenic rivers, area of critical environmental concern or wildernesses located within the Planning Area. See Criteria #8 on cultural resources.

4. The degree to which the effects on the quality of the human environment are likely to be highly controversial. The effects of the Proposed Action on the quality of the human environment are adequately understood by the interdisciplinary team to provide analysis for the decision. Substantive public comments were analyzed by the Farout Project interdisciplinary team and the BLM responded to those comments under Appendix 3 of the Farout Project EA. While comments, such as other scientific research, were mentioned by the public, the actions of the Farout Project Proposed Action are within those identified in the 1995 Medford District RMP and the predicted effects are

contained in Chapter 3 of the EA. None of the comments were considered controversial in respect to their context and intensity in determining significance.

5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks. The Proposed Action is not unique or unusual. The BLM has experience implementing similar actions in similar areas and have found effects to be reasonably predictable. The environmental effects to the human environment are fully analyzed in Chapter 3 of the EA. There are no predicted effects on the human environment which are considered to be highly uncertain or involve unique or unknown risks. Public scoping comments received on the Farout Project, did not identify unique or unknown risks.

6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration. The Proposed Action does not set a precedent for future actions that might have significant effects nor does it represent a decision in principle about future consideration. The Proposed Action would occur within the Matrix and Riparian Reserve land allocations. Chapter 1 of the Farout Project EA identifies how the Proposed Action would be consistent with the Purpose and Need and for compliance with higher level EIS documents. Chapter 3 evaluates the effects of the alternatives and the findings are that all project activities proposed would be compliant with the effects anticipated under the 1995 Medford RMP. Any future projects, not identified in the Farout Project EA would be evaluated through the NEPA (National Environmental Policy Act) process and would stand on their own as to environmental effects.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. The interdisciplinary team evaluated the Proposed Action in context of past, present and reasonably foreseeable actions. Significant cumulative effects outside those already disclosed in the 1995 ROD/RMP are not predicted. A complete disclosure of the effects of the Proposed Action is contained in Chapter 3 of the EA.

8. The degree to which the action may adversely affect districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources. The Proposed Action would not adversely affect districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places, nor would the Proposed Action cause loss or destruction of significant scientific, cultural, or historical resources. Cultural surveys were completed for the Farout Project Planning Area. One historic site was identified within the Project Area. The BLM in consultation with the State Historic Preservation Office (SHPO) evaluates cultural sites to determine if they are significant and qualify for listing in the National Register. Eligible sites and unevaluated sites warrant protection according to Section 106 of the National Historic Preservation Act (NHPA). The historic site was formally evaluated and determined not eligible. According to NHPA, the site does not warrant protection.

If cultural resources are found during project implementation, the project would be redesigned to protect the cultural resource values present, or evaluation or mitigation procedures would be implemented based on recommendations from the Resource Area Archaeologist with concurrence from the Field Manager and State Historic Preservation Office.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973. The following Farout Project proposed activities would have no effect on OC coho salmon (ESA-Threatened) and coho critical habitat (CCH): thinning, yarding, landing construction and rehabilitation, and temporary route construction and reconstruction (including associated decommissioning), road maintenance (including daylighting), hauling, and activity fuel treatments. The closest coho presence and CCH in streams of the Farout Project Area is approximately 150 ft from the closest thinning unit. The closest coho presence and CCH in streams of the Farout Project Planning Area is approximately 25 ft way from the closest haul road segment (5 total for 267 ft). With dry condition haul, well vegetated ditch lines, properly functioning cross drains, and existing filter strips, sediment would not be of a magnitude that would result in a measurable increase in the overall stream sediment deposition for more than 25 ft downstream within any of the stream channels. Project actions would follow all provisions of the Clean Water Act (40 CFR Subchapter D) and Department of Environmental Quality's (DEQ's) provisions for maintenance of water quality standards.

The Proposed Action would maintain approximately 212 acres of northern spotted owl nesting, roosting, and foraging (NRF) habitat and 528 acres of dispersal habitat. The Connectivity/Diversity Block would maintain habitat conditions in approximately 27 acres. Canopy opening from temporary route construction or daylighting road maintenance would not deter owls from moving across small openings created due to the narrow linear nature of constructed or existing road clearing (approximately 20 to 40 ft). Enlarging the current existing road openings by removing narrow strips (5-20 ft) of second growth/ dispersal-size trees (8-24 inch dbh) along chosen roads and adjacent to treatment units would have no measurable effect on owl movement across roads or foraging behavior along roads, as spotted owls are known to forage along openings, and cross large openings such as clearcuts, meadows, and highways. Canopy opening from temporary route construction would be slightly less than the ground clearing width, as the adjacent tree branches would extend into the opening above the ground clearing. The function of owl habitat in each unit would be maintained. Nesting, roosting, and foraging habitat would retain at least 60% canopy cover, and would retain ecologically valuable structure components such as down logs, snags, and large overstory trees with various deformation. Dispersal habitat would maintain at least 40% canopy closure. Decadent woody material would be retained as either large snags or down wood. No Farout Project units or new temporary route construction would occur within any 70 acre nest patches (USDA/USDI 2008).

No treatment is proposed in the Revised 2008 Spotted Owl Critical Habitat. The Proposed Action would maintain approximately 35 acres of northern spotted owl dispersal in the 1992 Critical Habitat Unit, specifically OR-62. Though the Farout Project Planning Area is in CHU OR-67, there are no proposed treatments in this portion.

10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment. The Proposed Action does not violate any known federal, state, or local law or requirement imposed for the protection of the environment. Furthermore, the Proposed Action is consistent with applicable land management plans, policies, and programs (see section 1.5 of the EA).

Chapter 1.0 Purpose and Need for the Action

1.1 Introduction

This environmental assessment (EA) will analyze the impacts of proposed forest management activities on the human environment in the Farout Project Planning Area (PA). The EA will provide the decision maker, the Glendale Field Manager, with current information to aid in the decision making process. It will also determine if there are significant impacts not already analyzed in the Environmental Impact Statement for the Medford District's Resource Management Plan and whether a supplement to that Environmental Impact Statement is needed.

Chapter 1 discloses to the reader:

- what the BLM proposes to do (Proposed Action),
- the location and description of the Planning Area,
- why the BLM is proposing these forest management activities (Purpose and Need),
- what factors the decision maker will use for choosing the alternative (Chapter 2) that will best meet the purpose and need for this proposal,
- how the public has been involved in this project,
- the method for developing alternatives,
- what the decision maker will decide upon.

The analysis utilizes field data, ground verification by resource specialists and Geographical Information System (GIS) technology to estimate acres, road miles and produce reference maps. Estimates are intended to aid the reader in understanding the proposed actions. The reader should be aware that electronic technology can produce information that appears precise but is still dependent on further field work. During implementation, unit boundaries are posted and surveyed and unforeseen features, such as water sources, are appropriately buffered. It has been the experience for past Glendale Resource Area environmental assessments that estimates of treatment acres in the EA have been generally more than the actual acres treated on the ground.

1.2 Proposed Action

The Farout Project Proposed Action includes harvesting timber on approximately 745 acres of forest land by the general silvicultural prescription of thinning. Cut trees would be removed by the use of ground based or skyline cable logging systems. Slash would be treated using one or more of the following actions: lop & scatter, pile & burn, chipping, and biomass utilization. Daylighting road maintenance is also proposed to remove vegetation along selected roads where it is inhibiting road maintenance.

The majority of the proposed harvest units are within lands governed by the Oregon and California Railroad and Coos Bay Wagon Road Grant Lands Act (O&C Act). One harvest unit (20-1, 15 acres) is within Public Domain Lands. Harvesting and associated

forest management activities are planned to start in 2011. BLM planning decisions and harvest activities would apply only to BLM-administered O&C and Public Domain lands.

1.3 Project Location

The Planning Area (PA) is located approximately 10 miles northwest of the town of Glendale. Table 1-1 lists the watersheds and sub-watersheds in the Farout Project Planning Area.

Table 1-1. Farout Project Planning Area Watersheds

Sub-watersheds (HUC 6s)	Watershed (HUC 5s)
Gold Mountain Creek	West Fork Cow Creek (55,842 acres)
Elk Valley Creek	
Bear Creek	
Twelve Miles Creek	Middle Fork-Coquille River

The BLM manages approximately 7,877 acres of the 19,811 acre PA, which is a checkerboard pattern of public and private ownerships. Approximately 808 acres of the PA is in the Roseburg BLM District and 7,069 acres is in the Medford BLM District. Approximately 11,934 acres is privately owned.

The legal description of the PA is:

T.31S., R.10W., Sections 12 & 13;
T.31S., R.9W. Sections 1-3, 7-29, & 33-36;
T.31S., R.8W., Sections 6-8, 16-20, & 29-32;
T.32S., R.9W., Sections 1; and
T.32S., R.8W., Sections 5 & 6

in Douglas and Coos Counties, Willamette Meridian.

1.4 Purpose and Need for the Proposal

The BLM has a statutory obligation under Federal Land Policy Management Act which directs that “[t]he Secretary shall manage the public lands . . . in accordance with the land use plans developed by him under section 202 of this Act when they are available . . .” The Medford District’s Record of Decision and Resource Management Plan (ROD/RMP, June 1995) guides and directs management on BLM lands.

One of the primary objectives identified in the RMP is implementing the O&C Lands Act which requires the Secretary of the Interior to manage O&C lands for permanent forest production in accord with sustained yield principles.

The purpose and need of proposed thinning treatments in the Farout Project is to produce wood volume at the present time, increase conifer growth rates for wood volume production in the future, and maintain/improve tree vigor of retained conifers and other vegetation while maintaining northern spotted owl habitat.

Any action alternative to be given serious consideration as a reasonable alternative must meet the objectives provided in the RMP for projects to be implemented in the Planning Area. The RMP and statutes specify the following objectives to be accomplished in managing the lands in the Planning Area:

1. Produce a sustainable supply of timber and other forest commodities on Matrix lands to provide jobs and contribute to community stability.
2. Control stand density, maintain stand vigor, and place or maintain stands on developmental paths so that desired stand characteristics result in the future.
3. Reduce post-activity based fuel hazards through methods such as prescribed burning, mechanical or manual manipulation of forest vegetation and debris, removal of forest vegetation and debris, and combinations of these methods.
4. Apply thinning and other silvicultural treatments to promote the development of large trees for an eventual source of large woody debris to stream channels.
5. Maintain road system infrastructure to provide adequate sight distance for motorist safety, reduce road failures by having longer durations of dry roads, potentially extend dry condition road use, and reduce road maintenance costs by reducing vegetation decomposition on road surfaces and to recover side cast rock.
6. Ensure project activities are consistent with existing right-of-way agreements.

1.5 Plan Conformance

This Proposed Action conforms to the:

- *Final Supplemental Environmental Impact Statement and Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (Northwest Forest Plan FSEIS, 1994 and ROD, 1994);
- *Final Medford District Proposed Resource Management Plan/Environmental Impact Statement and Record of Decision* (EIS, 1994 and RMP/ROD, 1995);
- *Final Supplemental Environmental Impact Statement: Management of Port-Orford-Cedar in Southwest Oregon* (FSEIS, 2004 and ROD, 2004);
- *Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (ROD, 2001); and

- *Medford District Integrated Weed Management Plan Environmental Assessment (1998)* and tiered to the *Northwest Area Noxious Weed Control Program (EIS, 1985)*

The Farout Project is consistent with the 2001 Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines, as incorporated into the Medford District Resource Management Plan.

On December 17, 2009, the U.S. District Court for the Western District of Washington issued an order in *Conservation Northwest, et al. v. Rey, et al.*, No. 08-1067 (W.D. Wash.) (Coughenour, J.), granting Plaintiffs' motion for partial summary judgment and finding a variety of NEPA violations in the BLM and USFS 2007 Record of Decision eliminating the Survey and Manage mitigation measure.

Judge Coughenour deferred issuing a remedy in his December 17, 2009 order until further proceedings, and did not enjoin the BLM from proceeding with projects. The project may proceed even if the District Court sets aside or otherwise enjoins use of the 2007 Survey and Manage Record of Decision. This is because the Farout Project meets the provisions of the last valid Record of Decision, specifically the 2001 Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (not including subsequent Annual Species Reviews). Details of the project surveys are described below:

Red Tree Vole (RTV) protocol surveys (BLM 2000a, BLM 2003) were conducted in stands greater than 80 years old in compliance with the Settlement Agreement. As a result, 9 suitable RTV habitat areas were excluded from Farout Project units, per Management Recommendations (BLM 2000b) to manage for active red vole populations and to provide for persistence of the species (USDA/USDI 2001, p.3, 4, & 23). There are no other 2001 Survey and Manage ROD wildlife species affected by the Farout Project.

Vascular and nonvascular plant surveys were conducted for 2001 Survey and Manage Record of Decision species. Surveys revealed the following new sites; (1) *Illiamna latibractiata* (Sensitive), (1) *Leptogium teretiusculum* (S&M E), and (2) incidental fungi sightings of *Phaeocollybia attenuata* (S&M D). However, this species would not be affected by the Proposed Action as these sites would receive a protection buffer (Section 2.3.2.1).

In May 2008, the USFWS (US Fish and Wildlife Service) finalized the *Recovery Plan for the Northern Spotted Owl*, which contains 34 Recovery Actions. Recovery Actions are recommendations to guide activities needed to accomplish the recovery objectives and ultimately lead to delisting of the species. Specifically, Recovery Action 32 (RA 32) in the Recovery Plan recommends maintaining "substantially all of the older and more structurally complex multilayered conifer forests on Federal lands outside of MOCAs

[Managed Owl Conservation Areas]¹ ” (USFWS 2008b, 34). The intent of RA 32 is to not further exacerbate the competitive interactions between spotted owls and barred owls. The Farout Project defers proposed treatment in RA 32 stands identified by interagency survey guidance (USDA/USDI 2010) and is consistent with consultation completed with the U.S. Fish and Wildlife Service (USFWS), (FY 10-11 NLAA Biological Assessment) to the Fish and Wildlife Service and received a Letter of Concurrence (FY 10-11 Management Activities, TAILS #: 13420-2010-I-0025).

The *West Fork Cow Creek Watershed Analysis* and *Upper Middle Fork Coquille Watershed Analysis* are incorporated by reference. Watershed analysis is an analytical process and not a decision-making process as provided in the Record of Decision for the Northwest Forest Plan (p. B-20).

The Aquatic Conservation Strategy (ACS) consistency analysis (see Appendix 5) evaluated the Proposed Action and found the Proposed Action would not retard or prevent the attainment of the nine objectives and the four components of the ACS. Therefore, this project is consistent with the ACS of the NWFP Record of Decision (1994).

1.6 Permits and Approvals Required

The following permits and approvals are required prior to project implementation:

- license agreements and/or other authorization with adjacent landowners to have a third party haul timber and use of landings;
- in compliance with the Oregon Smoke Management Plan, prescribed burning activities on the Medford District require pre-burn registration of all prescribed burn locations with the Oregon State Forester.

1.7 Public Scoping

The Glendale Resource Area also accepts public comment of proposed forest management activities through the quarterly BLM Medford Messenger publication. A brief description of proposed projects, such as the Farout Project, a legal location and general vicinity map are provided along with a comment sheet for public responses. The Farout Project was included in these quarterly publications beginning in the spring of 2010.

Public scoping included a scoping report notice mailed to a standard mailing list of individuals and organizations expressing interest in Glendale Resource Area projects and all property owners within a ¼ mile of the Farout Project Planning Area boundary.

¹ In the western Physiographic Provinces, MOCAs are recommended in the U.S. Fish and Wildlife Service’s 2008 Final Northern Spotted Owl Recovery Plan to be managed for providing recovery habitat for the spotted owl.

Public comment was requested from September 15, 2010 to October 15, 2010. The BLM received two comment letters during this portion of scoping.

All substantive comments were responded to in Appendix 3 of the Farout Project EA. Comments were considered in the development of the project.

Conflicts identified during scoping with the Proposed Action (September 2010) were considered to determine if an alternative action would be developed. Appendix 1 summarizes this alternative consideration and explains why some alternatives were considered but not analyzed in detail and eliminated from further study.

1.8 Decisions to be Made

The Glendale Field Manager is the official responsible for deciding whether or not to prepare an Environmental Impact Statement (EIS), and whether to approve the treatments as proposed, not at all, or to some other extent.

1.9 Alternative Decision Factors

In choosing the alternative that best meets the purpose and need, the Glendale Field Manager would evaluate alternatives on:

- silvicultural systems that are sustainable, economically practical, and capable of maintaining the long-term health and productivity of the forest ecosystem;
- providing timber resources to the local economy and revenue to the government from the sale of those resources;
- providing for the establishment and growth of conifer species while retaining structural and habitat components, such as large trees, snags, and coarse woody debris;
- managing activity based fuel hazards;
- maintaining road system infrastructure for safety, to reduce future road maintenance needs and costs, and reduce road failures;
- comply with existing right-of-way agreements.

Chapter 2.0 Alternative Ways of Accomplishing the Objectives

2.1 Introduction

This chapter presents the alternative ways of meeting the project objectives identified in Chapter 1, by describing and comparing Alternative 1 (No Action Alternative) and Alternative 2 (Proposed Action) as specified in 40 CFR (Code of Federal Regulations) § 1502.14. Descriptions summarize potential environmental consequences and focus on potential actions and outputs. Best Management Practices (BMPs), Project Design Features (PDFs), and Standard Operating Practices (SOP) are included to ensure project compliance with the Federal Clean Water Act and higher-level National Environmental Policy Act (NEPA) documents, laws and BLM guidelines. For this document BMPs and PDFs are incorporated into the Proposed Action (see Section 2.3.2). BMPs are specifically required by the Federal Clean Water Act to reduce nonpoint source pollution. The BMPs are methods, measures, or practices selected from Appendix D of the 1995 ROD/ RMP to ensure that water quality will be maintained. Project Design Features (PDFs) are specific measures included in the site specific design of the Proposed Action to eliminate or minimize adverse impacts on the human environment. These PDFs were developed by the Farout Project interdisciplinary team with guidance of the 1995 ROD/RMP and resource protection measures specific to the Planning Area. SOPs are those standard provisions applied to all timber sales and are in Appendix 9 (Standard Operating Practices).

2.2 Proposed Projects for the Farout Project

2.2.1 Description of Forest Management Treatments

Commercial Thinning. *Thinning for this project is the removal of surplus trees to encourage/maintain the growth of the remaining trees.*

Thinning is a silvicultural practice generally applied to control stand density, maintain stand vigor, and place or maintain stands on developmental paths so that desired stand characteristics result in the future. This treatment would promote improved stand health, as well as increased vigor and crown development on retained trees. Mortality of remaining conifers would decrease. Over time, crowns of remaining trees would become fuller and overall stand vigor and growth would improve. Growth and yield are important considerations in applying commercial thinning treatments. Production of some wood volume at the present time and an increase/maintenance of growth rates for wood volume production in the future are primary objectives. Commercial thinning in the Farout Project would retain primary constituent elements for northern spotted owl habitat so that its function would be maintained.

Primary constituent element features that support nesting and roosting typically include a moderate to high canopy closure (60 to 90 percent); a multi-layered, multi-species canopy with large overstory trees (with diameter at breast height [dbh] of greater than 30 inches); a high incidence of large trees with various deformities (large cavities, broken tops, mistletoe infections, and other evidence of decadence); large snags; large accumulations of fallen trees and other woody debris on the ground; and sufficient open space below the canopy for spotted owls to fly (Thomas *et al.* 1990; Forsman *et al.* 1984). Foraging habitat in the Project Area generally has attributes similar to those of nesting and roosting habitat, but with less large diameter trees and decadent components, and typically would have trees 11-21 inches dbh but such habitat may not always support successfully nesting pairs.

No thinning is proposed in Recovery Action 32 (RA 32) habitat which is “substantially all of the older and more structurally complex multilayered conifer forests on Federal lands outside of MOCAs [Managed Owl Conservation Areas]” (U.S. Fish and Wildlife Service 2008b, 34).

Non-commercial Density Management (NCDM). The objective of non-commercial density management treatments would be the same as for commercial treatments, that is to reduce stand densities. No wood volume would be produced at this time as a result of this treatment. Treatment would be limited to conifers and other vegetation 8 inches dbh and less.

Canopy Visual Representations – Current conditions and Post-treatment



The photograph at left depicts a representative existing canopy cover for stands containing spotted owl nesting, roosting, and foraging habitat, in this project area. The photograph at right depicts a representative post treatment at approximately 60% canopy cover to maintain nesting, roosting, and foraging spotted owl habitat.

Canopy Visual Representations – Current conditions and Post-treatment



The photograph at left depicts a representative existing canopy cover for stands containing spotted owl dispersal habitat, in this Project Area. The photograph at right depicts a representative post treatment at approximately 40% canopy cover to maintain dispersal spotted owl habitat.

Riparian Thinning. *The objective of riparian thinning treatments is to accelerate the development of late-successional stand conditions, such as older forest stand characteristics, increasing conifer growth rates and larger remnant conifers and hardwoods.*

Many riparian areas are currently dominated by smaller diameter Douglas-fir and some hardwoods. Most are lacking large wood debris, downed logs, and large tree structure. Like treatment in the uplands, treatment of these areas would reduce competition on the retained trees for light, nutrients, water and growing space. These trees would develop larger canopies, display better vigor and put on diameter growth faster than if left untreated. Production of wood volume would be a by-product of this treatment, not a primary objective.

Riparian thinning would benefit perennial and intermittent fish and other aquatic species habitat. Riparian Reserves proposed for treatment would be selected based on field stream survey information and silvicultural review. Stands with conditions such as high conifer density and few canopy layers, stands with low species diversity and stands of low conifer and hardwood vigor would be high priorities for treatment. Treatments would occur in accordance with the following prescriptions to ensure protection of streams.

For all units, an Ecological Protection Zone (EPZ) ranging from 75 to 205 ft from the stream bankfull width (by slope distance) would be applied along streams to protect stream channel structure and water quality (Best Management Practice, RMP p.154). For the Farout Project the EPZ is a no treatment buffer. The specific EPZ distance per stream

Activity fuel treatments. Trees to be removed for harvest would be whole-tree yarded or yarded with tops attached to minimize activity slash remaining within the harvest units. It is anticipated that the majority of the activity slash would be extracted from each thinning unit by this process and piled at the landing sites. Merchantable sawlogs would be removed from yarded material, and any remaining debris at the landing sites would be piled and burned at approved locations, chipped, or removed for biomass utilization. Field assessment is evaluating site conditions to determine whether lop-and-scatter, handpile/machine pile with burning, and/or chipping would be proposed for treating activity slash remaining in units and along roadways.

Temporary Route Construction. Short-term overland roads, primitive roads or trails authorized or acquired for the development, construction or staging of a project or event that has a finite lifespan. Temporary routes are not intended to be part of the permanent or designated transportation network system. Temporary routes would be decommissioned after harvesting and activity fuels are treated for this project.

Temporary Route Reconstruction. Restores an existing road to its original or modified condition. Reconstructed routes would be decommissioned after harvesting and activity fuels are treated for this project.

Road Maintenance. Activities on an existing road to keep a road at its original design standard. Typical maintenance would include, but is not limited to: 1/ blading and shaping; 2/ cleaning of ditches, catch basins and culverts; 3/ tree removal and brush cutting on the 4 ft cut and fill slopes of the roadway; 4/ pot hole repair; 5/ surface replacement; 6/ culvert replacement; 7/ slide removal; and 8/ daylighting.

2.3 Description of the Alternatives

2.3.1 Alternative 1 (No Action)

The No Action Alternative provides a baseline for the comparison of the alternatives and describes the existing condition and the continuing trends within the Planning Area. Under the RMP, the majority of harvest and silvicultural activities are scheduled to occur within the Matrix allocation. Selection of this alternative would not meet the purpose and need of the project (described in Chapter 1) of harvesting timber and implementing the Medford RMP at this time. Consideration of this alternative provides the answer to the question of what it would mean for the objectives not to be achieved. Selection of this alternative would not constitute a decision to reallocate these lands to non-commodity uses.

Future harvesting in this area would not be precluded and could be analyzed under a subsequent environmental analysis. Road maintenance would be dependent on funding and reciprocal right-of-way agreements.

2.3.2 Alternative 2 (Proposed Action)

The Proposed Action would offer a viable timber sale for permanent forest production while maintain northern spotted owl nesting, roosting, foraging, and dispersal habitat. Structurally complex stands on Matrix lands, as defined by Recovery Action 32 from the 2008 Final Northern Spotted Owl Recovery Plan, are deferred from proposed treatment under the Farout Project. Red Tree Vole (RTV) sites (2001 Survey and Manage ROD) found through protocol surveys (BLM 2000a, BLM 2003) are also excluded from the Farout Project units, per Management Recommendations (BLM 2000b).

2.3.2.1 Forest Management

The Proposed Action is to commercially thin approximately 735 acres within 38 units while maintaining approximately 40% canopy cover in spotted owl dispersal habitat to 60% canopy cover in spotted owl nesting, roosting, and foraging habitat. In addition to commercial thinning, approximately 10 acres is proposed for a non-commercial density management treatment. See table 2-3 for further details per proposed unit.

Northern Spotted Owl (Threatened Species)

Project Design Criteria included in the U.S. Fish and Wildlife Service's written concurrence with the Medford District of the Bureau of Land Management's (District) determination that the District's proposed forest management activities for fiscal year 2010-2011 may affect, but are not likely to adversely affect, the threatened northern spotted owl (*Strix occidentalis caurina*) (spotted owl) and its designated critical habitat; would be applied to the Farout Project (see below).

- Any of the following measures may be waived in a particular year if nesting or reproductive success surveys conducted according to the U.S. Fish and Wildlife Service (USFWS) - endorsed survey guidelines reveal that spotted owls are non-nesting or that no young are present that year. Waivers are valid only until March 1 of the following year. Previously known well established sites/activity centers are assumed occupied unless protocol surveys indicate otherwise.
- Work activities (such as tree felling, yarding, temporary route construction and reconstruction (including associated decommissioning), daylighting road maintenance, hauling on roads not generally used by the public, and prescribed fire) would not be permitted within specified distances (see Table 2-1 below), of any nest site or activity center of known pairs and resident singles between March 1 and June 30 (or until two weeks after the fledging period) – unless protocol surveys have determined the activity center to be not occupied, non-nesting, or failed in their nesting attempt. March 1 – June 30 is considered the critical early nesting period; the restricted season may be extended during the year of harvest, based on site-specific knowledge (such as a late or recycle nesting attempt). The boundary of the prescribed area may be modified by the action agency biologist using topographic features or other site-specific information. The restricted area is calculated as a radius from the assumed nest site (point).

Table 2-1. Harassment distances from various activities for spotted owls (BLM 2009)

Activity	Buffer Distance around Owl Sites
Heavy Equipment (including non-blasting quarry operations)	105 feet
Chain saws	195 feet
Prescribed fire	0.25 miles

Marbled Murrelet (Threatened Species)

- Work activities which produce noises above ambient levels would not occur within specified distances (see Table 2-2) of any occupied stand or unsurveyed suitable habitat from April 1 through August 5. Work activities would be confined to the time period between 2 hours after sunrise to 2 hours before sunset from August 6 through September 15.
- Burning would not occur within 0.25 miles of known occupied marbled murrelet sites or unsurveyed marbled murrelet habitat from April 1 through August 6 unless smoke would not drift into the occupied site or unsurveyed suitable habitat.
- Minimize noise disturbance resulting from projects in occupied stands or unsurveyed suitable habitat and within 120 yards of the edge of these stands from April 1 through August 5.

Table 2-2. Harassment distances from various activities for Marbled Murrelet (BLM 2009a)

Activity	Buffer Distance around Murrelet Sites
Heavy equipment	120 yards
Chainsaws (hazard trees, tree harvest, etc.)	120 yards
Prescribed Fire (unless smoke will not drift into the occupied site)	0.25 miles

Botanical Species (Threatened, Endangered, Survey and Manage, and Bureau Sensitive)

- Survey and Manage, Bureau Sensitive, and Federally Threatened/Endangered plant sites (vascular and nonvascular) in treatment areas would receive a 0-100 ft diameter no treatment buffer depending on the treatment, site conditions, and species.

2.3.2.2 Timber Yarding

Harvesting for the Proposed Action would occur by skyline cable and ground based logging systems. Ground based yarding would generally be limited to slopes less than 35% (Best Management Practice, RMP p.166). See Table 2-3 for individual unit harvesting methods proposed.

Units 7-1, 7-2, 27-3, 27-1, and daylighting road maintenance in T31S-R8W-Section 7 and T31S-R7W-Section 27 would have the following restrictions due to high ground water levels:

- limit logging operations to May 15 thru Oct 15 of the same calendar year for cable and ground based units.
- use existing skid trails, where possible: no mechanized equipment off designated skid trails or
- rip and waterbar new operational skid trails determined to be blocking natural drainage

Units 11-4, 23-1, 23-5, 25-3, 25-5 and daylighting road maintenance in T31S-R9W-Section 11 and 15 would have the following restrictions to maintain soil productivity due to areas with fragile suitable restricted gradient classification:

- yard with full suspension (year-round) or one-end suspension during the dry season (generally May through October)
- hand waterbar or spread slash over cable yarding corridors immediately following use on slopes in excess of 65% to disperse water runoff and minimize erosion

Ground based logging would not occur when soil moisture at a depth of 4-6 inches is wet enough to maintain form when compressed, or when soil moisture at the surface would readily displace, causing ribbons and ruts along equipment tracks. These conditions are generally found when soil moisture at a depth of 4-10 inches is between 15-25% depending on soil type (Best Management Practice, RMP p.166).

Whole tree yarding with tops attached to the last log would be permitted as long as contractor can operate without causing unacceptable damage from bark slippage, girdling, broken tops, or damage to live crowns. If it is determined by the Authorized Officer that unacceptable amounts of damage is occurring, trees would be required to be bucked and limbed as directed by the Authorized Officer. Delivered log length not to exceed 41 feet.

Off designated skid trails, mechanized harvest equipment would operate on ground less than 35% slope, have an arm capable of reaching at least 20 ft, and minimize turning. If equipment exceeds 6 pounds/square-inch (PSI) ground pressure, the harvest equipment must walk on existing or created slash. This slash mat would be a minimum of 8 inches in depth prior to the equipment moving onto the slash mat. Additional slash would be required on the slash mat, if more than an out-and-back trip is done by the equipment.

Prior to winter rains, hydrologically connected cable yarding corridors would be waterbarred to protect water quality (Best Management Practice, RMP p.167). Landings used during dry conditions within the wet season (generally October through May) that have the potential to release sedimentation into a stream or wet area via ditchlines or other means, would have silt fencing or other sediment control measures in place during periods of non-use if they are hydrologically connected³ to streams (Best Management Practice, RMP p.166).

All non-hazardous snags would be retained in all harvest units. If it is necessary to fall snags for safety reasons, they would remain on site as down wood. All existing naturally occurring dead and down woody debris would remain on site.

Table 2-3. Farout Project Forest Management Units

Township-Range-Section	Unit #	Acres	Proposed Treatment	Upland Canopy Canopy Cover retention	Riparian Reserve Canopy Cover retention (outside EPZ)	Existing Northern Spotted Owl Habitat	Harvest System
31-9-11	11-2	50	CT/RT	60%	60%	NRF	cable (39 acres) & tractor (11 acres)
	11-3	18	CT/RT	40%	50%	Dispersal	cable (10 acres) & tractor (8 acres)
	11-4	37	CT/RT	40%	50%	Dispersal	cable (18 acres) & tractor (19 acres)
	11-5	2	CT/RT	60%	60%	NRF	cable

³ Hydrologically Connected = where drainage features are connected to stream channels via surface water flow routes, including headwater springs. This determination is made with project specific field verified stream surveys to identify where sediment has the potential to be carried to streams; where precipitation and subsurface flows on impermeable road surfaces may be intercepted, concentrated, and carried to stream channels; and where ditchlines are increasing the stream network (for more information see the Farout Project Record stream surveys and Hydrologically-Connected Roads: An Indicator of the Influence of Roads on Chronic Sedimentation, Surface Water Hydrology, and Exposure to Toxic Chemicals by M. Furniss et al. (USDI, Forest Service Stream Systems Technology Center website at http://stream.fs.fed.us/news/streamnt/jul00/jul00_2.htm).

Township-Range-Section	Unit #	Acres	Proposed Treatment	Upland Canopy Canopy Cover retention	Riparian Reserve Canopy Cover retention (outside EPZ)	Existing Northern Spotted Owl Habitat	Harvest System
31-9-13	13-1	27	CT/RT	40%	50%	Dispersal	tractor
	13-2	7	CT/RT	40%	50%	Dispersal	tractor
	13-2B	10	NCDM	40%	50%	Dispersal	---
	13-3	9	CT/RT	40%	50%	Dispersal	tractor
31-9-15	15-1	46	CT/RT	60%/40%	60%/50%	NRF/Dispersal	cable (33 acres) & tractor (13 acres)
	15-2	31	CT/RT	60%/40%	60%/50%	NRF/Dispersal	cable (27 acres) & tractor (4 acres)
31-9-21	21-1	55	CT/RT	60%	60%	NRF	cable (54 acres) & tractor (1 acres)
	21-2	1	CT/RT	40%	No Riparian in unit	Non-habitat	cable
	21-3	46	CT/RT	40%	50%	Dispersal	cable (36 acres) & tractor (10 acres)
31-9-23	23-1	15	CT/RT	40%	50%	Dispersal	cable (4 acres) & tractor (10 acres)
	23-2	17	CT/RT	40%	50%	Dispersal	cable
	23-3	5	CT/RT	60%	60%	NRF	cable
	23-4	16	CT/RT	40%	50%	Dispersal	cable
	23-5	24	CT/RT	60%/40%	60%/50%	NRF/Dispersal	cable
31-9-25	25-1	8	CT/RT	40%	50%	Dispersal	tractor
	25-3	12	CT/RT	40%	50%	Dispersal	cable
	25-4	10	CT/RT	40%	50%	Dispersal	cable
	25-5	11	CT/RT	40%	50%	Dispersal	cable

Township-Range-Section	Unit #	Acres	Proposed Treatment	Upland Canopy Canopy Cover retention	Riparian Reserve Canopy Cover retention (outside EPZ)	Existing Northern Spotted Owl Habitat	Harvest System
31-9-27	27-1	11	CT/RT	60%	60%	NRF	tractor
	27-2	59	CT/RT	40%	50%	Dispersal	cable
	27-3	23	CT/RT	60%	60%	NRF	tractor
	27-4	12	CT/RT	40%	50%	Dispersal	tractor
31-9-35	35-1	15	CT/RT	40%	50%	Dispersal	cable (12 acres) & tractor (3 acres)
31-8-7	7-1	21	CT/RT	40%	50%	Dispersal	Tractor
	7-2	14	CT/RT	40%	50%	Dispersal	cable
31-8-19	19-3A	26	CT/RT	40%	50%	Dispersal	cable (23 acres) & tractor (3 acres)
	19-4	7	CT/RT	40%	50%	Dispersal	tractor
31-8-20	20-1	15	CT/RT	60%	60%	NRF	cable
31-8-29	29-1	14	CT/RT	40%	50%	Dispersal	cable (13 acres) & tractor (1 acres)
	29-2	12	CT/RT	40%	50%	Dispersal	cable (11 acres) & tractor (1 acres)
31-8-30	30-1	3	CT/RT	60%	60%	NRF	cable (2 acres) & tractor (1 acres)

Township-Range-Section	Unit #	Acres	Proposed Treatment	Upland Canopy Canopy Cover retention	Riparian Reserve Canopy Cover retention (outside EPZ)	Existing Northern Spotted Owl Habitat	Harvest System
31-8-31	31-1	22	CT/RT	60%	60%	NRF	cable (6 acres) & tractor (16 acres)
	31-3	3	CT/RT	40%	50%	Dispersal	cable
	31-4	5	CT/RT	40%	50%	Dispersal	tractor
	31-5	26	CT/RT	40%	50%	Dispersal	cable (8 acres) & tractor (18 acres)

Legend

CT = Commercial Thin

RT = Riparian Thin

NCDM = Non-Commercial Density Management (includes Riparian Reserve treatment)

NRF = nesting, roosting, & foraging habitat

2.3.2.3 Road Work

Proposed road work associated with timber harvesting for the Proposed Action includes 1.5 miles of temporary route construction and 0.22 miles of temporary route reconstruction to access proposed thinning units consistent with existing right-of-way agreements. All existing and roads used for hauling timber would be maintained.

Temporary route construction and reconstruction (including associated decommissioning) would not occur when soil moisture, at a depth of 4-6 inches, is wet enough to maintain form when compressed; or when soil moisture at the surface would readily displace, causing ribbons and ruts along equipment tracks. These conditions are generally found when soil moisture at a depth of 4-10 inches is between 15-25% depending on soil type (**Best Management Practice**, RMP p. 166).

Skid trails in Riparian Reserves, temporary spur routes, and reconstructed routes would be decommissioned after use, and landings built would be rehabilitated. This would involve discontinuous sub-soiling (Davis, pp. 138 & 139) to depth of 18 inches with winged rippers, mulching, water-barring and barricading, and/or native grass/forbs mixtures.

Landing piles would be placed outside of Ecological Protection Zones (except for unit 13-1) and in locations not hydrologically connected to the ditchlines of roads. For unit

13-1, sediment barriers would be installed as necessary within the EPZ to prevent any measurable sediment from entering an adjacent stream during use.

Where hydrologically connected, log hauling on natural surface and rocked roads would not occur under wet conditions to protect water quality. Surface displacement such as rutting or ribbons, continuous mud splash or tire slide, fines being pumped through road surfacing from the subgrade, road drainage causing a visible increase in stream turbidities, or any condition that would result in being chronically routed into tire tracks or away from designed road drainage during precipitation events (**Best Management Practice**, RMP p. 166).

Table 2-4. Summary of Road Work: Temporary Route Construction and Reconstruction (including associated Decommissioning), Standard Road Maintenance, and Haul

Road Work Activities	Road Number	Miles	Control	Surfacing
temporary route construction (Decommission after use: Block, rip, waterbar, and mulch after use)	into Unit 15-1	0.3	BLM	NAT
	into Unit 11-2	0.4	BLM	NAT
	into Unit 21-1	0.5	BLM	NAT
	into Unit 29-1	0.1	BLM	NAT
	into Unit 29-2	0.2	BLM	NAT
	into Unit 31-5	0.1	BLM	NAT
temporary route reconstruction (existing road prism) (Decommission after use: Block, rip, waterbar, and mulch after use)	into Unit 15-1	0.1	BLM	NAT
	into Unit 29-1	0.1	BLM	NAT
maintenance & haul	30-6-32.0 A	5.2	BLM	BST
	30-6-32.0 B	8	BLM	BST
	30-6-32.0 C	5.8	BLM	BST
	31-8-29.0 A	0.5	BLM	NAT
	31-8-29.2	1.1	Roseburg	NAT
	31-8-30.0A1	0.2	BLM	GRR
	31-8-30.0A2	2.0	BLM	GRR
	31-8-30.0B1	0.1	Plum Creek	GRR

Road Work Activities	Road Number	Miles	Control	Surfacing
maintenance & haul (cont.)	31-8-30.3	0.3	BLM	ASC
	31-8-31.0 A	3.8	BLM	ASC
	31-8-31.0 B	0.4	BLM	ASC
	31-8-31.0 C	1.6	Plum Creek	ASC
	31-8-31.0 D	1.3	BLM	ASC
	31-8-31.0 E	0.5	Plum Creek	ASC
	31-8-31.0 F	1	Plum Creek	ASC
	31-8-31.0 G	1.3	BLM	ASC
	31-8-31.1 A1	0.04	BLM	ASC
	31-8-31.1 A2	0.9	BLM	ASC
	31-8-31.2 A	1.9	BLM	ASC
	31-8-31.3	0.8	BLM	PRR
	31-8-31.4	0.1	BLM	NAT
	31-8-31.5	0.2	BLM	PRR
	31-8-31.6	0.4	BLM	ASC
	31-8-31.7	0.6	BLM	ASC
	31-9-10.0 A	1.00	BLM	NAT
	31-9-10.0 B	0.6	BLM	NAT
	31-9-11.0 A	1.0	BLM	ASC
	31-9-11.0 B	0.4	BLM	PRR
	31-9-11.0 C	1.9	Roseburg Resources	PRR
	31-9-11.1	0.3	BLM	NAT
	31-9-11.4	0.5	BLM	NAT
	31-9-11.5	0.1	BLM	NAT
	31-9-12.0	2.7	BLM	ASC
	31-9-13.1	0.1	Plum Creek	PRR
	31-9-15.0	0.3	Plum Creek	PRR

Road Work Activities	Road Number	Miles	Control	Surfacing
maintenance & haul (cont.)	31-9-21.0 A	0.7	Plum Creek	PRR
	31-9-21.0 B	0.9	BLM	PRR
	31-9-21.0 C	0.4	BLM	NAT
	31-9-22.0 A1	0.9	Plum Creek	PRR
	31-9-22.0 A2	0.4	Fruit Growers	PRR
	31-9-22.0 B	0.4	Fruit Growers	PRR
	31-9-22.0 C	0.7	Plum Creek	PRR
	31-9-23.0	1.1	BLM	PRR
	31-9-23.1	0.2	BLM	ASC
	31-9-23.2	0.3	BLM	PRR
	31-9-23.3	0.4	BLM	PRR
	31-9-25.1 A	1.1	BLM	PRR
	31-9-25.3 A	0.3	BLM	GRR
	31-9-25.3 B	1.3	BLM	GRR
	31-9-25.5	0.4	BLM	PRR
	31-9-26.0 A	0.6	Plum Creek	PRR
	31-9-26.0 B	0.8	BLM	GRR
	31-9-27.0 A	1.3	BLM	ASC
	31-9-27.0 B	0.2	Plum Creek	ASC
	31-9-27.0 D	1.6	Plum Creek	PRR
	31-9-27.6	0.3	Plum Creek	PRR
	31-9-35.3	0.2	Fruit Growers	NAT
	32-8-1.1 A	2.4	BLM	BST
	32-8-1.1 B1	1.4	BLM	BST
	32-8-1.1 B2	3.5	BLM	BST
	32-8-1.1 C	2.9	BLM	BST

Road Work Activities	Road Number	Miles	Control	Surfacing
maintenance & haul (cont.)	32-8-1.1 D1	2.7	BLM	ASC
	32-8-4.0 A	4.7	BLM	ASC
	Existing spur road into Unit 11-2a	0.3	BLM	NAT
	Existing spur road into Unit 21-1a	0.3	BLM	NAT

Legend

ASC = Aggregate Surface Course ABC = Aggregate Base Course
 NAT = Natural or Native PRR = Pit-Run Rock
 BST = Bituminous Surface Type

All haul routes for the Farout Project would be limited to dry condition haul. Meaning, hauling would not occur during wet road conditions, which are considered to result in continuous mud splash or tire slide, fines being pumped through road surfacing from the subgrade, road drainage causing a visible increase in stream turbidities, surface rutting, or any condition that would result in being chronically routed into tire tracks or away from designed road drainage during precipitation events. BST roads could be used for all seasons as the surface of these roads are sealed, however; access to these roads requires travel on roads limited to dry condition haul.

Daylighting Road Maintenance

A subset of road maintenance work, referred to as “daylighting” would occur within the Farout Project Area where vegetation (including trees) are inhibiting road maintenance. The roads identified for this treatment were constructed in the 1950s to the 1970s and are generally rocked or surfaced. The original road right-of-way clearing widths were a minimum of 60-100 ft to allow for roadway construction.

Outside Riparian Reserves, daylighting road maintenance could remove vegetation up to 5-20 ft from the center line of the ditch up the cutbank and up to 5-20 ft from the road shoulder, down the fill slope (see Figure 2-1 for an illustration). Within Riparian Reserves, overstory vegetation removal would be less than 10 ft from the center line of the ditch up the cutbank and 10 ft from the road shoulder, down the fill slope. Understory removal in the Riparian Reserves would be limited to standard road maintenance (4 ft of brushing off both sides of the road). All proposed daylighting road maintenance would be designed to not exceed Oregon water quality standards. This proposal has been submitted to Oregon State University as consideration for a research project.

Removing vegetation would improve the following conditions:

- Motorist safety. Trees and other brush species are currently shading roadways or inhibiting adequate sight distance around corners. The Medford District RMP identified the need to remove trees along rights-of-way if they are a hazard to public safety (RMP, p.34).

- Daylight and create air flow. Vegetative removal would allow the roadbed to dry faster and be drier for longer periods thereby reducing road failures and extending dry weather road use on rock roads.
- Reduce future road maintenance cost by allowing mechanical maintenance of road side vegetation, such as reducing the amount of leaves, needles, and other vegetative material that drop and decompose onto the road surface.
- Create a fuel break to decrease a potential fire's spread and intensity
- Recover side cast rock that has been overgrown with vegetation.

The proposed maintenance activities would mechanically cut all vegetation greater than 12 inches in height. Intact roots and re-sprouting vegetation would continue to stabilize slopes and retard erosion. This would consist of mechanically falling all trees within the treatment area and removing merchantable logs. Slash created by this operation could be treated by a combination of chipping and broadcasting into the residual stand; utilized at a biomass facility; or lopped and scattered; or piled and burned within units.

The hydrologist for this project made on-site evaluations to determine the importance of each individual tree in protecting water quality. Subsequent to this assessment, a determination was made by the hydrologist as to which trees could be safely removed without having any measurable direct, indirect, or cumulative impact to water quality.

All remaining brush and stumps that interfere with road grading operations would be flush cut or ground down. All mechanized equipment for daylighting road maintenance would be limited to operating on the road surface.

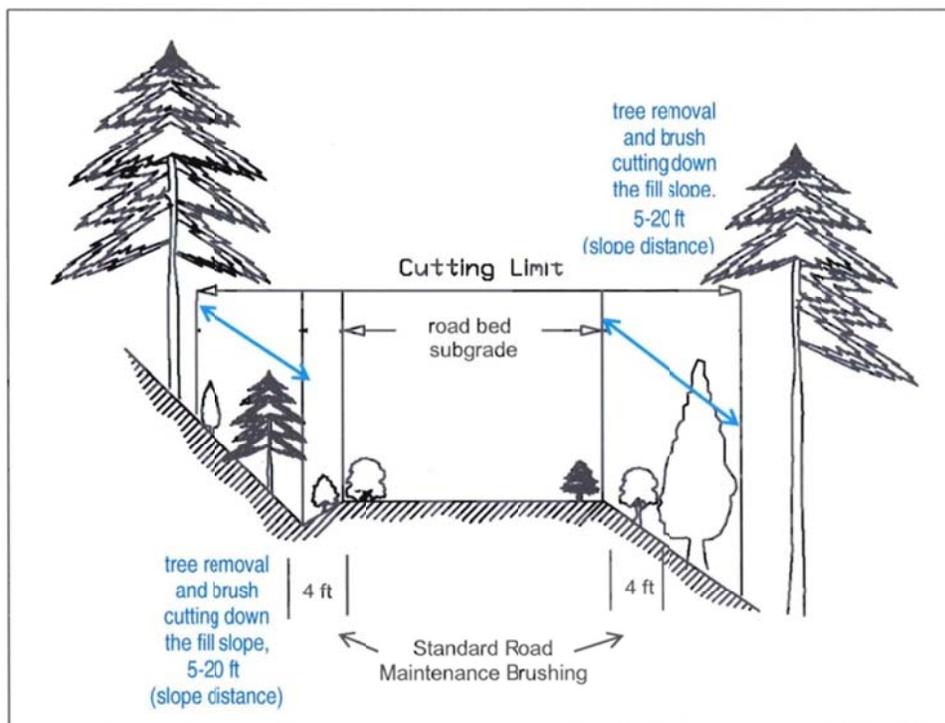


Figure 2-1. Daylighting Road Maintenance

Table 2-5. Daylighting Road Maintenance Proposals

BLM Road Number	Mileage
31-9-13.1	0.14
31-9-12	2.30
31-9-11	1.37
31-9-11.1	0.31
31-9-11.4	0.48
31-9-11.5	0.11
31-9-15	0.31
31-9-27	1.00
31-9-27.6	0.23
31-9-10	0.56
31-9-21	0.34
31-8-29	0.52
31-8-30.3	0.26
31-8-31	1.38
31-8-31.5	0.16
31-8-31.6	0.36
31-8-31.7	0.64
Total	10.5

2.3.2.4 Activity Fuels Treatments

Trees to be removed for harvest would be whole-tree yarded or yarded with tops attached to minimize activity slash remaining within the harvest units. It is anticipated the majority of the activity slash would be extracted from each thinning unit by this process and piled at the landing sites. In areas utilizing ground based logging equipment, processing of tops in skid trails and the resulting slash being driven over may occur. Merchantable sawlogs would be removed from yarded material, and any remaining debris at the landing sites would be machine and/or hand piled and burned at approved locations, chipped, or removed for biomass utilization.

Activity slash remaining in units would be lopped-and-scattered. Activity slash along roadways may be handpile/burned, chipped, or lopped and scattered based on a post-logging assessment of fuel loading.

The purpose of a lop-and-scatter treatment is to break up jackpots of material so that the slash does not increase the fire hazard. The lop portion of “lop-and-scatter” would cut slash so it would not exceed 18 inches in height from the ground and material less than 6 inches in diameter would be cut into pieces so it would not exceed 8 ft in length. Scattering would arrange slash in a discontinuous pattern across the forest floor. If the amount of slash remaining in units is too high a fuel load because there are no open spaces to scatter the slash, chipping or handpile/burn may be recommended for treatment along roadways because, in the event of a wildland fire, roads provide ingress and egress access and strategic containment areas for firefighting equipment and personnel. This

determination would be made by the Authorized Officer as recommended by the Fuels Specialists.

Roadside activity fuels treatment would be up to 50 ft in width from the side of a road within units for chipping and handpile/burn, depending on the amount of slash present based on post-logging assessment of fuel loading.

A minimum 20 ft area on the ground would be cleared of slash and other vegetation, litter, and debris, around each landing pile to prevent escaped fire. Each slash pile would be covered with a large enough piece of 4 mm black plastic to ensure a dry ignition spot (up to 10 ft x 10 ft for landing piles or 80% coverage of handpiles).

To minimize scorch and mortality, piles would not be placed adjacent to or within 15 ft of leave trees for landing piles and 10 feet of handpiles. To facilitate desired consumption, landing piles would be as free of dirt as reasonably possible.

Prescribed burning would occur under atmospheric conditions that allow for the mixing of air to lessen the impact on air quality. Burning would be conducted in compliance with the Medford District RMP, the Oregon State Implementation Plan, and the Smoke Management Plan as administered by the Oregon Department of Forestry.

Burning of slash piles would occur after a sufficient period of curing (generally over a year) to ensure desired consumption of material and after a period of adequate seasonal moisture to minimize risk of fire escape. Smoke clearance(s) would be obtained prior to ignition to minimize impacts on air quality.

Slash created from 10.5 miles of daylighting road maintenance would be chipped/masticated, handpiled or machine piled and burned, lopped-and-scattered, and/or removed for biomass concurrently with work operations so any remaining slash is arranged in a discontinuous pattern and less than 18 inches from the ground.

Chapter 3.0 Affected Environment and Environmental Consequences

3.1 Introduction

In accordance with law, regulation, executive order, policy and direction an interdisciplinary team reviewed the elements of the human environment to determine if they would be affected by the alternatives described in Chapter 2.0. Those elements of the human environment that were determined to be affected define the scope of environmental concern (see **Environmental Elements in Appendix 2 for full list of elements considered**). The Affected Environment portion of this chapter describes the current conditions in the Farout Project Planning Area. The relevant resources that could be potentially impacted are: fire hazard; soil compaction and productivity; water resources and erosion; and the northern spotted owl and its critical habitat.

The Environmental Effects portion of this chapter provides the analytical basis for the comparisons of the alternatives (40 CFR § 1502.16) and the reasonably foreseeable environmental consequences to the human environment that each alternative would have on the relevant resources. Impacts can be beneficial, neutral or detrimental. This analysis considers the direct impacts (effects caused by the action and occurring at the same place and time), indirect impacts (effects caused by the action but occurring later in time and farther removed in distance but are reasonably foreseeable) and cumulative impacts (effects caused by the action when added to other past, present and reasonably foreseeable future actions on all land ownerships). The temporal and spatial scales used in this analysis may vary depending on the resource being affected.

Under 43 CFR § 46.115 it states that when considering cumulative effects analysis, it must analyze the effects in accordance with relevant guidance issued by the Council on Environmental Quality (CEQ). As the CEQ, in guidance issued on June 24, 2005, points out, the “environmental analysis required under NEPA is forward-looking,” and review of past actions is required only “to the extent that this review informs agency decision-making regarding the proposed action.” Use of information on the effects on past action may be useful in two ways according to the CEQ guidance. One is for consideration of the proposed action’s cumulative effects, and secondly as a basis for identifying the proposed action’s direct and indirect effects.

The CEQ stated in this guidance that “[g]enerally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions.” This is because a description of the current state of the environment inherently includes the effects of past actions. The CEQ guidance specifies that the “CEQ regulations do not require the consideration of the individual effects of all past actions to determine the present effects of past actions.” Our information on the current environmental condition is more comprehensive and more accurate for establishing a useful starting point for a cumulative effects analysis, than attempting to establish such a starting point by adding up the

described effects of individual past actions to some environmental baseline condition in the past that, unlike current conditions, can no longer be verified by direct examination.

The second area in which the CEQ guidance states that information on past actions may be useful is in “illuminating or predicting the direct and indirect effects of a proposed action.” The usefulness of such information is limited by the fact that it is anecdotal only, and extrapolation of data from such singular experiences is not generally accepted as a reliable predictor of effects.

Scoping for this project did not identify any need to exhaustively list individual past actions or analyze, compare, or describe the environmental effects of individual past actions in order to complete an analysis which would be useful for illuminating or predicting the effects of the proposed action.

When encountering a gap in information, the question implicit in the Council on Environmental Quality regulations on incomplete and unavailable information was posed: is this information “essential to a reasoned choice among the alternatives?” (40 CFR §1502.22[a]).

3.2 Fire Hazard

3.2.1 Background Information on Fire Hazard

Fire is the primary natural disturbance agent in the Klamath Siskiyou province forests, influencing vegetation structure, species composition, soil properties, nutrient cycling, hydrology and other ecosystem processes (Agee 1993). Forests with high stem density and fuel loading combined with extreme fire weather conditions has led to severe and large wildfires that have put a number of important values at risk. Homes in the path of a wildfire are perhaps the most immediately recognized value; however these wildfires also put numerous other human and ecological values at risk such as power grids, drinking water supplies, firefighter safety, critical habitat, soil productivity, and air quality (Graham et al. 2004, p.43).

3.2.2 Affected Environment for Fire Hazard

Fire Regimes

Fire regimes refer to the combination of fire frequency, predictability, intensity, seasonality, and extent of characteristic of fire in an ecosystem. A natural fire regime is a general classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning (Agee 1993, Brown 1995). Coarse scale definitions for natural (historical) fire regimes have been developed by Hardy et al. (2001) and Schmidt et al. (2002) and interpreted for fire and fuels management by Hann and Bunnell (2001). As scale of application becomes finer these five classes may be defined with more detail, or any one class may be split into finer classes, but the hierarchy to the coarse scale definitions should be retained.

According to LANDFIRE data the Farout Project Area includes 77 percent in Fire Regime 1, 17 percent in Fire Regime 3, and 6 percent is a mixture of Fire Regimes 2, 4, and 5.

Table 3-1. Fire Regime, Fire Return Interval, Fire Severity within the Farout Project

Fire Regime	Fire Return Interval	Fire Severity	Vegetative Examples
I	0-35 years	Low	Ponderosa pine, other long needle pine species, and dry site Douglas-fir
II	0-35 years	Stand Replacement	Drier grassland types, tall grass prairie, and some Pacific chaparral & southern rough ecosystems
III	35-100 years	Mixed	Interior dry site shrub communities such as sagebrush and chaparral ecosystems
IV	35-100 years	Stand Replacement	Lodge pole pine and jack pine
V	Over 200 years	Stand Replacement	Temperate rain forest, boreal forest, and high elevation conifer species

USDA/USDI al. 2003

Fire Regime Condition Class

Fire Regime Condition Class (FRCC) has become a measure of ecological departure used by the BLM, as well as other federal agencies, to describe resource conditions. This measure involves two pieces of information: (1) historic fire regime, and (2) the condition class. Condition classes classify the amount of departure from the natural regime (Hann and Bunnell 2001). Coarse-scale FRCC classes have been defined and mapped by Hardy et al. (2001) and Schmidt et al. (2001) (FRCC). They include three condition classes for each fire regime. The classification is based on a relative measure describing the degree of departure from the historical natural fire regime.

Condition Class 1 – (44% of the Farout Project Area):

Within the natural (historical) range of variability of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances.

Condition Class 2 – (23% of the Farout Project Area):

Moderate departure from the natural (historical) regime of vegetation characteristics: fuel composition; fire frequency, severity and pattern; and other associated disturbances.

Condition Class 3 – (33% of the Farout Project Area):

High departure from the natural (historical) regime of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances.

Fire Hazard

Fire hazard is a fuel complex, defined by volume, type condition, arrangement, and location, that determines the degree of ease of ignition and of resistance to control. This

fuel complex determines the ability of fire spread once ignition has occurred. Fire behavior dictates which fire suppression strategy may be effectively employed, and therefore the extent to which a fire may grow and the subsequent damage it may cause. Because fire behavior is critical in fire suppression strategy selection, it serves as the threshold used for this analysis. The unit of measure for determining the threshold is considered in terms of flame length. Typically flame lengths less than four feet can generally be managed by fire suppression personnel using direct attack on the fire edge. Flame lengths greater than four feet generally require firefighting equipment and utilize an indirect attack strategy, where personnel back off to a defensible position away from the fires edge.

Fire hazard ratings were developed for the Farout Project Area utilizing data from the Douglas County Risk Assessment. An estimated 31% of the project unit acres rate as high hazard, 61% rate as a moderate hazard, and 8% low hazard. The high and moderate hazard acres account for 92% of the Project Area acres.

Fuel Models

Fire behavior fuel models are grouped by fire-carrying fuel type. Fuels models are used to predict the potential behavior and effects of wildland fire. The majority of the Project Area can be identified within the timber understory (TU) and the timber litter (TL) fuel models. Table 3-2 shows the typical flame lengths associated with each of these fuel models during fire season weather conditions given a 5 mph wind.

Table 3-2. Fire Behavior Fuel Models with Flame Lengths

Fire Behavior Fuel Model	Fuel Model Group	Flame Length (in feet)
TL3	Timber Litter	1-2
TU2	Timber Understory	3-5
TU5	Timber Understory	7-9
SB1	Slash/Blowdown	2-4
SB2	Slash/Blowdown	5-8

(Scott, Joe and Robert Burgan 2005. USDA, GTR-153)

3.2.3 Environmental Effects on Fire Hazard

3.2.3.1 Alternative 1 (No Action) - Direct and Indirect Effects on Fire Hazard

In the short-term (1-2 years), there would be no increase in fire hazard as no landing piles would be constructed of activity slash since there is no vegetation treatment proposed under this alternative.

In the long-term, the fuel hazard would increase as vegetation continues to develop. Surface fuels would increase due to tree mortality in dense stands as higher levels of insect and disease mortality are expected. The Project Area would remain in moderate to

high fire hazard, resulting in a higher potential of increased fire behavior if a wildfire occurs. The departure from the historical fire regime would continue to trend toward condition classes 2 and 3.

3.2.3.2 Alternative 2 (Proposed Action) - Direct and Indirect Effects on Fire Hazard

The majority of cut vegetation would be extracted from the commercial thinning and riparian thinning units. Daylighting road maintenance activities would also extract the majority of cut vegetation from these areas. The commercial thinning, riparian thinning, non-commercial density management, and daylighting activities have very similar effects on fire hazard. The remaining slash in the units may cause an initial shift from a timber type fuel model to a slash/blowdown fuel model. The cut vegetation may be recommended for lop & scattered in units to prevent concentrations of slash and to arrange the material in a discontinuous pattern where the average fuel bed is less than 1 foot in height. Where post-harvest field review indicates a shift of the fuel model, due to heavy concentrations of slash (greater than 1 ft in height), the recommended treatment would be to hand pile and burn and/or chip the slash to decrease the fire hazard by keeping the fire behavior from exceeding the four foot flame length threshold.

The slash fuel load would have an initial increase in slash mass following proposed activities. Immediately following thinning activities and prior to slash disposal, fire behavior potential would increase from the current potential fire behavior due to increased surface fuels. Within 4 to 6 years the amount of woody fuels (slash) would return to pre-treatment levels due to fuels mitigation measures and decay that incorporates the slash into litter and duff layers.

Cut vegetation extracted from commercial thinning, riparian thinning, and daylighting road maintenance would be piled at landing sites, in hand piles, or chipped into the unit. If biomass is not extracted from these piles, they would be burned under conditions that maximize consumption while minimizing potential escaped prescribed fire. The piles would need to cure (dry out) to burn thoroughly enough to achieve these conditions. This curing process generally takes over a year, during which time there would likely be a short term increase in fire hazard because the piles have the potential to produce flame lengths that exceed the fire behavior threshold (greater than four foot flame lengths) and increase spotting distance. There are no long term effects to fire hazard since the short term increase would be negated once the landing and/or hand piles are burned and/or removed. If the cut vegetation is chipped into the unit there are no long term effects to fire hazard due to the reduction of fuel bed depth and discontinuous arrangement of chipped fuels.

The majority of the Farout Project units are identified in the Southwest Oregon Fire Management Plan as Fire Regime 1, with low to mixed severity fires historically occurring roughly every 0-35 years. This fire regime has been interrupted due to past fire and forest management practices, resulting in a current condition of Condition Class 2 and 3 with moderate to high departure in natural vegetation characteristics and fuel

loading. The FRCC within the proposed thinning units would remain unchanged following harvest.

3.2.3.3 Alternative 2 (Proposed Action) - Cumulative Effects on Fire Hazard

The Farout Project Area boundary is defined by ridgelines, and road systems which serve as strategic locations to construct firelines. In the event of a wildfire, these strategic locations may be utilized to contain a fire within the Project Area, or conversely, to prevent a fire from entering it. As such, the Farout Project Area boundary lends itself to a logical scale to conduct fire hazard cumulative effects analysis.

When compared to the no action alternative, the cumulative impact of the proposed action on Fire Regime Condition Classes within the watersheds and the Project Area would be minimal. The departure from the historical fire regime would continue to trend toward condition classes 2 and 3. The cumulative impact would be an initial increase in fire hazard due to the activity slash from the thinning activities until the fuels mitigation work was completed.

The Elk Valley Roadway Maintenance Project is the one federal project foreseeable within the Farout Project cumulative effects analysis area. The project would remove vegetation 10-15 ft (slope distance) from the edge of the road surface down the fillslope, and 10-15 ft (slope distance) from the outer edge of the ditchline up the back slope on approximately 25 miles of roadway, totaling 74 acres. The proposed maintenance activities would mechanically cut all vegetation greater than 12 inches in height. The cutting of trees would include trees up to 24 inches dbh. This would consist of mechanically falling all trees within the treatment area and removing merchantable logs. Slash created by this operation could be treated by a combination of chipping and broadcasting into the residual stand; transferring wood material to a biomass facility; or lopping and scattering. There would be a short term decrease in fire hazard by creating a fuel break to decrease a potential fire's spread and intensity. A long term beneficial effect on fire hazard would be that the road system could be utilized as a strategic holding point for fire suppression personnel.

3.3 Soil Compaction and Productivity

3.3.1 Affected Environment for Soil Compaction and Productivity

Physical, chemical, and biological properties of soils determine the level of productivity of a soil. These properties also determine how different soils respond to natural and anthropogenic disturbances. To be productive for timber management, soils must be able to acquire, maintain, and release water and nutrients needed by trees during the growing season. Soils must also be able to support the microorganisms necessary to maintain proper nutrient cycling and plant nutrition. Forest management activities can affect these soil properties by displacing and compacting soils and removing topsoil organics.

Soil compaction is defined as the packing together of soil particles by physical pressure at the soil surface that results in an increase in soil density and a decrease in pore space. A decrease in soil pore space results in restricted movement of water, nutrients, air, and plant roots, and as such generally decreases site productivity in most soil types.

Soil productivity, in a forested setting, is primarily the soil's capacity to support plant growth over time as reflected by some index of biomass accumulation. Losing a soil's plant growth capacity also means losing the site's ability to sustain a level of timber production as well as important ecological values. Soil productivity is affected by soil bulk compaction, soil displacement, and by changes in soil nutrients. Litter, humus, soil wood, and certain key properties of the surface mineral layers of forest soils are most easily and commonly disturbed by yarding activities, yet they are crucial to forest productivity. Minimizing the amount of soil displacement, compaction, and topsoil loss will generally maintain stand development. The most common types of disturbances effecting soils and associated long term soil productivity are displacement and compaction. Soil compaction and displacement, which effects growth, is a combined effect which cannot be separated (1994 Medford District EIS, Vol. 1, p. 4-13).

The amount of soil compaction and productivity loss will be based on percentages per unit. The scale of analysis is per harvest unit, as it is the affected area for soils to support tree establishment and growth on BLM managed land. Specifically, soil productivity calculations are based on acres of compaction/displacement representing a 35% growth/productivity loss per acre (Productivity losses of 30 and 40% for displaced and compacted acres respectively, are based on the Medford District PRMP vol.3 calculations, p.18-20). These two productivity loss factors were averaged at 35% for this analysis, based on estimated percentages of compaction and displacement within each cable yarding corridor and tractor skid trail being in roughly equal proportions. The acres of compaction/ displacement were then multiplied by the projected loss of 35% growth divided by the unit area to determine the reduction in productivity. The calculations take into account compaction/displacement associated with temporary routes, landings, skid trails, and cable yarding corridors.

3.3.2 Environmental Effects on Soil Compaction and Productivity

3.3.2.1 Alternative 1 (No Action) - Direct and Indirect Effects on Soil Compaction and Productivity

Alternative 1 would result in a negligible increase in soil productivity. Unrecovered compaction/displacement that resulted from past harvest activities within 34 of the 38 harvest units proposed for the Farout Project would continue to regress to pre-harvest conditions. Fine roots of current vegetation would continue to loosen compacted soil. Leaf fall and other litter from the vegetation would continue to add organic material to the soil. Soil productivity in areas not affected by past disturbance would continue along existing productivity patterns.

3.3.2.2 Alternative 2 (Proposed Action) - Direct and Indirect Effects on Soil Compaction and Productivity

Alternative 2 proposes 735 acres of commercial thinning and 1.5 miles of temporary route construction, that would result in an estimated 55.2 acres of soil compaction and displacement over new and existing footprints and would reduce soil productivity by an estimated 2.6%. Best Management Practices in the 1995 RMP (p. 166) describe the use of designated skid roads within stands to limit soil compaction to less than 12% of the harvest area. The analysis of skid trail compaction/displacement that was projected in GIS averaged approximately 3.7% compaction per unit. Total compaction/displacement associated with new and existing temporary routes, tractor skid trails, landings and cable yarding corridors would account for an average of approximately 8.1% per unit. Each proposed Farout Project harvest unit would be below 12% compaction and 5% productivity loss as analyzed in the 1994 Medford District FEIS RMP. Unit 13-2B (10 acres proposed for non-commercial density management) would not contribute to soil compaction or productivity loss, since no extraction is proposed for this unit.

The specific actions of the Proposed Action that would affect the physical, chemical, or biological properties of soils in proposed harvest units are described below.

Soil Compaction/displacement

- Roads

A total of 0.22 miles of temporary route reconstruction would occur within units 15-1 and 29-1. These roads utilize existing road footprints that are currently compacted as a result of past harvest activities. These existing roads that would be re-opened for the Farout Project amount to approximately 0.4 acres. Following use, these reconstructed roads would be ripped, stabilized, water barred and barricaded. While some displacement of surface organic material that had fallen onto the old road surface since past harvest would occur, compaction would be reduced by the ripping. Overall, soil productivity on these acres would improve.

A total of 1.5 miles of temporary route construction is anticipated to occur during implementation of the Farout Project, resulting in 0.63 acres of soil compaction. These routes would allow harvest operations to occur within parts of five units (11-2, 15-1, 21-1, 29-2, and 31-5). These temporary routes would amount to approximately 2.53 acres. Following use, these temporary routes would be ripped, stabilized, water barred and barricaded. There would be some short-term loss of soil productivity where the temporary route was constructed due to displacement of soil organics. There would be an increase in soil productivity within the unit along these temporary routes in areas where the organics were deposited (e.g. fill-slopes). Ripping of these temporary routes would mitigate compaction.

- Landings, Skid trails, and Cable Yarding Corridors

Soil compaction from landings, skid trails, and cable yarding corridors would occur on approximately 54.6 acres from the Farout Project. These landings, skid

trails, and yarding corridors would be utilized during the extraction of commercial size timber.

Landings, skid trails, and cable yarding corridors would be winterized and rehabilitated by properly installing and/or using water bars, berms, sediment basins, gravel pads, hay bales, small dense woody debris, seeding and/or mulching, to reduce sediment runoff as described in Appendix 9 (Standard Operating Practices, p.151). Tractor landings in Riparian Reserves would be ripped after use to mitigate compaction.

Operators working within previously harvested units would be required to utilize existing skid trails and cable yarding corridors to the greatest extent possible before consideration of new trails and corridors. New skid trails, would be pre-designated and approved by the BLM Authorized Officer.

- Off Designated Skid Trails, Use of Mechanized Harvest Equipment
Mechanized harvest equipment (if used) would operate from slash mats that would be a minimum 8 inches in depth. Slash mats would disperse downward pressure across the soil surface.

Soil Productivity

Thinning in many of the Farout Project units would increase the productivity of residual trees by effectively increasing water and nutrient availability. (In the remaining units thinning would improve/maintain stand vigor and current growth rates.) The stands in the Farout Project Area are a product of past timber management activities and fire suppression activities. Many of these stands are currently showing reduced growth rates as a result of overstocked conditions that are causing competition for soil nutrients and water. The Proposed Action would reduce competition on the retained trees for light, nutrients, water and growing space.

3.3.2.3 Alternative 2 (Proposed Action) - Cumulative Effects on Soil Compaction and Productivity

Effects of the proposed action are analyzed on a per harvest unit basis. Design of the proposed action to meet established standards for loss of soil productivity in this project as in others maintains desired soil productivity on BLM managed lands across the landscape.

3.4 Water Resources and Erosion

3.4.1 Affected Environment for Water Resources and Erosion

3.4.1.1 Scale of Analysis

The Farout Project Planning Area is located within the West Fork Cow Creek (WFCC) and the Middle Fork Coquille River (MFCR) HUC 5 watersheds. The Planning Area for

this project encompasses approximately 33% of the 55,892 acre WFCC HUC 5 watershed and approximately 0.7% of the 197,215 acre MFCR HUC 5 watershed. The Planning Area boundary includes portions of four HUC 6 sub-watersheds including Gold Mountain Creek-West Fork Cow Creek, Elk Valley Creek-West Fork Cow Creek, Bear Creek-West Fork Cow Creek, and Twelve Mile Creek. The Farout Planning Area follows ridgelines and includes a total of approximately 19,540 acres. The proposed units in this Planning Area total approximately 745 acres. The analysis for water resources and erosion includes the extent of the Planning Area, because erosion is anticipated to be localized within 25 ft of haul routes and within unit boundaries, and impacts to water quality would not be of a magnitude to travel outside this Planning Area. This assumption is based on recent projects of this scale and scope using comparable BMPs. Providing this analysis at a more expansive scale would not detect any measurable effects and would eliminate any meaningful discussion of the effects.

Management of BLM lands within these HUC 5 watersheds is divided between the Glendale Resource Area (RA) of the Medford District BLM and the South River RA of the Roseburg District BLM. Proposed units and haul roads for this Project are within the Glendale RA portion of these watersheds. The West Fork Cow Creek Watershed Analysis (WA) and West Fork Cow Creek Water Quality Restoration Plan (WQRP) cover the WFCC HUC 5 watershed. These documents can be reviewed on the Medford District BLM website at <http://www.blm.gov/or/districts/medford/plans/inventas.php> and <http://www.blm.gov/or/districts/medford/plans/activityplans.php>, respectively. The Upper Middle Fork Coquille WA covers the MFCR HUC 5 watershed, and is available for review on the Roseburg District BLM website at <http://www.blm.gov/or/districts/roseburg/plans/inventas.php>.

The West Fork and Middle Fork Coquille Creek HUC 5 watersheds have federal lands intermingled with non-federal land in a “checkerboard” pattern characteristic of much of the Oregon and California (O&C) railroad lands of Western Oregon.

Designated beneficial uses for the WFCC HUC 5 watershed include; public and private domestic water supply; industrial water supply; irrigation; livestock watering; anadromous fish passage, rearing, and spawning; resident fish and aquatic life; wildlife and hunting; fishing; boating; aesthetic quality; water contact recreation; and commercial navigation and transportation. Beneficial uses within the MFCR HUC 5 watershed include but are not limited to; instream, out of stream and groundwater uses, domestic, municipal, industrial water supply, mining, irrigation, livestock watering, fish and aquatic life, wildlife, fishing, water contact recreation, aesthetics and scenic attraction, hydropower, and commercial navigation.

The WFCC HUC 5 is a Tier 1 Key watershed in the RMP and is therefore an integral part of the Aquatic Conservation Strategy (ACS) (see Appendix 5 for the ACS Consistency Analysis). More information about Key watersheds can be found within the West Fork Cow Creek WA.

3.4.1.2 Sediment and Stream Condition

The Oregon Department of Environmental Quality (ODEQ) is responsible for establishing water quality standards to protect beneficial uses and aquatic life in Oregon streams. Currently ODEQ does not have established criteria for measuring sediment. The current water quality standards instead address turbidity, a measure of water clarity. These standards are primarily based on an Environmental Protection Agency (EPA) recommendation from 1976. ODEQ is in the process of revising the water quality standards for turbidity based on the best available science regarding the effects of turbidity on beneficial uses, in particular aquatic life (<http://www.deq.state.or.us>). This standard does not necessarily correlate with the amount of sediment entering the stream.

In addition to turbidity standards, the health of aquatic macroinvertebrate communities has been used as an indicator of sedimentation effects and overall water quality conditions in aquatic systems. The Glendale Resource Area has monitored aquatic macroinvertebrates within the WFCC HUC 5 watershed since 1992. The results of those surveys indicate sediment and lack of habitat complexity may be limiting aquatic productivity in some locations. Survey information is located in the Glendale RA fisheries department and is available to the public upon request. No macroinvertebrate information was found for the MFCR watershed. Anecdotal information collected in this Planning Area during field review indicates that stream turbidity during winter months becomes elevated in most of the major streams.

In both the WFCC and MFCR HUC 5 watersheds stream bed quality has been impacted by high road densities, roads in close proximity to streams, un-maintained or poorly maintained roads, native surface roads used for winter haul, roads open to year round for public motor vehicle use, and non-federal and pre-Northwest Forest Plan timber harvest that included streamside harvest. These assessments are based on the macroinvertebrate surveys discussed above, field review, and on past stream surveys that used the National Marine Fisheries Service Matrix of Factors and Indicators (NMFSMI). NMFSMI assessments take into account stream condition factors such as water temperature, aquatic insect habitat, streambed gravels, large woody debris (LWD), pool quantity and quality, off channel habitat, refugia, stream width to depth ratio, active erosion, floodplain connectivity, road density and location, riparian vegetation condition and type, and disturbance history. Despite some locations having elevated sediment deposits, all streams surveyed using this protocol were classified as “Properly Functioning Condition” or “Functioning- at Risk”. No streams were classified as Not Properly Functioning.

Stream surveys completed in the Farout Planning Area indicate that though variable, water quality, channel stability, and stream bed quality for aquatics within, and adjacent to units is generally in fair to good condition. Within less than 5% of the streams where one or more of these was rated as poor, skid trails and roads that are crossing or adjacent to streams were reported to be the primary cause. Streamside vegetation in and adjacent to units are generally no more than two canopy layers with an average DBH of 6-18 inches.

The major streams in the Planning Area are West Fork Cow Creek, Gold Mountain Creek, Elk Valley Creek, Panther Creek, and Hayes Creek. These are 3rd order to 6th order stream channels, and generally contain some fish habitat in the lower reaches (see Appendix 2 regarding the presence of managed fish habitat and species). Streams that are 3rd order and above account for approximately 39 of the 207 miles of perennial and intermittent stream channels within this Planning Area. Approximately 81% of the stream miles in this Planning Area are 1st and 2nd order tributary streams. Substrate within these channels is primarily bedrock and boulder dominated with high to moderate levels of active streamside erosion. Tributary streams are generally steep, narrow, and confined, with low or no flow by late summer. During the winter months flows within these streams typically become fast moving and scouring. Channel roughness in the upper reaches of most all streams within this Planning Area is generally high. Though many riparian areas in the Farout Planning Area are dominated by smaller diameter stands of Douglas-fir and hardwoods, and are lacking large wood debris, downed logs, and large tree structure, most riparian areas on BLM land have sufficient streamside vegetation in the form of brush, ground cover, and riparian hardwoods to protect water quality. Data from surveys is available upon request in the Glendale Resource Area files in the Fish/Hydrology work areas.

3.4.1.3 Soils and Soil Complexes

The Farout Planning Area is located in both the Klamath Mountain and Coast Range physiographic provinces. The Klamath Mountains were formed from Mesozoic-Jurassic geologic formations which are folded and faulted, and intruded by the collision of the North American and Farallon Plates. The level IV ecoregion for this project is the Coastal Siskiyou. This ecoregion is characterized by highly dissected mountains with high gradient streams. The surface and bedrock geology is generally Quaternary colluvium, Cretaceous and Jurassic conglomerate, sandstone, and siltstone. A small portion of the Farout Planning Area is located in the more mountainous southern portion of the Coast Range province. Topography in this portion of the Planning Area is also characterized by highly dissected mountains with high gradient streams. The surface bedrock consists primarily of lower Eocene conglomerates, sandstones, and mudstones.

The Planning Area is comprised of four principal geologic formations. The Dothan Formation accounts for approximately 64% of this Planning Area, which is composed of oceanic continental slope rocks of turbidite sands, silts, and muds (Orr et al 1992). The Dothan Formation has some areas where translational and rotational slides have occurred. In general these slides are related to mudstone and siltstone layers, not sandstone. Approximately 27% of the Planning Area has a Marine siltstone, sandstone, and conglomerate formation (Tmsc) with Massive to thin bedded cobble and pebble conglomerate, pebbly sandstone, lithic sandstone, siltstone, and mudstone. This formation has a shelf and slope depositional setting (Upper Middle Fork Coquille WA, 1999).

Typical soils and soil complexes in this Planning Area formed in residuum (i.e., weathered in place) and colluvium (i.e., material rolling downhill) from sandstone, siltstone, volcanic and metamorphic rock. Soils in the Planning Area vary from clay loam

to extremely gravelly loam in the surface horizon, with a moderate erosion hazard on slopes under 30%, and a moderate to high hazard of erosion on steeper slopes. Project soils are generally well-drained and moderately deep (20-60⁺ inches to bedrock), with some local areas of shallow soils on ridgetops and rock outcrops. Project soils are suited primarily for growing Douglas fir. Western hemlock, ponderosa pine, Pacific madrone, Red and Port Orford cedar, and grand fir are common secondary species within the overstory of these stands. Soil maps and descriptions of project soil characteristics are available at the USDA Natural Resource Conservation Service web site: http://www.or.nrcs.usda.gov/pnw_soil/or_data.html.

The major management limitations and soil characteristics identified by NRCS for the soils and soil complexes found within the Planning Area were used in the selection of proper Best Management Practices (BMPs) and Project Design Features (PDFs) that have been incorporated into the Farout Project.

3.4.1.4 Fragile Soils

Portions of the Farout Planning Area are classified as having fragile soils under the Timber Production Capability Classification (TPCC) Handbook (BLM 1986). Map 16 of the West Fork Cow Creek WA identifies broad areas that may be prone to soil instability, mass failure, or sedimentation. This information is compiled broadly and is not based on site specific field review. As such, these areas are cautiously assessed during site specific field review. The field data collected ultimately determines the specific areas where timber management is suitable. Map 13 of the Upper Middle Fork Coquille WA displays areas withdrawn from timber harvest in the northern portion of the Planning Area. Proposed Farout Project units do not overlap TPCC withdrawn areas. The TPCC classification layer, shown in Map 1 (p. 49 of the EA) identifies “Commercial Forest Land-Suitable” soils in units proposed for this project. These soils require harvest or reforestation, techniques or timing to be altered, or protection measures to be implemented to be capable of meeting minimum stocking and to minimize productivity loss from erosion, mass wasting, nutrient loss, a reduction in moisture supplying capability, or a rise in water table (BLM 1986). See Sections 2.3.2.2, Section 2.3.2.4, and Table 3-3 of this EA for specifics.

In this Planning Area fragile classifications include Fragile-Slope Gradient-Suitable and Fragile-Groundwater-Suitable. Sites that are suitable for commercial harvest, but that are classified as fragile due to slope gradient are considered suitable for commercial harvest actions but have higher instances of debris type landslides and unacceptable levels of surface erosion if implemented without site specific PDFs. Sites that are suitable for commercial harvest, but that are classified as fragile due to groundwater contain water at or near the surface for sufficient durations to result in vegetative growth and survival affects. Without the application of specific protection measures, these sites can be prone to excessive soil displacement, compaction, and where hydrologically connected, stream sedimentation.

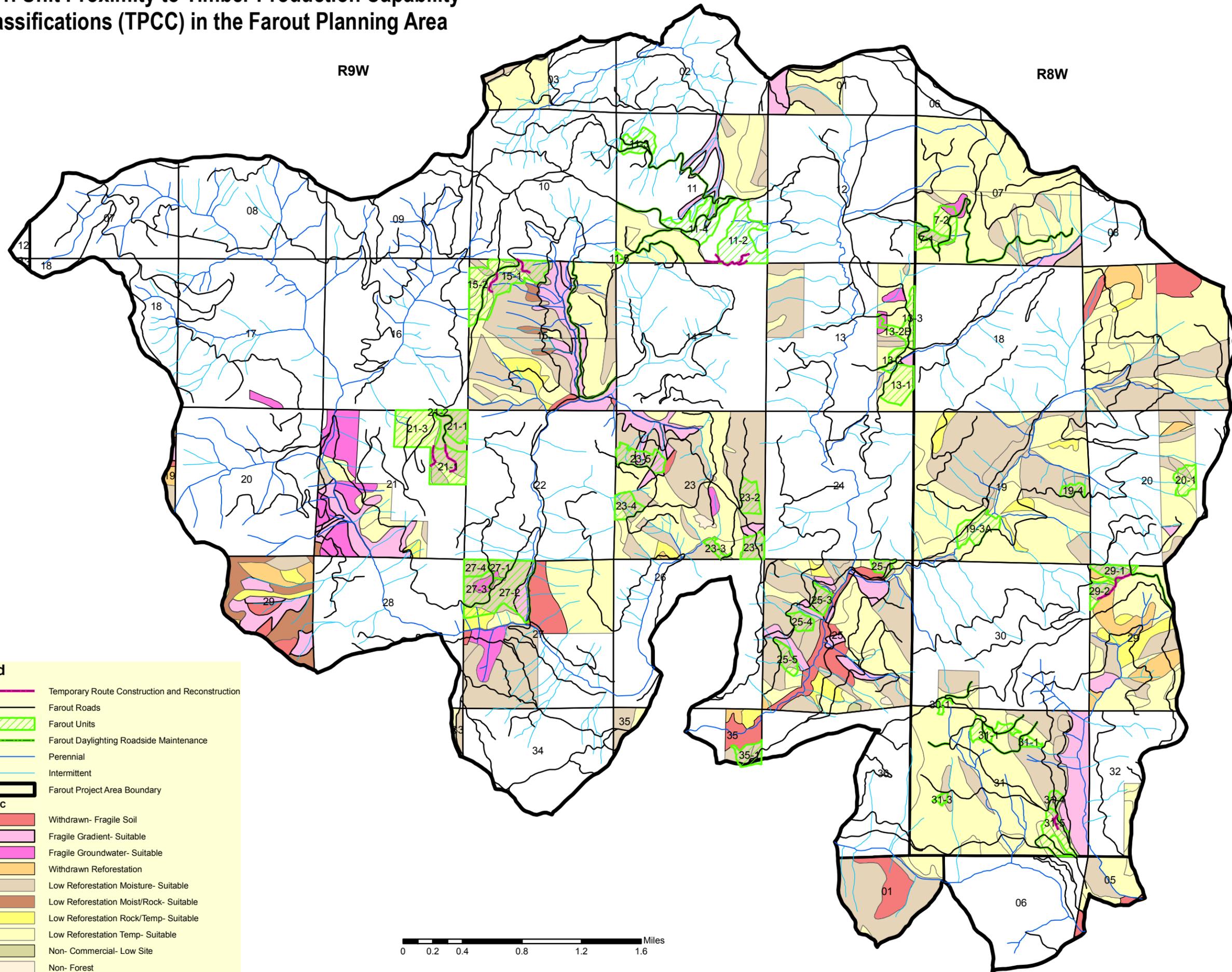
Additional TPCC classifications that overlap units in this Planning Area assess reforestation difficulties rather than impacts to the physical structure and stability of the soils. These include Reforestation-Temperature-Suitable, Reforestation-Moisture-Suitable, and Reforestation-Surface Rock-Suitable. Table 3-3 describes the specific limiting factors for each of these classifications. Since all harvest treatments under the Farout Project are thinning actions, leave trees and natural reforestation would meet the minimum restocking guidelines under the NWFP, and tree planting on these sites would not be needed. “These sites will meet or exceed minimum stocking levels of commercial species within 5 years of harvest using operational practices,” (BLM 1986).

Table 3-3. Timber Productivity Capacity Classification (TPCC) Fragile Suitable Soils in Farout Project Units

Unit #	TPCC Classification	Action Needed
11-4 +Roadway	Fragile-Slope Gradient-Suitable	- Buffer potentially unstable draw areas - Fragile draws buffered on roadway - Seasonal restriction
7-1 tractor	Fragile-Groundwater-Suitable	- Seasonal restriction - Skid trail decommissioning on skid trails used in NE corner of unit only
7-2 cable +Roadway	Fragile-Groundwater-Suitable	Seasonal restriction
Section 15 Roadway	Fragile-Slope Gradient-Suitable	Individual, pre-identified trees only
23-1	Fragile-Slope Gradient-Suitable	- Buffer ground based harvest away from slopes over 35% - Seasonal restriction
23-5 +Temp Rd	Fragile-Slope Gradient-Suitable	- Buffer out potentially unstable draw area - Seasonal restriction
25-3	Fragile-Slope Gradient-Suitable	Seasonal restriction
25-5	Fragile-Slope Gradient-Suitable	Seasonal restriction
27-2	Fragile-Slope Gradient-Suitable	Buffer out all fragile-slope gradient classified area
27-3 +Roadway	Fragile-Groundwater-Suitable	- Seasonal restriction - Skid trail decommissioning on skid trails used
27-4	Fragile-Groundwater-Suitable	Seasonal restriction

Seasonal Restriction is **dry season only, generally between May 15th and --October 15th.

Map 1. Unit Proximity to Timber Production Capability Classifications (TPCC) in the Farout Planning Area

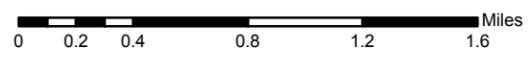


Legend

- Temporary Route Construction and Reconstruction
- Farout Roads
- Farout Units
- Farout Daylighting Roadside Maintenance
- Perennial
- Intermittent
- Farout Project Area Boundary

Farout TPCC

- Withdrawn- Fragile Soil
- Fragile Gradient- Suitable
- Fragile Groundwater- Suitable
- Withdrawn Reforestation
- Low Reforestation Moisture- Suitable
- Low Reforestation Moist/Rock- Suitable
- Low Reforestation Rock/Temp- Suitable
- Low Reforestation Temp- Suitable
- Non- Commercial- Low Site
- Non- Forest



T31S

T32S



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

3.4.1.5 Soil Erosion and Stream Sedimentation

Soil displacement refers to the moving of the surface soils as a result of some applied force. When soil displacement occurs soil horizons may become mixed, essential soil nutrients, water, and soil organisms may be rearranged or removed, and topsoil may become rutted. These alterations to the soil profile or soil characteristics may result in accelerated erosion. As defined in Section 3.3.1, soil compaction is the packing together of soil particles by physical pressure at the soil surface that results in an increase in soil density and a decrease in pore space. A decrease in soil pore space results in restricted movement of water, nutrients, air, and plant roots, and as such generally decreases site productivity in most soil types. Reduced pore space also reduces infiltration, causing an increase in surface runoff that can result in accelerated erosion rates.

Soil displacement and compaction can occur during forest management activities when mechanized harvesting or yarding equipment drives over or yards timber across poorly vegetated, bare, or wet soils. Where logging or prescribed burning operations result in exposed soil, surface erosion can occur when rain splash or overland flow causes the detachment of soil particles during wet conditions, or when gravitational and wind movement causes detachment of particles during dry weather conditions. Vegetative cover reduces the particle detachment rate, and through the binding capacity of root masses, the sediment transport rate (NOAA Fisheries, 2004, (Larson and Sidle, 1981; Harvey et al. 1994)). Therefore surface erosion, from disturbed soils that are not compacted, is normally greatly diminished within 3-5 years, following the regrowth of vegetation.

Erosion can also occur as a result of the blading of road surfaces, the use of inadequately rocked and natural surface roads, wet weather road haul, ditchline maintenance, an insufficient number of road cross drain culverts, undersized or poorly placed cross drain culverts, and in areas of exposed soil such as yarding corridors, skid trails, landings, and road construction sites. Poorly located roads can cause increased channelization of hillslopes and mass wasting (Wemple and Jones, 2003). Where hydrologically connected, un-vegetated ditchlines, road surfaces, and cross drains all mobilize eroded soils to streams.

Based on field surveys, historic aerial photos (circa 1965), and current satellite imagery (2009), the Farout Planning Area currently has compaction and accelerated surface erosion as a result of timber management, and the preserving of public access routes.

- Roads
Currently water quality within the Farout Project Planning Area has been altered by past timber management and road construction activities. Road densities within this Planning Area are 5.2 mi/mi². For this element of NMFSMI surveys, this is above the 3 mi/mi² threshold for “not properly functioning” for aquatic species by the National Marine Fisheries Service (NMFS) (USFWS/NOAA Fisheries Table of Population and Habitat Indicators, USDA et al. 2004b).

Roads in close proximity to streams, un-maintained or poorly maintained roads, native surface roads used for winter haul, and roads open to year round for public motor vehicle use are the major ongoing sediment sources in this Planning Area. Roads constructed within riparian zones along streams contribute sediment to the adjacent stream, reduce riparian habitat quality, and remove potential sources of large woody debris from streams. Un-vegetated ditchlines, road surfaces, and cross drains can all transport sediment. Oregon Department of Forestry (ODF) monitoring data shows approximately one-third of private and state roads deliver sediment to streams via ditchlines, especially when used during winter hauling operations. A number of issues were identified by ODF and DEQ to be contributing to the problem of sediment delivery to streams from these roads including; a lack of filtering prior to road drainage entering streams; too wide of spacing between, or poor placement of cross drainage structures; and a “lack of rules that specifically address minimizing turbidity caused by wet-weather hauling” (ODF/DEQ, 2002).

Within the Planning Area, there are approximately 160 miles of system roads that are currently used and maintained as needed. Most of these roads are open to the public and are periodically used and maintained as haul routes for forest management operations. Approximately 2% of roads in this Planning Area are Bituminous Surface Treatment (BST) surfaced. Rocked roads account for approximately 47% of the roads, and when used for wet condition haul, are generally upgraded where needed to provide adequate surfacing to prevent excessive erosion and road damage. Unless upgraded, rocked and natural surface roads on hydrologically connected BLM lands are only used for log hauling during dry conditions. Approximately 19% of the roads within the Farout Planning Area are unsurfaced. These roads are generally the largest sediment sources, especially if they are open to year round public motor vehicle use. The remaining 32% of roads within this Planning Area are unclassified surface type. Nearly all of these roads occur on private lands. Many of the roads on private lands within this Planning Area have had surface and drainage upgrades in recent years to allow for year round hauling. The percentage of these roads that are rocked or natural surface is unknown.

All hydrologically connected roads contribute to accelerated erosion and stream sedimentation within the Planning Area at different levels depending on the surface type, type of use, location, maintenance frequency, and moisture levels of the road surface during use. BLM managed land in the Glendale Resource Area limits its use of rocked and natural surface roads to dry conditions to reduce erosion and protect road surface integrity. Approximately 68% of roads within the Planning Area are hydrologically connected to streams at stream crossings. Approximately 94% of these cross first and second order headwater streams.

In addition to the standard maintenance of ditchlines and running surfaces implemented on rocked and natural surface roads, ditchline maintenance occurs as needed on BST (bituminous surface type) and paved roads in the Planning Area. Ditchline maintenance includes the removal of debris and vegetation where it is impeding water flow, and the digging out or “pulling” of ditchlines where they are

lacking the ability to carry the volume of water that is entering them without spilling out across the road surface. This maintenance results in an increase in erosion within ditchlines for the first season until protective vegetation re-grows and bare soils regain stability. Where these ditchlines are hydrologically connected to streams, ditchline maintenance can result in chronic sediment delivery to streams through the first winter, unless Best Management Practices require a sediment filter to be in place prior to stream culverts. Following the first season, ditchline maintenance results in an overall reduction in chronic erosion of the road surface and where hydrologically connected, subsequent stream sedimentation. Proper cross drain spacing and vegetated ditchlines can greatly reduce the amount of sediment that enters streams as a result of roads. In this sub-watershed, cross drain spacing is generally adequate except during high flow events. Ditchlines are only “pulled” as necessary to protect road integrity. As a result most ditchlines in this sub-watershed have sufficient vegetation within the ditchlines to slow erosion and filter a portion of the sediment.

Cross drain culverts on road systems in the Planning Area are generally spaced further apart than recommended under the Oregon Administrative Rules for forest roads (OAR 629-625-0330). However, upgrading this spacing is only necessary to prevent exceeding water quality standards. Roads proposed for haul and maintenance have been inventoried and currently are not in need of additional cross drains to prevent accelerated erosion or exceeding water quality standards. For the most part, ditchlines appear to be functioning properly, having adequate movement of water, and little scour. In isolated areas where ditchlines are not properly functioning, the pulling of the ditch would be adequate to correct these problems. Numerous culverts have been replaced in the past 5 years along road systems within the Farout Planning Area, reducing the number of undersized and perched culverts. Where problems associated with accelerated erosion are corrected, aquatic habitat and water quality will likely improve. Downspouts of some cross drains and stream culverts could be upgraded by installing splash pads or downspouts to reduce existing stream draw erosion.

- Skid Trails, Landings, and Yarding Corridors

It was calculated that approximately 1,015 acres (5.1%) within this Planning Area have had soil compaction and displacement that has led to subsequent increases of erosion as a result of the construction and use of landings, skid trails, and yarding corridors during timber management operations within the past 37 years⁴. Many of

⁴ Medford Change Detection (2002), 2009 satellite imagery, and field data were used to estimate units harvested in the past 37 years. Though this does not account for all potentially affected soils, it is the extent of the data that is presently available. This lack of data is not considered to be a measurable source of error since compaction recovers naturally over time, and it is expected that those soils that may have been unaccounted for during this analysis (as a result having been harvested prior to the first available year of data) would be in an advanced stage of recovery. This is based on average natural recovery for the soil types, climate, and elevation of this watershed, and on the skid trail conditions observed during field visits to units in these sub-watersheds harvested in the 1960s. Yarding systems were identified based on known data, visible landscape scar patterns, or slope steepness. Tractor yarding on slopes over 35% has not been permitted on federal lands since the implementation of the Northwest Forest Plan in 1994. Units identified as tractor yarded prior to NWFP BMPs are calculated at 25% affected area, and at 12% following the implementation of the NWFP. All cable yarded units are calculated at 7% affected area. These percentages are based on research by Adams and Froehlich, 1981, Dryness, 1967, and Clayton, 1981.

these disturbed acres are no longer visible on the ground and appear to have recovered as a result of the re-growth of vegetation. Within previously harvested units in the Planning Area, evidence of past compaction is still present along tractor skid trails, and within stream channels intersected or bordered by these trails. Where poorly rehabilitated skid trails, landings, and yarding corridors are hydrologically connected to the streams through road systems, or are adjacent to streams that have little or no riparian buffer, these areas have become sources of stream sediment that are contributing to the current aquatic conditions discussed above.

- Wildfire and Prescribed Fuels Reduction

There are approximately 10 acres of hazardous fuel reduction treatments that have occurred in the past five years within this Planning Area. These treatments were designed to limit the extent and magnitude of onsite erosion (retained within the vegetation of each unit and would not be transported to streams), and to protect from offsite erosion. These treatments help to reduce the probability of an intense, large scale wildfire occurring by reducing fuel loading and horizontal continuity within the stand.

Heat resulting from large scale and intense fires can damage soil biology such as mycorrhizae, nitrifying bacteria, and other soil organisms in proportion to burn intensity, adversely affecting soils for up to 10 years (Barnett, 1989). GIS data indicates that there have been six wildfires in the Planning Area in the last 10 years. All were less than 0.25 acres in size. Due to the small acreage and distribution across over 19,000 acres, the extent of offsite erosion from these fires is expected to be negligible.

- Existing Condition of Proposed Units

Within proposed units, evidence of past logging operations is still present on the ground. In units proposed for both cable and ground based harvest, skid trail compaction is common and presently extends through riparian areas and across small stream channels of many units. Wet areas have developed or expanded in areas where subsurface flows have been restricted or rerouted as a result of skid trail compaction. In areas directly downslope of where skid trails cross small stream draws, streams show evidence of past erosion that has resulted in streambed downcutting. As evidenced by the moderate to deeply cut stream draws and stream side draw instability that can be viewed without leaving many of the roads within these watersheds, soils within this Planning Area are prone to surface water erosion. Though these conditions do occur as part of naturally occurring events, it is not unexpected that road construction and past harvesting practices which created extensive compaction have resulted in increased surface water and altered stream channels. Though active erosion still appears to be ongoing in small streams within proposed Farout units, widespread instances of excessive erosion that would result in measurable impacts to aquatic habitat or macroinvertebrates is not currently taking place. An onsite evaluation of current conditions within proposed units indicates that subsoiling of skid trails would assist in stream channel and subsurface flow pattern recovery.

Table 3-4 notes conditions in units necessitating substantial changes for unit proposals found during field review. Where BMPs or PDFs were able to provide acceptable solutions to ensure water flows, water quality, and soils stability could be protected by buffers, units remained as proposed. Where BMPs and PDFs could not provide adequate protection, units were deferred or altered to ensure water flows, water quality, and soils stability could be maintained or improved as a result of this project.

Table 3-4. Major Changes applied to Units Following Field Surveys

Unit #	In Unit Channel Stability Rating*	Conditions Unique to Unit	Actions Taken During Planning **
11-2	Poor	Instability in draw area dividing tractor and cable portions of unit	Deferred approx. 3 acres of harvest and changed approx. 1.5 acres of ground based harvest to cable to avoid equipment stream crossing and harvest within unstable draw area **
11-3	Good	Lower portion of unit-extensive water	Unit size decreased by approx. 1/2 - Lower portion of unit deferred **
11-4	Fair	Localized instability in NW draw	Excluded TPCC-Fragile Restricted from west draw of unit **
15-1	Good	Lower SE portion of unit-extensive water and fragile draws	Unit size decreased by approx. 1/3-Entire lower SE portion of unit deferred
13-1	Good	Fragile draw in NE corner of unit	Unit size decreased by approx. 3 acres-Deferred NE portion of unit
13-2b	Good	Multiple wet meadows and streams found	Changed unit to silviculture understory treatment only, with no extraction- buffered draws & meadows
23-2	Fair	Northeast corner of unit-extensive water	Unit size decreased by approx. 1/4 -Northeast corner of unit deferred
23-5	Fair	instability found along eastern ephemeral draw	Ephemeral draw buffered
27-2	Fair	Lower portion of unit-extensive water found- Fragile soils along mainstem Panther Creek- Headwall found in south of unit above West Fork Cow Creek	Deferred lower 400 ft of unit along Panther Creek and West Fork Cow Creek. Buffered 150 ft around upper perimeter of concave drainage area upslope of headwall- Dropped proposed roadside treatment

* rating based on stream surveyors' professional judgement

** In addition to listed actions, site specific stream, spring, and seep buffers were also applied to all units for protection of water quality within and adjacent to these units.

3.4.2 Environmental Effects on Water Resources and Erosion

3.4.2.1 Alternative 1 (No Action) - Direct and Indirect Effects on Water Resources and Erosion

Under Alternative 1, soil and water resources within this Planning Area would not be impacted by actions associated with this analysis. There would be no increase in the amount of compaction or the number of acres presently experiencing accelerated erosion as a result of this project, because there would be no activities that would result in alterations to the physical, chemical, and biological properties of the soils. Existing compacted acres that are not associated with active road systems would continue to slowly improve over time as tree roots and other natural processes begin to break apart soil particles, eventually resulting in a reduction in compaction on these acres. Watershed processes, such as runoff timing and subsurface flow patterns, would slowly improve on BLM lands in the HUC 6 sub-watersheds in the Farout Planning Area. There would also be no increase in the amount of sediment to stream channels beyond current levels from these watersheds, because there would be no activities occurring that would result in compaction or accelerated erosion. Any landscape alterations that have caused past alterations to the physical, chemical, and biological properties of the soils would remain in their present condition on BLM lands.

Within the HUC 6 sub-watersheds of the Farout Planning Area, there is the Elk Valley Roadway Maintenance Project on BLM lands that would affect soil resources and water quality. This project was analyzed under the Elk Valley Roadway Maintenance Categorical Exclusion (CX) and the decision to implement this project would not be affected by the decision made for the Farout Project. This project will remove vegetation for up to 15 ft from the road centerline (each side) on approximately 25 miles of roadway. It was determined that this action would not result in any measurable impact to water quality because harvesting and brushing equipment for this project is using existing roads during dry conditions, and site specific tree protections were applied to all riparian areas to protect from shade removal and stream sedimentation. For further detail on this analysis, please review the Elk Valley Roadway Maintenance CX and hydrology specialist determination (Ref).

Approximately 60% of the lands within this Planning Area are non-federal lands. Under Alternative 1, actions on non-federal lands would continue to occur as planned.

- Roads

Road acres that are presently visible on the landscape occupy approximately 160 miles or 2.0% of the Planning Area. Research indicates that changes in runoff timing may occur when roads occupy 3-4% of the watershed (WPN, 1999). Road-caused changes in watershed hydrology are generally a result of reduced infiltration on compacted surfaces, more rapid routing of runoff in ditchlines, and the interception of surface and subsurface flows (Ziemer, 1981). As such, it would be expected that localized changes in infiltration and surface and subsurface flows would not be measurably affected within the Planning Area. Roughly 10% of the roads in

this Planning Area appear to have been used and subsequently abandoned. These roads are now in various stages of naturally decompacting and re-vegetating. Given the soil types, and climate of these watersheds, it would be expected that advanced stages of recovery on these roads will take 50-70 years if no further use or decommissioning actions occur (Wert and Thomas, 1981).

Road construction and hauling associated with non-federal timber harvest is currently occurring and would be expected to continue to occur in this Planning Area in the future. Most roads constructed on non-federal lands are not fully decommissioned following use due to future management needs. Construction of roads to access timber lands would be expected to result in a long term increase in watershed compaction that would alter watershed hydrology to various extents dependant on the number and location of constructed roads. Where these roads are hydrologically connected, use would also increase stream sedimentation. Many existing and newly constructed roads used for non-federal timber hauling in this Planning Area have been heavily rocked, reducing the amount of erosion and sedimentation that is associated with wet weather hauling. This type of maintenance activity would be expected to continue on roads needed for future harvest. Maintenance is performed as funding allows, based on Resource Area priority for failure prevention, or as needed for use of commercial product extraction by land owners within or adjacent to the watersheds.

Perched and undersized culverts within draws, combined with naturally erosive soils, will continue to result in stream draw erosion during high flow events. As funding is available for installing downspouts, splash pads, or reinstalling culverts, these problems will be corrected during annual road maintenance actions. Numerous culverts have been replaced in the past 5 years along road systems within the Farout Planning Area, reducing the number of undersized and perched culverts. Where problems associated with accelerated erosion are corrected, aquatic habitat and water quality will likely improve.

Regular passenger and all-terrain vehicle use of these road systems for access to public lands would be expected to continue. Stream sedimentation associated with this road use would continue to occur at current rates on frequently maintained roads, and would slowly increase where road maintenance is irregular due to funding constraints. Currently, aquatic habitat and streambed condition in this Planning Area is in fair to good condition relative to their natural potential. All major tributary and mainstem streams within this Planning Area are still currently rated as “functioning at risk” or “properly functioning” using aquatic habitat rating components (BLM 1999).

- Timber Harvest: Yarding Corridors, Skid Trails, and Landings
Timber harvest on non-federal lands is presently occurring and would be expected to continue to occur in this Planning Area. In the past 5 years, timber harvest on non-federal lands in this Planning Area has been occurring, on average, at a rate of approximately 300 acres per year. This would be expected to result in up to 285 acres (1.5%) of additional compaction and disturbance in this Planning Area in the next five years. This would increase the estimated current acres of disturbance and

compaction from yarding corridors, skid trails, and landings from 1,015 acres (5.1%) to 1,300 acres (6.7%). Increasing the amount of acres subject to reductions in infiltration would not measurably increase the risk of water quality reductions to the Planning Area since the Planning Area is currently on the low end of a “moderate risk” of water quality impacts due to impervious areas⁵ (WPN, 1999).

Where compacted acres from road construction and timber extraction are not associated with actively maintained road systems, soil conditions would continue to improve slowly over time as tree roots and other natural processes begin to break apart soil particles, eventually resulting in a reduction in compaction on these acres. During this period, it would be expected that some areas would experience an increase in erosion due to gullies and rills that form on compacted and unmaintained skid trails. Watershed processes, such as runoff timing and subsurface flow patterns affected by existing compaction, would also slowly improve. These acres would likely reestablish full hydrologic and soil functions within 40-80 years, depending on soil type and condition at the time of harvest (Wert and Thomas, 1981).

- Activity Fuels Treatments

Activity fuels would be treated as part of the Elk Valley Roadway Maintenance project. All harvest slash from this project would be treated by chipping and spreading slash within the Elk Valley Roadway Project Area. These treatments help to reduce the probability of an intense, large scale wildfire occurring by reducing fuel loading and horizontal continuity within the stand, and would not result in offsite erosion or a measurable impact to water quality.

Broadcast burning, pile burning, and other activity fuels treatments would be expected to continue on non-federal lands under the No Action Alternative. These treatments would be required to be done in accordance with Oregon Forest Practices Act requirements. Treatment of activity fuels and site preparation of units will likely result in accelerated erosion, stream sedimentation, and localized chemical alterations to the soil and water. The extent the impact to water quality is not known. However, the magnitude of these impacts would be expected to be equal to or less than those that have occurred during past timber sales and would be expected to be compliant with the Clean Water Act. Since harvest activities have consistently occurred at similar levels in the past, it would be expected that these actions would not substantially alter current aquatic conditions within this Planning Area.

3.4.2.2 Alternative 2 (Proposed Action) - Direct and Indirect Effects on Water Resources and Erosion

The analysis for direct and indirect impacts for the Farout Project was done using the Planning Area scale because the impacts to water quality and erosion would be localized within 25 ft of haul routes and unit boundaries. Providing an analysis at a larger scale would remove all measurable impacts, and eliminate any meaningful discussion of the effects.

⁵ Moderate Risk is between 5-10% of total area.

Management actions proposed under Alternative 2 would result in soil displacement and erosion in the Farout Planning Area. Field surveys were used to identify and defer all areas that have the potential to result in chronic erosion, excessive soil displacement, or landslides. BMPs and PDFs were then identified and incorporated into the Farout Proposed Action to address the remaining general management concerns identified for each soil type in this Planning Area. Following incorporation of these BMPs and PDFs, offsite erosion and stream sedimentation would be limited to during hauling and maintenance activities on roads that are hydrologically connected to streams. Road maintenance (including daylighting) and timber haul on existing roads proposed under Alternative 2 would result in localized stream sedimentation in areas where accelerated erosion would not remain onsite due to ditchline transport and stream crossings. All other road use, temporary route construction and reconstruction (including associated decommissioning), skid trail construction and decommissioning, landing construction and rehabilitation, yarding operations, and activity fuels treatments proposed under this project, would result in accelerated onsite erosion but would be hydrologically disconnected using PDFs, BMPs, or Standard Operating Practices (SOPs), ensuring the protection of all water resources. All other critical environmental elements, related to water resources, not affected by this project are addressed within Appendix 2 of the EA.

- Roads: Temporary Route Construction and Reconstruction

There are approximately 1.5 miles of temporary route construction and 0.2 miles of existing route reconstruction proposed to access harvest areas under the Farout Project. These routes would allow harvest operations using Best Management Practices to occur within portions of units 11-2, 15-1, 21-1, 29-1, 29-2, and 31-5. Construction, reconstruction, and decommissioning of these temporary routes would disturb up to 3.5 acres. Following use these temporary routes constructed and reconstructed would be subsoiled, stabilized, water barred, and barricaded.

All temporary routes proposed for construction and reconstruction have been reviewed in the field. There are three temporary routes proposed for construction to access unit 11-2, totaling approximately 0.5 miles. Also to access this unit there is one road approximately 0.3 miles in length that is proposed for re-opening. All temporary route construction and reconstruction proposed for unit 11-2 are located on the ridge above unit 11-2 and 11-4. None of the proposed construction or reconstruction would cross any dry draws or streams.

Within unit 15-1 there is two temporary routes proposed for construction, and one existing route proposed for reconstruction. These proposed routes are all located on ridges. One temporary route proposed for construction is approximately 0.17 miles in length and is located on the main ridge above unit 15-1. The other temporary route proposed for construction and one existing route proposed for reconstruction is located on a finger ridge in the north portion of unit 15-1. These routes are 0.07 and 0.1 miles in length respectively. None of these proposed routes cross any dry draws or streams.

There are two temporary routes proposed for construction to access unit 21-1. The first is approximately 0.16 miles in length and located on a major ridge above unit 21-1. The other is approximately 0.25 miles in length and is located in the upper portion of unit 21-1 within 550 feet of the ridge. This route terminates on a finger ridge to the south of unit 21-1. Neither of these proposed temporary routes would cross any dry draws or streams.

To access units 29-1 there is approximately 0.12 miles of an existing route proposed for reconstruction. This existing route is located approximately 150 feet from the major ridge above unit 29-1, and terminates on a finger ridge between units 29-1 and 29-2. The temporary route proposed for construction to access unit 29-2 begins at the end of this existing route and is located on both the finger ridge between units and the main ridge above unit 29-2. Neither proposed routes would cross any dry draws or streams.

There are two temporary routes proposed for construction to access unit 31-5. The first begins about 100 ft from the other side of ridge off of existing road 31-8-31.1, then runs along the ridge above unit 31-5. This proposed route would be approximately 0.11 miles in length. The other is a short spur off of this route. It would be approximately 0.02 miles in length and is located within 75 of the ridge. Neither proposed routes would cross any dry draws or streams.

Since all temporary routes proposed for construction and reconstruction would be subsoiled, stabilized, and blocked, and none of these routes would be hydrologically connected to streams. Construction, use, and decommissioning of these proposed routes would result in a short term increase in onsite erosion, but would not result in any change to watershed hydrology or water quality.

- Roads: Timber Haul and Maintenance

A total of approximately 89 miles of roads would be used for haul as part of the Farout Project. Approximately, 61.5 miles of these roads would be used for timber hauling on roads in the Planning Area. Approximately 6.6 miles of the West Fork Cow Creek road within this Planning Area has BST surfacing. This road would be used only for hauling and not receive any maintenance as part of this project. Since hauling on BST surface roads does not contribute to accelerated erosion, use of these roads would not alter water quality. There are approximately 45.6 miles of road that are rocked, and would receive road surface and ditchline maintenance as necessary to protect the integrity and drainage of the roads during use. The remaining 9.3 miles of roads in this Planning Area that would be utilized for haul would be natural surface roads. Approximately 7.6 miles would be existing natural surface roads that would be maintained and used for haul. The remaining 1.7 miles would be newly constructed or reconstructed temporary roads that would be utilized, and then decommissioned. The proposed haul and road maintenance on rocked and natural surface roads would contribute to accelerated erosion within this Planning Area at different levels depending on the moisture levels of the road surface during haul, and the type of maintenance applied. All roads would be maintained as necessary to prevent road

damage, excessive erosion, or exceedance of State turbidity standards for water quality.

Roads identified during field assessments for the Farout Project that were noted as presently having severe drainage problems and subgrade failures result in gullying, potholes, under surface voids, and fill slope failures would be repaired prior to the occurrence of hauling activities. These roads include the 31-9-11.4, 31-9-12.0, 31-9-23.0, and 31-9-25.5. Of these, 3.7 miles are hydrologically connected. As such, repairs on these roads would reduce multiple instances of chronic erosion that is currently ongoing within the Planning Area.

There are approximately 33 miles of rocked roads in this Planning Area are hydrologically connected to streams. All natural surface roads are hydrologically disconnected from streams. Where hydrologically connected rock roads cross intermittent or perennial stream channels, maintenance and hauling activities would result in localized instances of offsite erosion. There are approximately 129 stream crossings located across this Planning Area. Standard maintenance activities on these roads would include periodic instances of roadside brushing, spot rocking, culvert cleaning, surface blading and shaping, and ditchline maintenance. All hauling and maintenance actions on hydrologically connected roads would occur during dry conditions only. This restriction would considerably reduce the amount of erosion that would occur during hauling and maintenance activities on hydrologically connected roads.

There are approximately 27 miles of roads that would be used for hauling outside of the Planning Area. Of these 22.5 miles are BST surfacing and 4.5 are rocked. BST surface roads would be used only for hauling and would receive no ditchline maintenance as part of the Farout Project. Since BST surfacing does not result in accelerated erosion as a result of hauling activities, use this road would not affect water quality. The 4.5 miles of rocked road are hydrologically connected to headwater streams at stream crossings and through ditchlines. Approximately 1.3 miles of the Elk Valley Road (31-8-31) is located outside of the Planning Area, but is hydrologically connected to the Planning Area via tributary streams of the West Fork Cow Creek. This road was recently reshaped and rocked by private industry with clean rock approximately 12 inches in depth, greatly reducing the amount of erosion that would occur. The portion of this road that is located outside of the Planning Area crosses 4 streams. All streams are low flow, first order headwater streams. They are located over 150 feet apart at the road crossing locations, and all are over 800 feet from West Fork Cow Creek. For the Farout Project, haul on this road would be limited to dry condition haul. The other rocked road that is located partially outside the Planning Area is the Slotted Pen Road (32-8-4.0). This road is also hydrologically connected to West Fork Cow Creek via tributary streams of Slotted Pen Creek, which enter into the West Fork Cow Creek downstream of the Planning Area. However since Slotted Pen Creek enters West Fork Cow Creek downstream of the Planning Area, this road would not be hydrologically connected to the Planning Area. The portion of this road located outside the Planning Area runs adjacent to, and crosses

Slotted Pen Creek, before climbing up and over a HUC 7 ridge into the Planning Area. This road crosses 12 tributaries but is well rocked and would only be utilized for hauling during dry conditions. Because these roads are located outside the Planning Area and due to PDF and BMPs the impacts associated with these roads would only occur within 25 ft of where these roads cross tributary streams outside the Planning Area, these roads would not contribute to cumulative effects within the Planning Area.

In addition to general blading, spot rocking, culvert cleaning, and ditchline maintenance activities that would take place, daylighting road maintenance would occur on approximately 10.5 miles of haul roads. ***Within proposed thinning unit boundaries***, all daylighting road maintenance would occur outside of stream EPZs. All stream draws with proposed daylighting road maintenance ***outside of proposed thinning units*** were evaluated by the Glendale RA hydrologist between September and December 2010. The purpose of this evaluation was to assess which trees along proposed roadways would need to be retained for the protection of all aspects of water quality. The goal was to allow some trees in the EPZ to be removed along the road edge where needed to address road maintenance issues, while still providing sufficient protection for no measurable impacts to water quality. Since solar radiation and sediment are the two measures of water quality that could be affected by daylighting road maintenance, if implemented without PDFs, effective shade provided by the tree and the tree's influence on slope stability are the two most critical components in assessing proposed tree removal at stream crossings or in the EPZ of streamside roads. To assess these components the following were considered; tree size, position of tree relative to the sun's path, stream orientation, the distance of the tree from the stream, slope steepness, whether the tree is located in the primary or secondary shade zone, and whether or not the roots of the tree are providing needed cut and fill slope stability in areas that are hydrologically connected via surface flow to the stream. Subsequent to this assessment, the hydrologist marked which trees in the EPZ that could be safely removed without having any measurable direct, indirect, or cumulative impacts to water quality. All areas with trees crossing or parallel to a stream that were determined to be providing water quality protection, were posted and flagged by the hydrologist. Removal of vegetation in these posted areas would be restricted to marked commercial trees, and non-commercial trees and brush within 4 feet of the road or turnouts. In some of these posted areas, no commercial trees were marked for harvest to protect water quality. Outside the designated protection areas for the roadway stream draws, but within the NWFP Riparian Reserve, cutting of vegetation would be limited to 10 ft on either side of the roadway to retain the important microclimate function of the outer Riparian Reserve.

Daylighting road maintenance would result in an increase in the intermittent occurrence of upslope erosion within this Planning Area on up to 80 acres, instead of the 52 acres that would be sporadically affected during typical roadside brushing maintenance. This erosion would remain onsite within the hillslope vegetation, and would only result in a slight impact to water quality where roadside ditches connect cutbank actions to streams. The Proposed Action includes BMPs that would minimize

impacts to water quality and sediment input would not exceed other road maintenance and hauling actions.

All hauling and maintenance activities associated with the Farout Project would be restricted to dry conditions on hydrologically connected roads. As such, sediment entering stream channels at crossing locations on haul roads both within and outside the Planning Area would not be of a magnitude to result in a visible increase in stream turbidity, or a measurable increase in the overall stream sediment deposition for more than 25 ft downstream within any stream channels. Sediment from affected tributary streams would not be of a magnitude to be measurable within any outlet mainstem streams. Any sediment entering streams would be redistributed and immeasurable within all reaches of the channel following the first bankfull event of the winter season. Hauling and road maintenance activities would therefore not exceed State of Oregon water quality standards and would not result in any measurable effects on macroinvertebrate communities or aquatic habitat. This action is also consistent with the standards and guidelines set forth under the 1994 Medford RMP EIS. Although the Proposed Action on BLM land would create a small localized effect to water quality, within 25 ft of haul roads, these sediment inputs are not of a magnitude or close enough in proximity to one another to become detectable at the Planning Area or larger scale.

- Timber Harvest: Yarding Corridors, Skid Trails, and Landings
Timber harvest actions can remove ground litter and topsoil, cause displacement, and compact soils. Where logging operations result in exposed soil, surface erosion can occur when rain splash or overland flow causes the detachment of soil particles during wet conditions (sheet erosion), or when gravitational and wind movement causes detachment of particles during dry weather conditions (dry ravel). These processes typically result in soil being detached uniformly over the entire exposed area (NOAA Tech. Manual, 1996). Vegetative cover reduces the particle detachment rate, and through the binding capacity of root masses, the sediment transport rate (NOAA Tech. Manual, 1996, Larson and Sidle, 1981; Harvey et al. 1994). Therefore surface erosion, from disturbed soils that are not compacted, is normally greatly diminished within 3-5 years, following the re-growth of vegetation. Where soils are compacted, subsurface flow patterns and water infiltration rates are impacted, often resulting in increased surface flows. Where subsurface flows are forced to the surface and contained in low areas on the landscape, new wetlands or seeps can form upslope of compaction. Where increased surface water is confined to the compacted area on slopes, increased runoff often results in gullying and rilling in the unit. If not physically decompacted, compaction of the type of soils found in this watershed can persist on the ground for 50-80 years before natural processes are successful in alleviating the impacts (Wert and Thomas, 1981). Management techniques for this project would be implemented to greatly reduce the amount of compaction and erosion that would occur as a result of timber management. Soils protected by litter are also less prone to erosion (Rothacher and Lopushinsky 1974). Therefore, by limiting the amount of surface disturbance and the amount of exposed soil, surface erosion can be reduced.

Under Alternative 2, the construction, use, and rehabilitation of landings, skid trails, whole tree and cable yarding corridors, and temporary routes would result in up to 55.2 acres of compaction and up to 94.6 acres of accelerated on-site erosion within this Planning Area. There are a total of 735 acres within 38 harvest units that would be thinned under Alternative 2.

Of these units, portions of 12 units occur on soils that have been identified under the Timber Production Capability Classification (TPCC) as needing project design features during harvesting actions (see Section 3.4.1.4 Fragile Soils). Fragile classifications in this Planning Area include Fragile-Slope Gradient-Suitable and Fragile-Groundwater-Suitable. A total of 14.8 acres in portions of units 11-4, 23-1, 23-5, 25-3, 25-5, and the Section 15 roadway unit are classified as Fragile-Slope Gradient-Suitable⁶. These sites are considered suitable for commercial harvest actions but have higher instances of debris type landslides and unacceptable levels of surface erosion that need BMPs/PDFs to provide necessary protection. Special protection measures that would be applied to these units are:

- logging operations would be limited to the dry season (May 15-Oct 15);
- units would be yarded using full or partial suspension
- hand waterbars would be constructed within cable corridors on these units immediately following use on slopes in excess of 65%

Sites classified as Fragile-Groundwater-Suitable contain water at or near the surface for sufficient durations to affect vegetative growth and survival. These sites would be thinned under the Farout Project using special protection measures. Specifically, thinning 14.6 acres in units 7-1, 7-2, 27-3, 27-4, and the roadway units in section 7 and 27 would have the following restrictions due to high ground water levels:

- logging operations would be limited to the dry season (May 15-Oct 15);
- tractor harvest would be limited to the use of existing skid trails; and
- operational skid trails determined to be blocking natural sub-surface or surface drainage would be subsoiled with a winged ripper and waterbarred prior to fall rains (generally Oct 15) to minimize affects to sub-surface water, and soil displacement.

Following harvest activities, subsoiling on existing skid trails would allow for the reestablishment of a hydrologic connection for subsurface flows that are currently rerouted due to existing skid trail compaction from past harvest actions. Reestablishing this connection would reduce existing instances of accelerated surface and streambed erosion. Application of these specific protection measures and Standard Operating Practices would also minimize soil displacement, compaction,

⁶ Unit 27-2 was also originally located partially on Fragile-Slope Gradient-Suitable, however that section of the unit has been deferred for water quality protection (see Table 3-4).

and where hydrologically connected, stream sedimentation that could otherwise be prone at these sites.

Riparian Reserves within the proposed units are dominated by smaller diameter stands of Douglas-fir and some hardwoods. Most riparian stands are lacking large wood debris, downed logs, and large tree structure. Thinning of dense Riparian Reserves would reduce competition on the retained trees for light, nutrients, water and growing space, allowing trees would develop larger canopies, display better vigor and put on diameter growth faster than if left untreated. Canopy closure per stream would average 50% within each unit after the treatment. Production of wood volume is a by-product of this treatment, not a primary objective. These treatments would be specifically designed to promote the development of future large woody debris and multi-story canopies. Despite minor increases in soil disturbance during yarding operations, treatments would improve the overall riparian quality in approximately 20-30 years.

Thinning would occur in portions of the Riparian Reserves of all units in the Farout Project. Outside of EPZs but within Riparian Reserves, thinning would leave a minimum canopy closure of 50% average per unit. In some instances, thinning would require the construction of skid trails and cable yarding corridors within the Riparian Reserve outside of the EPZ. Most units have existing skid trails that would be utilized, instead of new construction, whenever possible. In unit 13-1 an existing skid trail located on the outer portion of the EPZ for approximately 25 ft would be reused to avoid constructing a completely new trail within the Riparian Reserve. Sediment barriers would be installed as necessary within the EPZ to prevent any measurable sediment from entering the adjacent stream during and following use. This entire skid trail would be decommissioned within the EPZ and Riparian Reserve following use, resulting in a long term improvement of current conditions. All thinning within Riparian Reserves would result in ground disturbance during the yarding of material. In units 7-1, 11-4, 23-5, 25-3, 25-5, and 27-3 the TPCC restricted soils, discussed above, occur in Riparian Reserve. Thinning within the Riparian Reserves of these units would be implemented with the same specific protection measures as discussed for the associated unit, but would retain a 50% canopy closure.

In addition, up to 38 landing expansions along roads could occur outside EPZs but within Riparian Reserves in conjunction with continuous landings on roads. Expansion of these landings would not remove ground level vegetation, or result in detrimental soil compaction. To protect streams and wet areas in and adjacent to units proposed for riparian thinning, there would be no landings, skid trails, or yarding corridors constructed in the Ecological Protection Zone (EPZ) portion of the Riparian Reserve, except as noted above in unit 13-1. This would provide protection for all components of water quality, as the EPZ is designed to filter out any accelerated erosion from upslope practices that are implemented using PDFs, BMPs, and SOPs (see discussion of Riparian Thinning and EPZs in Section 2.2.1).

In addition to the specific PDFs/BMPs, discussed above, for implementation on TPCC restricted soils, the amount of onsite erosion within all proposed thinning units would be measurably reduced, and kept within the guidelines of the NWFP and Medford RMP through the use of project wide PDFs and SOPs. These protection measures are designed to reduce the magnitude and total amount of ground disturbance during timber management activities. One of the management practices to be employed on this project is limiting the amount of compaction within a unit to less than 12%, and the amount of combined soil productivity loss from compaction and disturbance to less than 5%. This would reduce the total amount of ground that would experience topsoil loss or detrimental disturbance to less than 15% of the unit, thus minimizing the initial source of erosion from timber harvest activities. Timber yarding would be required to be done using a minimum of partial suspension, limiting the magnitude of the yarding impacts. Furthermore, skid trail construction, timber yarding, and landing construction would all be limited to dry conditions. This would increase the resistance of the soils to disturbance, compaction, and erosion. It would also limit the movement of detached soil particles, allowing them to become trapped within the existing ground cover of the thinning unit instead of entering streams, springs, and seeps.

BMPs would additionally be employed as necessary during timber harvest activities to provide further protection of water resources including streams, springs, and seeps from upslope erosion. For instance, all yarding corridors that are constructed upslope of, or in Riparian Reserves, or upslope of hydrologically connected roads, would be waterbarred prior to rain events. These waterbars would filter surface water runoff from yarding corridors away from stream EPZs and hydrologically connected road ditchlines, and into vegetation that is adequate to slow surface water and allow for deposition of detached soil particles. Silt fencing or other sediment control measures would be in place where hydrologically connected landings are in use during dry conditions of the wet season (October through May) that have the potential to transport erosion and result in stream sedimentation. These PDFs, BMPs, and SOPs would reduce erosion and break the hydrologic connection, keeping erosion from upslope activities onsite, and preventing stream sedimentation during and following implementation of these activities. Accelerated onsite erosion from landings, skid trails, and whole tree yarding corridors would not be expected to be measurable beyond the third year following the implementation of this action due to the considerable amount of remaining ground cover vegetation that would still be present in each unit.

- Activity Fuels Treatments

The need for activity fuel treatments in the unit would be minimized due to whole tree yarding with tree tops attached. Following harvest, slash generated from whole-tree yarding would be piled and burned. Pile and burning would occur on the immediate downhill side of existing roads on up to 180 acres. All impacted acres would be within 50 feet the existing roadway. To limit the extent and magnitude of onsite erosion, and to protect from offsite erosion, landing piles would be placed outside of EPZs and in locations that are not hydrologically connected to the

ditchlines of roads. Due to the implementation of PDFs and the use of EPZs on all streams, any erosion from activity fuel treatments would remain onsite and would have no effect on water quality. Slash remaining in units after yarding would be lopped-and-scattered (See Section 2.3.2.4).

3.4.2.3 Alternative 2 (Proposed Action) - Cumulative Effects on Water Quality and Erosion

In compliance with the 1995 Medford RMP, a cumulative effects analysis for this project was completed at the Planning Area scale which is delineated by drainage and sub-watershed boundaries that encompass the proposed units. The 1995 RMP guidance to “minimize detrimental impacts on water and soil resources resulting from the cumulative impact of land management activities within a watershed” is to delineate watersheds for cumulative effects analyses using natural drainage boundaries and third to fifth order drainages (approximately 500 to 10,000 acres),” (RMP, p.153). Cumulative effects should therefore be written using a watershed delineated boundary that, as defined by acreage and stream order in the 1995 RMP, at the HUC 7 or HUC 6 scale for the Glendale Resource Area. This project includes portions of four HUC 6 sub-watersheds and 2 HUC 5 watersheds, which would be 5-10 times larger than the acres the RMP recommends. As such, the logical boundary for the cumulative effects analysis in this case would be the 19,540 acre HUC 6 sub-watershed delineated Planning Area boundary.

Additionally because ODEQ water quality standards are at the project level, analyzing elements of the environment, such as watershed hydrology and water quality at a larger scale would result in undetectable effects due to the larger flow capacities of these larger stream channels, and different lag-times associated with flow contributions from the various drainages reaching a given location within the mainstem of a stream. As such, information given only at the HUC 5 scale would not provide the decision maker with the best available information in determining whether the effects of this project, when put in context with other activities within these drainages, would exceed ODEQ water quality standards. Aquatic Conservation Strategy (ACS) objectives, which are measured at the HUC 5 scale, are analyzed to ensure the Farout Project would not cumulatively elevate effects occurring in either of the two HUC 5 watersheds to a level that would result in the degradation of aquatic and riparian habitat or species. If there are no detectable effects found to be occurring at the Planning Area scale, then there would also be no detectable effects from this project on aquatic species at the HUC 5 scale.

There are two foreseeable projects within the sub-watersheds that comprise the Farout Project Planning Area: the Elk Valley Roadway Maintenance Project within the Glendale Resource Area of the Medford BLM District, and the potential Camas Valley 2011 Harvest Plan within the South River Resource Area of the Roseburg BLM District. The water quality and erosion cumulative effects from the Elk Valley Roadway Maintenance Project are discussed under the “Timber Haul, Road Use, and Maintenance” subtopic below. The Camas Valley 2011 Harvest Plan may contribute some onsite erosion on federal lands in a portion of the Twelve Miles Creek sub-watershed from logging systems, haul, landing construction or expansion, and road maintenance. The site-specific

proposal for the Camas Valley 2011 Harvest Plan has not been completed thus far, therefore; further environmental analyses for these projects will be considered for the cumulative effects analysis of the Camas Valley 2011 Harvest Plan environmental analysis document. Proposals for these developing projects will be designed to keep turbidity below 10% and would be consistent with the Clean Water Act, State of Oregon water quality standards, and ACS objectives.

- Road Construction

The Farout Project would require the construction of 1.5 miles of temporary routes and 0.2 miles of existing route reconstruction to access proposed units using best management practices. These roads would not result in an increase in road density within this Planning Area because they would all be decommissioned following use. Subsoiling of these roads would eliminate the long term impacts to watershed hydrology but would result in an increase in erosion. All accelerated erosion from the construction use and decommissioning of these temporary routes would remain onsite and would be hydrologically disconnected from all streams and wet areas.

Construction of roads on non-federal lands would be expected to continue as needed for access to non-federal lands. Construction of these roads would be expected to result in long term impacts to watershed hydrology. However the magnitude of this impact is a function of the quantity and location of the roads constructed, which is unknown at this time. Research has indicated that changes in watershed hydrology do not become measurable until road acres occupy at least 3-4% of the watershed (WPN, 1999). To reach the low end of these levels, an additional 70 miles of road would need to be constructed without any decommissioning. Given the extent of the current road network, it is unlikely that this would occur.

- Timber Haul, Road Use, and Maintenance

Timber haul, road use, and road maintenance activities associated with past projects have caused an increase in erosion on all rock and natural surfaced roads in this Planning Area. Where these roads are hydrologically connected, road use and hauling has also resulted in increased sedimentation to streams.

Combined, federal projects would result in hauling on approximately 99.5 miles and maintenance on up to 91.2 miles of roads within this Planning Area. Approximately 61.5 miles of haul and 53.2 miles of maintenance would be associated with the Farout Project, and about 38.0 miles of haul and maintenance would occur in conjunction with the Elk Valley Roadway Maintenance Project. Approximately 83% of the hauling and maintenance for Elk Valley would occur on the same roads as the Farout Project within this Planning Area. Approximately all natural surface roads for both of these projects are hydrologically disconnected from streams. BST surfaced roads do not result in accelerated surface erosion and would not receive only scheduled road or ditchline maintenance. BST roads would therefore not result in impacts to water quality.

Roads identified during field assessments for the Farout Project that were noted as presently having severe drainage problems and subgrade failures that have resulted in gullying, potholes, under surface voids, and fill slope failures would be repaired prior to the occurrence of hauling activities. These roads include the 31-9-11.4, 31-9-12.0, 31-9-23.0, and 31-9-25.5. Of these 3.7 miles are hydrologically connected. As such, repairs on these roads would reduce multiple instances of chronic erosion that is currently ongoing within the Planning Area.

All rocked and natural surface roads would receive road surface and ditchline maintenance as necessary to protect the integrity of the road surface and drainage patterns during use, and as needed to prevent excessive erosion that could result exceeding the state turbidity standards for water quality. Proposed activities along rocked and natural surface roads would contribute to accelerated erosion within this Planning Area at different levels depending on the moisture levels of the road surface during haul, and the type of maintenance needed. The Farout Project and the Elk Valley Roadway Maintenance Project would occur within the same Planning Area, road hauling for both projects would be limited to dry conditions, and would be maintained as needed to protect the road integrity and designed drainage patterns. Hauling and maintenance activities would also be monitored to ensure compliance with the direct and indirect effects stated within this EA, and to ensure compliance with State Water Quality Standards for turbidity. As such, impacts to water quality from hauling and maintenance activities from both projects would not exceed those impacts that have been described for the Farout Project.

Where hydrologically connected roads cross stream channels, in a combined total of approximately 159 locations, maintenance and hauling activities would result in localized instances of offsite erosion. Standard road maintenance activities on these roads would include periodic instances of roadside brushing, spot rocking, culvert cleaning, surface blading and shaping, and ditchline maintenance. All hauling and maintenance actions would occur during dry conditions only. This restriction would considerably reduce the amount of erosion that would occur during hauling and maintenance activities on hydrologically connected roads.

In addition to standard maintenance activities on these roads, there would also be a total of 35.5 miles where roadside daylighting maintenance would be implemented on portions of 40 different roads as part the Farout Project and Elk Valley Roadway Maintenance Project. All roadside daylighting maintenance would occur outside of stream EPZs *where a road overlaps a thinning unit* and have been buffered in the field by a hydrologist to ensure water quality impacts so this maintenance does not exceed that which would occur during typical roadside brushing maintenance. Effects from this action for the Elk Valley Roadway Maintenance Project are similar to those described for the proposed Farout Project (Section 3.4.2.2).

There is no other hauling planned in association with federal projects in this Planning Area. As described in the direct and indirect water and erosion effects analysis in the EA, sediment entering stream channels at crossing locations along haul roads would

not be of a magnitude to result in a visible increase in stream turbidity, or a measurable increase in the overall stream sediment deposition for more than 25 feet downstream within any stream channels. Any sediment entering streams would be redistributed and immeasurable within all reaches of the channel following the first bankfull event of the winter season. Inputs of sediment from all projects combined would not be of the magnitude, or close enough in proximity to one another to become detectable at the Planning Area or larger scale. Hauling and road maintenance activities would not exceed State of Oregon water quality standards and would not result in any measurable effects on macroinvertebrates communities or aquatic habitat. This action is also consistent with the standards and guidelines set forth under the 1994 Medford RMP EIS.

Other ditchline and road surface maintenance in this Planning Area would only occur on federally maintained roads as scheduled under routine maintenance, or as necessary to ensure proper drainage. Where ditchlines are hydrologically connected to streams, ditchline maintenance can result in sediment delivery to streams through the first winter. Best Management Practices would require a sediment filter to be in place prior to stream culverts if ditchline maintenance would result in exceeding water quality standards, or cause an effect to fish habitat. Following the first season, ditchline maintenance results in an overall reduction in chronic erosion of the road surface and where hydrologically connected, subsequent stream sedimentation. Due to the implementation of BMPs, PDFs, and SOPs hauling and road maintenance activities would not exceed State of Oregon water quality standards and would not result in any measurable effects on macroinvertebrates or aquatic habitat.

- Skid Trails, Landings, and Yarding Corridors

Past timber management, landing and road construction, road maintenance, and use are all contributing to soil disturbance and erosion within the Planning Area. Harvest activities using BMPs or PDFs generally only result in onsite erosion on Northwest Forest Plan (NWFP) harvests on federal land. Erosion from upslope activities may be hydrologically connected to streams and would contribute to offsite sedimentation of streams in harvests prior to the implementation of the NWFP or in areas of non-federal harvest, where riparian buffers are absent or limited.

Many of the acres previously disturbed by the construction and use of yarding corridors and landings are no longer visible on the ground and appear to have recovered as a result of the re-growth of vegetation. Within previously harvested units in this Planning Area, evidence of past compaction is still present along many tractor skid trails, and in stream channels intersected or bordered by these trails. Where poorly rehabilitated skid trails, landings, and yarding corridors are hydrologically connected to the streams through road systems, or are adjacent to streams that have little or no riparian buffer, these areas have become sources of stream sediment that are contributing to the current aquatic conditions.

Timber harvest on non-federal lands is presently occurring and would be expected to continue to occur within this Planning Area. In the past 5 years, timber harvest on

non-federal lands within this Planning Area has been occurring, on average, at a rate of approximately 300 acres per year. This would be expected to result in up to 285 acres (1.5%) of additional compaction and disturbance within this Planning Area in the next five years as a result of non-federal harvest. This would increase the estimated current acres of disturbance and compaction from yarding corridors, skid trails, and landings from 1,015 acres (5.1%) to 1,300 acres (6.7%). The implementation of both the Farout Project and the activities associated with the Elk Valley Roadway Maintenance would result in up to 55.2 acres of compaction and up to 180.8 acres of accelerated on-site erosion within this Planning Area. This would result in a total of up to 1,481 acres (7.6%) of disturbance. A portion of the disturbed land would also have detrimental compaction. Even assuming all acres to be compacted, increasing the amount of acres subject to reductions in infiltration will not measurably increase the risk of water quality reductions to the Planning Area since the Planning Area is currently on the low end of a “moderate risk” and would remain within the “moderate risk” range of water quality impacts due to impervious areas⁷ (WPN, 1999).

Where compacted acres from road construction and timber extraction are not associated with actively maintained road systems, soil conditions would continue to improve slowly over time as tree roots and other natural processes begin to break apart soil particles, eventually resulting in a reduction in compaction on these acres. During this period, it would be expected that some areas would experience an increase in erosion due to gullies and rills that form on compacted and unmaintained skid trails. Watershed processes, such as runoff timing and subsurface flow patterns affected by existing compaction, would also slowly improve. These acres would likely reestablish full hydrologic and soil functions within 40-80 years, depending on soil type and condition at the time of harvest (Wert and Thomas, 1981).

Tree removal would occur in Riparian Reserves in both the Elk Valley Roadway Maintenance Project and the Farout Project.

- Riparian Thinning for the Farout Project would occur within Commercial Thinning units, outside the EPZ in selected areas to improve riparian condition (see 2.2.1 Riparian Thinning).
- Daylighting road maintenance for both the Farout project and Elk Valley Roadway Maintenance Project would remove select trees, within 10 feet either side of roads, to facilitate road maintenance activities.
 - Trees selected for removal along roads, for this road maintenance purpose, that overlap Commercial Thinning units are located outside the designated EPZ for the unit.
 - Trees outside Commercial Thinning units were only selected if it was determined that they do not provide primary shade and are not critical for stabilizing the road or slope.

Thinning in the Riparian Reserve would leave a canopy closure of at least 50%. This provides protection for all components of water quality. In addition, up to 38 landing

⁷ Moderate Risk is between 5-10% of total area.

expansions could occur outside the EPZ but within the Riparian Reserve in conjunction with continuous landings on roads. Expansion of these landings would not involve removing the low lying ground vegetation, or result in detrimental compaction. With the exception of one existing skid trail in Farout Project unit 13-1, there would be no landings, skid trails, or yarding corridors constructed within the Ecological Protection Zone (EPZ) to protect streams and wet areas in and adjacent to units proposed for Riparian Reserve thinning. This skid trail extends 25 ft into the EPZ, and is proposed for use rather than building a new trail in the RR. Sediment barriers would be installed as necessary within the EPZ to prevent any measurable sediment from entering the adjacent stream during and following use.

The EPZ is designed to filter out any accelerated erosion from upslope practices that are implemented using PDFs and BMPs (see discussion of Riparian Thinning and EPZs in Section 2.2.1). Thinning in the Riparian Reserves is designed to expedite the development of late successional, multi-story habitat conditions and to restore the species composition and structural diversity of the plant communities, needed to achieve ACS and Riparian Reserve objectives (Medford RMP, pp. 22 & 26).

Both projects would be implemented using BMPs and PDFs that would reduce erosion and break the hydrologic connection between the upland harvest actions and the streams and wet areas. As a result, timber removal under both the Elk Valley Roadway Maintenance Project and the Farout Project would result in a small increase in the upslope onsite erosion but would not contribute to the degradation of streambed conditions or aquatic habitat. There are no other reasonably foreseeable commercial timber management projects proposed in this Planning Area that would affect watershed erosion, at this time.

- Wildfire and Prescribed Fuels Reduction

Minor increases in erosion have occurred as a result of the 6 wildfires, totaling approximately 1.5 acres, that have occurred in the Planning Area in the last 10 years. The extent of offsite erosion from these small fires, though expected to be negligible, has not been measured.

Short term soil erosion has also been affected by activity fuels reduction and handpile and burning projects that were implemented within the past five years. There are approximately 10 acres of hazardous fuel reduction treatments that have occurred on federal lands within the Planning Area in the past five years. Activity fuels treatments on federal ground are done using BMPs that protect from any measurable changes in water quality. Activity fuels treated as part of the Elk Valley Roadway Maintenance Project would be treated by chipping and spreading slash within the Elk Valley Roadway Project Area. These treatments would not result in upslope erosion and would help to reduce the probability of an intense, large scale wildfire occurring by reducing fuel loading and horizontal continuity within the stand. Activity fuel treatments for the Farout Project would be minimized due to whole tree yarding with tree tops attached. Following harvest, slash generated from whole-tree yarding would be piled and burned. Pile and burning would occur on the immediate downhill side of

existing roads on up to 180 acres. All impacted acres would be within the existing roadway. To limit the extent and magnitude of onsite erosion, and to protect from offsite erosion, landing piles would be placed outside of EPZs and in locations that are not hydrologically connected to the ditchlines of roads. Due to the implementation of PDFs and the use of EPZs on all streams, any erosion from activity fuel treatments would remain onsite and would have no effect on water quality.

Broadcast burning, pile burning, and other activity fuels treatments would be expected to continue on non-federal lands. These treatments would be required to be done in accordance with Oregon Forest Practices Act requirements. Treatment of activity fuels and site preparation of units will likely result in accelerated erosion, stream sedimentation, and localized chemical alterations to the soil and water. The extent the impact to water quality is not known. However, the magnitude of these impacts would be expected to be equal to or less than those that have occurred during past timber sales and would be expected to be compliant with the Clean Water Act. Since harvest activities have consistently occurred at similar levels in the past, it would be expected that these actions would not significantly alter current aquatic conditions within this Planning Area.

Activity fuels treatments on non-federal lands are also designed to limit the extent and magnitude of onsite erosion, and to reduce impacts to water quality. These treatments help to reduce the probability of an intense, large scale wildfire occurring by reducing fuel loading and horizontal continuity within the stand.

Because BMPs would be followed on federal lands, and non-federal lands would treat activity fuels in accordance with Oregon Forest Practices Act requirements, short term impacts would be within the scope of the 1994 Medford District EIS.

Water quality in the Planning Area is currently in fair to good condition (BLM, 1999). Sediment from road maintenance and hauling associated with the Farout Project and Elk Valley Roadway Maintenance Project would not result in more than a 10% increase in stream turbidity, and would not measurably increase sediment deposits for more than 25 feet downstream of haul roads. Given the magnitude, dispersed locations, extent, and short term nature of each of the water quality impacts that would occur during these projects, having multiple projects occur within the same watershed during the same time period would not cumulatively change the magnitude of impacts, or the extent that was analyzed for the direct and indirect effects of each individual project. Logically it can be concluded that negligible increases in sediment from these activities would contribute to the overall amount of sediment entering streams from past, present, and future impacts within this sub-watershed, but sediment from these actions would be within ODEQ water quality standards and would not be distinguishable above baseline levels or have any effect on aquatic organisms.

Since implementation of these projects would only result in localized impacts to water quality that would not be distinguishable at the Planning Area or higher scale, actions

within this HUC 5 watershed would be consistent with the Clean Water Act, State of Oregon water quality standards, and ACS objectives.

3.5 Northern Spotted Owl (Threatened) and its Critical Habitat

3.5.1 Affected Environment for Northern Spotted Owl and its Habitat

Under current consultation with the U.S. Fish and Wildlife Service (Medford BLM FY 10-11 BA) impacts from the proposed Farout Project were evaluated at both the local (Farout Project Planning Area) and provincial level (Klamath Province), based upon activities in suitable (nesting, roosting, foraging) and dispersal habitat.

The Planning Area is located within the West Fork Cow Creek and Middle Fork-Coquille Watersheds, which contains a mixture of seral stages, including mature and old-growth forest habitat used by northern spotted owls. The BLM manages approximately 7,877 acres (40%) of the 19,811 acre Project Area.

A large majority of the late-successional habitat in the watershed occurs on BLM lands. It is expected that private timber lands will continue to be cut on a 50-80 year rotation. As a result, northern spotted owl habitat is expected to be limited to federal lands.

Habitat suitability for spotted owls includes a composition of multiple habitat elements such as canopy closure, canopy layering, trees with nesting structure such as platforms and cavities, snags, down wood, flying space, shrubs and forbs ground cover, and prey items. Habitat suitability for each forest stand is determined by field review.

Extensive harvesting on BLM occurred in the Planning Area prior to the 1990 listing of the spotted owl as a threatened species, and the implementation of the NWFP in 1994. The West Fork Cow Creek Watershed Analysis and Upper Middle Coquille Watershed Analysis note late-successional stands in these watersheds are highly fragmented and frequently isolated from other late successional stands because of the checkerboard pattern of federal land ownership and past logging practices. Harvesting on private lands continues to be extensive. Most private land has been intensively harvested, much of it in the last few decades. Approximately 2,500 acres of private land has been intensively harvested in approximately the last 5 years in the Farout Project Planning Area. Other past events, such as quarry development, road building, rock slides, and fire have also contributed to presently unsuitable spotted owl habitat.

One of the functions of Matrix lands is to serve as connectivity between Late Successional Reserves (USDA/USDI. 1994b, p. B-43). One section (T31S-R8W-Section 29) is designated as a Connectivity/Diversity Block within the Matrix land use allocation. Connectivity/Diversity Blocks are generally square-mile sections in which at least 25-30 percent of each block will be maintained in late-successional conditions. They are designed to promote movement of late-successional species across the landscape and add richness and diversity to the land outside Late Successional Reserves (LSRs).

Owl sites found after January 1994 receive no mandatory protection, except for the nest site and seasonal restriction. Demographic data from northern spotted owls in the Klamath Demographic Study Area collected from 1985 – 2003 indicate that populations appear to be stable in the Klamath study area as a result of high survival and number of young produced by territorial females, which were stable over the period of the study (Anthony et al. 2004).

Status and Trend of Northern Spotted Owl Populations

The Bureau of Land Management (BLM), Forest Service (FS), and U.S. Fish and Wildlife Service (USFWS) have conducted a coordinated review of four recently completed reports containing information on the northern spotted owl (NSO). The reviewed reports include the following:

- *Scientific Evaluation of the Status of the Northern Spotted Owl* (Sustainable Ecosystems Institute, Courtney et al. 2004);
- *Status and Trends in Demography of Northern Spotted Owls, 1985-2003* (Anthony et al. 2004);
- *Northern Spotted Owl Five Year Review: Summary and Evaluation* (USFWS 2004); and
- *Northwest Forest Plan – The First Ten Years (1994-2003): Status and trend of northern spotted owl populations and habitat, PNW Station Edit Draft* (Lint 2005).

Anthony et al. (2004, 2006) is the most recent meta-analysis of owl demographic data collected in 14 demographic study areas across the range of the northern spotted owl. Four of the study areas are in western Washington, six are in western Oregon, and four are in northwestern California. Although the agencies anticipated a decline of NSO populations under land and resource management plans during the past decade, the reports identified greater than expected NSO population declines in Washington and northern portions of Oregon, and more stationary populations in southern Oregon and northern California.

Summarizing Anthony et. al., between 1985-2003:

- The northern spotted owl population declined over its entire range, and varied from the most pronounced in Washington (7.3% year per) to the least pronounced in California (2.2%)
- Within Oregon, the northern demographic study areas averaged 4.9% population decline, and the southern study areas decline averaged less than 1% per year and were statistically stable, with a western Oregon average of 2.8% decline per year.
- Range-wide, adult survival rates declined in 5 of 14 study areas (western Washington and northwestern California) and western Oregon was stable in all six study areas.

The reports did not find a direct correlation between habitat conditions and changes in NSO populations, and they were inconclusive as to the cause of the declines. Even though some risk factors had declined (such as habitat loss due to harvesting) other factors had continued such as habitat loss due to wildfire, potential competition with the barred owl, West Nile virus, and sudden oak death (USFWS 2004, Lint 2005). The barred owl is present throughout the range of the spotted owl, so the likelihood of competitive interactions between the species raises concerns as to the future of the spotted owl (Lint 2005). Lint (2005) also found that between 1994-2003, federal lands in the Klamath Province lost 6.6% of spotted owl nesting habitat to stand-replacement fire, mainly to the Biscuit Fire (almost 500,000 acres).

Collected information indicates that encounters between spotted owls and barred owls tend to be agonistic in nature, and that the outcome is unlikely to favor the spotted owl (Courtney et al. 2004). Olson et al. (2005) suggests that further declines in the proportion of sites occupied by northern spotted owls are likely. Olson et al. (2005) showed that barred owl presence had a negative effect on northern spotted owl detection probabilities, and it had either a positive effect on local extinction probabilities (at the territory scale) or a negative effect on colonization probabilities for three study areas in Oregon. Although the barred owl currently constitutes a greater threat to the northern spotted owl than originally thought at the time of the listing (Courtney et al. 2004), at present it is unclear whether forest management influences the outcome of interactions between barred and northern spotted owls (Courtney et al. 2004; summarized by Lint 2005).

The decrease in spotted owl detections since 2002 corresponds to an increase in barred owl presence (Davis et al. 2010; Forsman et al 2009). It has been shown (Bailey et al. 2009, Crozier et al. 2006) that the presence of barred owls negatively affects the detection probabilities of spotted owls. This may account for some of the decrease in spotted owl detections; however, it is quite possible the barred owl is actually having an impact on the population and the population on the Klamath Study Area (KSA) may be experiencing these effects (Davis et al. 2010).

There is mounting evidence that barred owls are having a negative impact on the spotted owl population within the KSA. This is illustrated by several population trends beginning about 2003 which is when barred owl detections at sites within the KSA exceed 10%. Spotted owl detections have been steadily decreasing since 2002 and reached the lowest point in 2009, the same year barred owl detections reached their highest level (Davis et al. 2010).

Barred owls have been detected in the following spotted owl sites: Feathered Elk, Fuzzy Dice, Gold Mountain, Wall Walker and Crafty Dutch. The project area borders the Klamath NSO Demographic Study Area (KSA), where upward trend of spotted owl sites with barred owl detections has occurred. It has been shown (Bailey et al. 2009, Crozier et al. 2006) that the presence of barred owls negatively affects the detection probabilities of spotted owls. Barred Owl presence appeared to have a negative influence on Spotted Owl survival (Anthony et al. 2006). Decrease in spotted owl detections since 2002

corresponds to an increase in barred owl presence (Davis et al. 2010; Forsman et al 2009). This may account for some decrease in spotted owl detections; however, it is quite possible the barred owl is actually having an impact on the spotted owl population and the population on the Klamath Study Area (KSA) may be experiencing these effects (Davis et al. 2010).

The findings by Anthony et al. (2004) are now five years old, and there is a lag time between when a population change occurs and when it statistically is verified. For this reason, the analysis regarding significant population decline, addresses all of western Oregon (BLM 2008c, p.3-298). The role of critical habitat to provide nesting, roosting, foraging, and dispersal would remain unchanged; however, the effectiveness of critical habitat and the rate of population decline beyond the most recent meta-data analysis (Anthony et al. 2004) would be uncertain.

In 2008, the USFWS released a final recovery plan for the northern spotted owl that identified criteria and actions necessary to stop the owl's decline, reduce threats, and return the species to a stable, well distributed population in Washington, Oregon, and California (USFWS 2008b). Facing lawsuits by conservation and timber groups, the Federal government announced it would conduct a thorough review of the Recovery Plan prior to its full implementation. A review is currently being conducted by USFWS and a final recovery plan is anticipated to be completed by the end of 2011.

The recovery plan is not a regulatory document; rather, it provides guidance to bring about recovery and establishes criteria to be used in evaluating when recovery has been achieved. The recovery plan identified the primary threats facing the northern spotted owl and described 34 recovery actions to address these threats.

RA 32 (Spotted owl Recovery Action 32) recommends agencies maintain substantially all of the older and more structurally complex, multilayered conifer forests on federal lands (USFWS 2008b, 34). These forests are characterized as having large diameter trees; high amounts of canopy; multiple layers; and decadence components such as broken-topped live trees, mistletoe, cavities, large snags and large coarse wood. RA 32 forest stands are the highest quality nesting, roosting, and foraging habitat. Field review determined approximately 275 acres in habitat areas ranging from 1 to 50 acres, met RA 32 stand conditions. Maintaining 40% canopy in dispersal habitat and 60% canopy with nesting, roosting and foraging habitat components in treatment areas adjacent the deferred RA 32 habitat maintains the function of substantially older and more structurally complex multi-layered conifer forests on federal lands.

Northern spotted owl suitable habitat includes stands suitable for nesting, roosting, and foraging. There are two categories of suitable habitat. Habitat 1 conifer stands satisfy the daily and annual needs of the owl for nesting, roosting and foraging. These stands generally have a multilayered canopy with large trees in the overstory and an understory of shade tolerant conifers and hardwoods. Canopy closure generally exceeds 60% (Thomas et al. 1990), and average dbh is generally 21 inches or greater. Habitat 2 suitable habitat includes conifer stands which provide roosting and foraging opportunities

but lack the necessary structure for consistent nesting. These stands have less diversity in the vertical structure and canopy closure in unmodified stands generally exceeds 60% and average dbh is 11- 21 inches.

Farout Project units were field-reviewed to determine if they met the definition of suitable habitat. Dispersal (non-suitable) habitat generally includes conifer stands with trees greater than or equal to 11 inches dbh and canopy closure of 40-60%, but may have higher canopy cover and lack other habitat components to adequately support residential occupation, or have lower canopy cover and include habitat components such as understory, down wood, snags, or scattered remnant trees that increases utility.

Scale of Analysis

Spotted owl home ranges that overlap the Farout Project proposed units will be used as the scale of analysis for potential direct, indirect, and cumulative impacts for this project because these are the areas of owl activity that could be affected by the Farout Project and foreseeable projects. There are eleven known spotted owl centers (Fuzzy Dice, Cow Elk, Gold Mountain, Wall Walker, Slotted Cow, Haystack, Crafty Dutch, Snowy Dutchman, and Dutchman Butte, Feathered Elk, and No Sweat) with approximate home ranges (1.3 mile radius) overlapping proposed Farout Project units that are surveyed annually. It is unlikely that more residential sites occur in the Project Area. Haystack was designated as a spotted owl site in 1993 based on a single response and has had inconsistent responses and no nesting or residential status has ever been confirmed for the site. One hundred acre core areas were designated for Wall Walker, Gold Mountain, Cow Elk, Crafty Dutch, Snowy Dutchman, Dutchman Butte and Haystack owl sites under the 1995 RMP and are not modified by the Proposed Action. Seventy-acre nest patches (300 meter radius) have been delineated around these sites (USDA/USDI 2008) and are also excluded from the Proposed Action. Nest Patch area arrangement and nest patch size have been shown to be an important attribute for nest site selection by spotted owls.

Spotted Owl Critical Habitat

Revised 2008 spotted owl Critical Habitat does not occur in the Proposed Action, and therefore is unaffected. Spotted owl Critical Habitat from the 1992 Unit OR-62 and OR-67 is in the Farout Project Planning Area. There are proposed units in CHU OR-62, but not CHU OR-67. There are 320 acres of 1992 Critical Habitat within the Project Area. The 1992 CHU OR-62 was established to provide a link from the Klamath Mountains Province to the Coast Ranges Province, and established the link from those two Provinces through the Rogue-Umpqua portion of the I-5 Area of Concern.

3.5.2 Environmental Effects on Northern Spotted Owl and its Habitat

3.5.2.1 Alternative 1 (No Action) - Direct and Indirect Effects on Spotted Owl and its Habitat

Under the No Action Alternative, no harvest would occur for this project. Wildfire would remain the most immediate hazard to late-successional forest habitat and associated

species (Courtney et al. 2004). Growth of late-successional forest habitat or of young stands toward late-successional forest habitat under this alternative is uncertain. The unthinned second-growth stands with high tree densities may not develop the large crowns and diameters of historical open-grown trees. In southwest Oregon, the reduction in fire frequency has reduced the role of fire as an ecological factor, influencing stand development and altering historic forest structures, processes, and functions. The development of large tree structure comparable to that of remnant trees used by late-successional dependent species would not be likely to occur. This is because current stand conditions are too dense and trees are not developing the diameter to height ratio required to develop this structure. This ratio was historically created through frequent fire events that reduced stem densities and competition that created open grown conditions. Other disturbances, such as insect infestations, diseases, and windthrow, would have historically thinned out stands, created gaps, and created more complex stand structure. Current stand conditions would likely develop into less complex stand structures and species compositions than that of old-growth stands (Sensenig 2002).

BLM standard road maintenance, including activities such as road surface, ditch, road bank and fills, hazardous tree removal, culvert replacement, would occur and not downgrade the spotted owl habitat. Temporary and permanent right-of-way construction would continue on private lands and potentially on BLM consistent with reciprocal right-of-way agreements to allow private harvesting, resulting in the potential for removal of suitable and dispersal habitat.

3.5.2.2 Alternative 2 (Proposed Action) - Direct and Indirect Effects on Spotted Owl and its Habitat

Under the Proposed Action spotted owl habitat would be maintained on approximately 212 acres of nesting, roosting, and foraging (NRF) habitat and 528 acres of dispersal habitat (see Table 2-3 for further details). Temporary route construction and reconstruction (totaling approximately 1.7 miles) would not occur in the core (0.5 mile radius) of any known occupied or historically occupied spotted owl sites.

A Connectivity/Diversity Block occurs in T31S-R8W-Section 29. Unit 29-1 and 29-2 would treat and maintain young second-growth dispersal habitat conditions in approximately 27 acres by maintaining at least 40% canopy and retaining trees with the largest diameters and crowns. Riparian Reserves outside of the EPZ would retain at least 50% canopy, and untreated portions would retain 60% or more canopy closure. EPZs would not be treated for the Farout Project.

Trees removed from approximately 1.5 miles of temporary route construction, 0.22 miles of route reconstruction, and 10.5 miles of daylighting road maintenance, would not cause any measurable change in spotted owl nesting, roosting, foraging, or dispersal use of the landscape due to the narrow linear nature of the tree removal for these proposed activities. Daylighting road maintenance would typically remove a row of 1-2 trees up to 24 inches dbh adjacent to the road where disturbance to late-successional habitat previously occurred during the original construction of these roads. Temporary route

construction and reconstruction would occur on ridgetops and upper slopes in roosting/foraging or dispersal habitat and avoids old-growth stands and lower slopes where habitat use by spotted owls is greatest (Blakesley et. al., 1992; Hershey et al., 1998) and avoids nest patches. Approximately 1.3 of the 1.7 miles of the temporary route construction/reconstruction would occur outside of the heavily used spotted owl core (500 acre) areas. Approximately 0.4 miles of spur temporary route construction and reconstruction would occur, to access unit 29-1 and 29-2, within 0.5 miles of an area designated as a spotted owl site and adjacent to a designated nest patch area. These roads would be decommissioned after thinning and activity fuels are treated. No resident or nesting owls have been located from protocol surveys within the designated owl site; therefore, no impacts would occur to spotted owls. The ridgetop placement of this spur road would occur within low density tree stocking of primarily small diameter trees between a late-successional and mid-successional stand, and minimizes removal of large diameter trees to maintain late-successional habitat. Providing access into units 29-1 and 29-2 would allow for thinning in dense, overstocked young plantations. This spur road placement avoids greater ground disturbance that would otherwise be needed from full-bench road construction to access these units from any other road construction placement.

BLM would maintain the characteristics that classify a stand as NRF or dispersal habitat throughout the treatments for no loss of NRF or dispersal habitat. Treatments would retain the canopy percentages, structural components and species diversity important to owls and their habitat. The age of NRF stands in the Proposed Action vary from 70 to 140 years, and although they contain habitat components to provide roosting and foraging opportunities, and some structure to support nesting use, the general stand ages are young to provide optimal late-successional habitat for spotted owls. The dispersal habitat units vary from approximately 30 to 60 years old.

The function of owl habitat in each unit would be maintained. Nesting, roosting, and foraging habitat would retain at least 60% canopy cover, and when present, a multi-storied, multi-species canopy with large overstory trees, larger trees with various deformities, large snags, accumulations of fallen trees and wood on the ground, and remnant trees or leave trees from previous harvesting would be retained. Dispersal habitat would maintain at least 40% canopy closure. Dispersal habitat provides temporary shelter for northern spotted owl moving through the area between NRF habitat and some opportunity for northern spotted owl to find prey, but does not provide all of the requirements to support an owl throughout its life.

Prey Species

Treatments would sustain the ecological health of the stand and maintain vegetation important to spotted owl prey. Thinning would remove some trees that could be utilized for roosting, perching for hunting, or nest structure support for prey such as red tree voles or flying squirrels. Dominant trees with large crowns and branches which provide the best structure for arboreal mammalian nests, are typically selected for retention.

Treatments that reduce tree density, reduce canopy cover, reduce shrubs and understory

vegetation and open the stand to more light and nutrients would affect different prey species in various ways, depending on the condition of the prey habitat prior to treatment, the prey habitat post treatment, and complex interactions among the prey/predator community. Suzuki and Hayes (2003) evaluated the response of ground-dwelling mammals to Oregon Coast Range forest thinning and found that thinning appeared to increase the abundance of small mammals, and maintains or enhances habitat quality in the long or short term. All species except Western red backed voles exhibited increases over a three year period following heavy and moderate thinning as compared to controls, presumably because these species were responding to the increased forage caused by the additional light in the stand. Habitat for western red backed voles was expected to improve in treated stands over the long term (Suzuki and Hayes 2003).

Arboreal prey species may respond to thinning differently than small ground mammals. Flying squirrels are largely arboreal, moving from tree-to-tree in the canopy. Gomez et. al.(2005) found that thinning in young Douglas-fir stands in the northern coast range did not have measurable short term effects on density, survival or body mass of flying squirrels.

Timber harvest and associated activity fuels treatment may impact foraging by changing habitat conditions for prey. Sakai and Noon (1993) stated that dusky-footed woodrats, the primary prey of owls in our area, may benefit from some thinning or harvest which would increase shrub and pole stands. Bushy-tailed woodrat presence is more dependent on cover and food availability than on seral stage and often use areas previously disturbed by fire (Carey 1991).

Heat and smoke from activity fuels treatments is not expected to change prey population levels. Slash pile burning either has low flame lengths of short duration with heat or smoke that dissipates prior to entering crowns, or piles are burned outside of the crowns of trees to avoid branch and needle scorch of retained trees.

Small openings in the stands would occur where trees are harvested. Prey animals may be more exposed in the disturbed area or may move away from the disturbed area for the next few years. Some minor changes in prey availability may occur as cover is disturbed and animals move around in the understory. They may become more vulnerable and exposed. The disturbance might attract other predators such as other owls, hawks and mammalian predators. This may increase competition for owls in the treatment area, but the exposure of prey may also improve prey availability for northern spotted owls.

Some disturbance from thinning habitat may improve forage conditions where canopy and tree stem density is too high and excludes light and ground cover is sparse. Removal of some tree canopy would bring more light and resources into the stand, stimulating forbs, shrubs and other prey food. Once the initial impact of disturbance recovers (6 months to 2 years), the understory habitat conditions for prey food may increase over the next few years, until tree canopy growth increases the canopy closure and begins excluding light.

3.5.2.3 Alternative 2 (Proposed Action) - Cumulative Effects on Spotted Owl and its Habitat

Cumulative effects to spotted owls result from the incremental impact of the Proposed Action, added to other past, present, and reasonably foreseeable actions regardless of land ownership. The majority of remaining older forest for spotted owls affected by this project is on public lands managed by BLM. Past activities have resulted in habitat loss and have changed the distribution and abundance of many wildlife species. Species associated with younger forested conditions have benefited from these changes. Habitat modification and removal with fewer or lesser protection measures would continue on private, county, or state lands, which negatively affect late-successional dependent wildlife species on these lands.

Extensive harvesting on BLM occurred in the Planning Area prior to the 1990 listing of the spotted owl as a threatened species, and the implementation of the NWFP in 1994. The West Fork Cow Creek Watershed Analysis and Upper Middle Fork Coquille Watershed Analysis note these watersheds have been greatly affected by timber harvest and associated road building. Most of the private lands have been logged, as well as many acres of BLM lands. Logging has also removed and fragmented the older forest habitat. Harvesting on private lands continues to be extensive, an average of 300 acres per year over the past five years.

The 1995 RMP/EIS assumed that in the future nonfederal lands would have no suitable habitat (BLM 1995, p.4-73) due to 50-80 year rotations on private lands, but are expected to provide some dispersal habitat. The cumulative effects are the combination of the Proposed Action (maintaining owl habitat conditions on approximately 740 acres through moderate to light thinning, temporary route construction and reconstruction, road maintenance, and daylighting road maintenance), combined with other recent and foreseeable projects.

The Elk Valley Roadway Maintenance Project occurs within the Farout Project Planning Area and will remove vegetation intermittently along approximately 25 miles of roadway, totaling 74 acres of area previously harvested during the original construction for these roads during the 1960s and 1970s. Treatment includes cutting vegetation greater than 12 inches in height, 10-15 ft from the road center line (each side). The cutting of trees would include trees up to 24 inches diameter at breast height (dbh). Treatment skips and gaps would occur within the treatment due to varying levels landscape topography and vegetative succession along the roadsides, as well as untreated areas for resource protection. Similar treatment is proposed for the Farout Project; however, the distance is 5-20 ft from the road center line (each side). No increase in road density or road use would occur as a result of the Proposed Action. No late-successional habitat would be removed from the project. Spotted owls readily cross roads and occasionally forage along roads when prey is available. Large diameter trees which provide structure for prey such as red tree voles and flying squirrels would be retained.

The Farout Project Planning Area is heavily affected by large-scale fragmentation from past federal and private harvesting, and particularly recent extensive private harvesting (see Section 3.4.1.1). Proposed thinning, and daylighting road maintenance, temporary route construction and reconstruction would not increase late-successional habitat fragmentation for spotted owls. The effects of removal of small diameter trees (< 24 inches dbh) along roads is not expected to measurably affect spotted owl habitat use, occupation, or survivability, which are associated with late-successional and old-growth (nesting, roosting and foraging) habitat.

There are no foreseeable federal activities that would contribute to reduced viability of the owl sites that have home ranges overlapping the Farout Project units. The potential Camas Valley 2011 Harvest Plan, within the South River Resource Area of the Roseburg BLM District, overlaps the Farout Project Planning Area but the 2011 Roseburg Planning Update does not list any of the potential Sections (of Township-Range-Section) for treatment in spotted owl home ranges of the Farout Project units. Therefore, the Camas Valley 2011 Harvest Plan is outside of the analysis area scale (defined in Section 3.5.3) that could affect spotted owls present in proposed Farout Project units. The Roseburg District will complete consultation with the USFWS for the Camas Valley 2011 Harvest Plan to determine effects on owls in its Project Area.

3.5.3 Affected Environment for Northern Spotted Owl Critical Habitat

The Proposed Action does not occur in Revised Critical Habitat (2008; [Federal Register \(73\): 47326-47522](#)), as designated by the U.S. Fish and Wildlife Service (USFWS).

Northern spotted owl Critical Habitat was first designated for the northern spotted owl in January 1992 ([Federal Register \(57\):1796-1838](#)). The scale of analysis for Critical Habitat is at the forest stand level, and within the 1992 Critical Habitat Unit (CHU) #OR-62 in the Medford BLM. Farout Project units 7-1 and 7-2 contain dispersal-only habitat, and occur in the 1992 Critical Habitat Unit (CHU) #OR-62.

Critical habitat, as defined in Section 3 of the Endangered Species Act, is “the specific areas within the geographic area occupied by a species...on which are found those physical or biological features essential to the conservation of the species,” ([Federal Register \(57\):1796-1838](#)). These features are referred to as the primary constituent elements which support the life requisites of nesting, roosting, foraging, and dispersal. As the USFWS noted in its Biological Opinion on the NWFP, for a wide-ranging species such as the spotted owl, each Critical Habitat Unit (CHU) has both a local role and a rangewide role (USDI USFWS 1994, p.20). Impacts from proposed harvest therefore are evaluated based upon removal, downgrading, and degradation of suitable (nesting, roosting, foraging) habitat and dispersal habitat, and are evaluated at both the local level and the provincial level.

The 1992 CHU OR-62 was established to maintain essential nesting, roosting, foraging, and dispersal habitat along with clusters of owls. This 1992 CHU provided the link from the Klamath Mountains Province to the Coast Ranges Province and established the link

from those two Provinces through the Rogue-Umpqua portion of the I-5 Area of Concern. This 1992 CHU was established because of the current habitat conditions, land ownership patterns and past management practices. This 1992 CHU includes not only areas where linkage between physiographic provinces are of concern, but also areas with known owl pairs within a region of relatively low abundance of suitable owl habitat (USDA/USDI 2006-08 BA, App. B). All of the federal acres in this 1992 CHU are managed by the BLM.

3.5.4 Environment Effects on Northern Spotted Owl Critical Habitat

3.5.4.1 Alternative 1 (No Action) - Direct and Indirect Effects on Spotted Owl Critical Habitat

Under the No Action Alternative, no habitat would be treated in the 1992 Critical Habitat Unit.

Growth of dispersal and late-successional and old-growth forest habitat would continue. If harvesting is deferred, older stand development would continue to contribute standing dead and downed wood and maintain high levels of canopy closure. However, stands would likely be reviewed under future actions for harvesting or fuels reduction and would not likely support additional productive owl sites, as overlapping home ranges already occur in the Planning Area. Growth of late-successional forest habitat or of young stands toward late-successional forest habitat under this alternative is uncertain. The unthinned second-growth stands with high tree densities may not develop the large crowns and diameters of historical open-grown trees. Fire hazard would continue to increase and be the highest threat to habitat loss in forest stands where the density of hardwood and conifer stems and fuel ladders is high. Tree mortality in overstocked stands would continue to increase.

Temporary and permanent right-of-way construction would continue on private lands and potentially on BLM consistent with reciprocal right-of-way agreements to allow private harvesting, resulting in potential removal of suitable and dispersal habitat.

Even though some risk factors to habitat use in 1992 CHU have declined (such as habitat loss due to federal harvesting) other factors continue such as habitat loss due to wildfire, increased competition with the barred owl, West Nile virus, and sudden oak death (USFWS 2004, Lint 2005). The barred owl is present throughout the range of the spotted owl, so the likelihood of competitive interactions between the species raises concerns as to the future of the spotted owl (Lint 2005; Anthony et al. 2006). Lint (2005) also found that between 1994-2003, federal lands in the Klamath Province lost 6.6% of spotted owl nesting habitat to stand-replacement fire, mainly to the Biscuit Fire (almost 500,000 acres). However, the findings by Anthony et al. (2004) are now five years old, and there is a lag time between when a population change occurs and when it statistically is verified. For this reason, the analysis regarding significant population decline, addresses all of western Oregon (BLM 2008b, p.3-298). The role of critical habitat to provide nesting, roosting, foraging, and dispersal would remain unchanged; however, the

effectiveness of critical habitat and the rate of population decline beyond the most recent meta-data analysis (Anthony et al. 2004, 2006) would be uncertain.

3.5.4.2 Alternative 2 (Proposed Action) - Direct and Indirect Effects on Spotted Owl Critical Habitat

No direct or indirect effects would occur to the Revised 2008 Critical Habitat.

Approximately 35 acres of dispersal habitat (units 7-1, 7-2) within the 1992 CHU OR-62 would be treated with moderate thinning and retain approximately 40% canopy closure and the primary constituent elements supporting foraging and sheltering. Farout Project units 7-1 and 7-2 would treat and maintain 35 acres (8%) of dispersal-only habitat within a 440 acre stand of contiguous dispersal-capable habitat that is within T31S-R8W-Section 7 and would maintain dispersal function within the stand. Dispersal to other federal forest stands would not be affected. No change to dispersal habitat function would occur within the 5,341 acres of the 1992 CHU on Medford BLM. These units would continue to function as dispersal habitat, providing adequate tree size and canopy closure to provide protection from avian predators and at least minimal foraging opportunities for northern spotted owls moving through the area between NRF habitats, but would not provide all of the requirements to support an owl throughout its life. No change to dispersal function of the 1992 CHU would occur. The reduction of canopy cover in 7-1 and 7-2 could be regained in approximately 15-20 years. No temporary route construction or reconstruction is proposed in critical habitat.

Daylighting road maintenance would remove trees along approximately 2.3 miles of road adjacent to proposed units 7-1 and 7-2 and in T31S-R8W-Section 7. No late-successional habitat would be removed, as this activity would cut trees that have grown in the original right-of-way construction for these roads in the 1960s and 1970s. Removal of trees < 24 inches dbh, 5-20 ft from the road centerline (each side) would typically remove 1-2 rows of trees adjacent to the road, and would not have any measurable effects to dispersal function of forest stands within the 1992 CHU.

3.5.4.3 Alternative 2 (Proposed Action) - Cumulative Effects on Spotted Owl Critical Habitat

No foreseeable federal projects are anticipated to occur in 2008 USFWS designated CHU in the Farout Project Planning Area. Consideration of potential cumulative effects of the Farout Project to 1992 Critical Habitat would be limited to the scale of analysis identified in Section 3.5.1, as this is the area that could affect the primary constituent elements of CHU #OR-62. In the cumulative effects analysis area for the Farout Project, no change to nesting, roosting, and foraging habitat in 1992 CHU is anticipated, and dispersal habitat in this portion of the CHU would retain adequate tree size and canopy closure to provide protection from avian predators. At a minimum, foraging opportunities would be retained with the removal of narrow strips of 1-2 trees (< 24 inches dbh) along treated roads and 40% canopy retention in thinning in units 7-1 and 7-2. There are no foreseeable BLM projects that would downgrade or remove owl habitat in the Farout

Project cumulative effects analysis area of 1992 CHU #OR-62 within the Farout Planning Area. The potential Camas Valley 2011 Harvest Plan within the South River Resource Area of the Roseburg BLM District overlaps the Farout Project Planning Area and the 1992 CHU #OR-62, but the 2011 Roseburg Planning Update does not list any of the potential Sections (of Township-Range-Section) for treatment in spotted owl home ranges of the Farout Project units. The Roseburg District will complete consultation with the USFWS for the Camas Valley 2011 Harvest Plan to determine effects.

Chapter 4.0 List of Preparers

The following individuals participated on the interdisciplinary team or were consulted in the preparation of this EA:

<u>Name</u>	<u>Title</u>	<u>Primary Responsibility</u>
Jim Brimble	Forester	Silviculture, Compaction/Productivity
Jeff Brown	Engineer	Transportation
Michelle Calvert	Ecosystem Planner	Team Leader, NEPA coordinator, writer
Mike Crawford	Fish Biologist	Essential Fish Habitat and Fisheries
Colleen Dulin	Hydrologist	Soils (Erosion), Hydrology
Yanu Gallimore	Fuels Specialist	Fire Risk and Hazard, Air Quality
Merry Haydon	Archaeologist	Cultural Resources
Marlin Pose	Wildlife Biologist	Wildlife, T/E Animals
Sarah Queen-Foster	Forester	Logging Systems
Rachel Showalter	Botanist	Botany, Noxious Weeds, T/E Plants

Chapter 5.0 Public Involvement and Consultation

5.1 Public Scoping and Notification

5.1.1 Public Scoping

Initial contact was made with individuals, groups or agencies that have expressed interest in forest management and other types of projects through quarterly mailings of the *Medford Messenger* publication. A brief description of proposed projects, such as Farout Project, a legal location and general vicinity map are provided along with a comment sheet for public responses. The Farout Project was included in these quarterly publications beginning in the spring of 2010.

Public scoping included a scoping report notice mailed to a standard mailing list of individuals and organizations expressing interest in Glendale Resource Area projects and land owners within a ¼ mile of the Farout Project Planning Area boundary. Public comments were requested from September 15, 2010 to October 15, 2010. The BLM received two comment letters during this portion of scoping.

All substantive comments were responded to in Appendix 3 of the Farout Project EA (DOI-BLM-M080-2010-010-EA). Comments were considered in the development of the project.

5.2 30-Day Public Comment Period

The Farout Project Environmental Assessment (DOI-BLM-M080-2010-010-EA) will be made available for a 30-day public review period. Notification of the comment period will include: the publication of a legal notice in the Daily Courier, newspaper of Grants Pass, Oregon; and a letter will be mailed to those individuals, organizations, and agencies that have requested to be involved in the environmental planning and decision making processes for activities addressed in this EA.

5.3 Consultation

5.3.1 United States Fish and Wildlife Service

Medford BLM submitted a Biological Assessment (Medford BLM FY 10-11 BA) to the Fish and Wildlife Service and received a Letter of Concurrence (MedfordBLM_FY10-11 InformalCons_TAILS#: 13420-2010-I-0025) stating proposed treatments are “not likely to adversely affect the spotted owl”. Although the Proposed Action does not occur in any Revised (2008) Critical Habitat Units, the Service concurred that the proposed treatments within the Biological Assessment “may affect, is not likely to adversely affect spotted owl critical habitat”. The same effects would also apply to spotted owls and the primary constituent elements of critical habitat in the (1992) CHU OR-62. The proposed Farout Project Planning Area does not occur in marbled murrelet critical habitat.

5.3.2 National Marine Fisheries Service (NMFS)

The new temporary route construction, thinning, activity fuels treatments, road maintenance and hauling activities that are proposed within the Umpqua and Rogue Basin and the range of the federally threatened Oregon Coast coho salmon, would have no effect on coho or critical habitat.

Consultation for the Endangered Species Act with NMFS is not needed as the Proposed Action would not affect listed species or their habitat. No consultation is needed under the Magnuson-Stevens Fishery Conservation and Management Act as there is no adverse effect to Essential Fish Habitat for coho and chinook within the Umpqua and Rogue Basin.

5.3.3 State Historical Preservation Office

Required cultural surveys were completed for the Farout Project. The State Historic Preservation Office (SHPO) concurred that the project would have no effect to significant cultural resources referred to as Historic Properties in the National Historic Preservation Act (NHPA).

5.3.4 Native American Tribal Consultation

Farout Project Scoping Reports (September 2010) were sent to local federally recognized Native American Tribes interested in Medford District Bureau of Land Management proposed projects. The Tribes take an active role in the management of their native lands and the BLM works with individual tribal governments to further identify and address Native American concerns and traditional uses of lands administered by the BLM. Phone conversations to these tribes did not identify cultural resource concerns for the proposed project.

APPENDIX 1 - ALTERNATIVE DEVELOPMENT SUMMARY

Farout Project Environmental Assessment
(DOI-BLM-M080-2010-010-EA)

Pursuant to Section 102 (2) (E) of NEPA (National Environmental Policy Act of 1969, as amended), Federal agencies shall “Study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” The CEQ (Council on Environmental Quality) regulations for implementing the procedural provisions of NEPA states, alternatives should be “reasonable” and “provide a clear basis for choice” (40 CFR 1502.14).

In light of the direction contained in both NEPA and the CEQ Regulations, the following questions were used to 1/ identify the alternatives to be analyzed in detail in this environmental assessment that are in addition to the “Proposed Action” and “No Action” alternatives, and 2/ document the rationale for eliminating alternatives from detailed study.

The following addresses the public’s comments on Alternative Uses of Available Resources to the Farout Project. All substantive public comments received on the project and BLM responses can be found in Appendix 3 of this EA.

- 1. Are there any unresolved conflicts concerning alternative uses of available resources? If yes, document and go to Question #2. If no, document rationale and stop evaluation.**

The following is a summary of proposed action requests made in public comments for the Farout Project Scoping Letter (August 2010):

- decommission roads in a Key watershed
- concerned daylighting road activities will increase the equivalent roaded area, increase wildlife habitat fragmentation, and increase the interior forest temperature
- retain large diameter trees, do not thin across all diameter classes
- non-commercial thin Riparian Reserves instead of allowing extraction
- concerned about the economics of the Farout Project
- consider mechanized logging and identify it for potential purchaser bidding
- requests winter harvesting and haul to keep employment going during these months
- requests fuels treatments be less prescriptive and more objective-based

- 2. What alternatives should be considered that would lessen or eliminate the “unresolved conflicts concerning alternative uses of available resources”?**
List alternatives and go to Question #3. If no alternative is identified other than the “no action” alternative, document and stop evaluation.

The land use allocations in the Farout Project are Matrix and Riparian Reserves in O&C lands. One of the primary objectives identified in the RMP is implementing the

O&C Act which requires the Secretary of the Interior to manage O&C lands for permanent forest production in accord with sustained yield principles.

The purpose and need of harvesting in the Farout Project is to produce wood volume at the present time, increase conifer growth rates for wood volume production in the future, and maintain/improve tree vigor of retained conifers and other vegetation while maintaining northern spotted owl habitat.

The above requested actions and concerns are addressed in the Farout Project where they would meet the purpose and need for this project, State water quality standards, and maintain northern spotted owl habitat.

The request to decommission roads would be augmentation of timber receipts.

Since the Farout Project is a timber sale and does not entail the construction of permanent roads decommissioning roads beyond temporary routes would be augmentation of timber receipts. Without specific statutory authority, the bartering of Government property (the value of timber) for services is prohibited because it would result in an unlawful augmentation of an Agency's appropriations. Timber sale contract requirements must enable the harvest of timber and the associated mitigation must be directly related to the harvest of timber related to the individual project. Currently the Glendale Resource Area is conducting a road condition assessment within the Mule Creek area to determine the appropriate management actions, such as standard road maintenance, improvement, and/or closure.

Field stream surveys have been conducted by qualified personnel to establish site specific Ecological Protection Zones per stream (75 to 205 ft from the stream bankfull width (by slope distance) along streams; perennial springs and seeps; and unstable areas within 1 tree length of streams, and perennial springs and seeps to protect stream channel structure and water quality. Specific EPZ distances would protect individual elements of the RR including: streambank stability; shade and temperature; surface erosion of streamside slopes; fluvial erosion of the stream channel; soil productivity; the ability of streams to transmit damage downstream; the role of streams in the distribution of large wood to downstream fish bearing waters; and riparian microclimate. No extraction would occur in the EPZ.

- 3. Of those alternatives identified in Question #2, are there reasonable alternatives for wholly or partially satisfying the need for the Proposed Action? If so, briefly describe alternatives and go to question #4. If no, document rational and stop evaluation.**

The environmental effects of taking no action are analyzed in the Farout Project Environmental Assessment.

- 4. Of those alternatives identified in Question #3, will such alternatives have meaningful differences in environmental effects?**

No.

APPENDIX 2 - ENVIRONMENTAL ELEMENTS

Farout Project Environmental Assessment (DOI-BLM-M080-2010-010-EA)

In accordance with law, regulation, executive order and policy, the interdisciplinary team reviewed the elements of the human environment to determine if they would be affected by the Proposed Action described in Chapter 2 of the EA (environmental assessment). The following three tables summarize the results of that review. Those elements that are determined to be “affected” will define the scope of environmental concern, Chapter 3 of the EA.

Table 1. Supplemental Authorities to be Considered (BLM Handbook 1790-1 Appendix 1). This table lists some of the other authorities that may apply if the Proposed Action (Alternative 2) described in the Environmental Assessment was implemented.		
Critical Element of the Human Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure to describe environmental impacts, and if applicable, design features not already identified in Appendix D of the 1995 RMP to reduce or avoid environmental harm
Air Quality (Clean Air Act)	Not Affected	Prescribed burning would be administered in accordance with the Oregon Smoke Management Plan administered by the Oregon Department of Forestry and the regulations established by the Oregon Department of Environmental Quality. The Planning Area is not located within a Class I designated airshed or non-attainment area. The impact of smoke on air quality is expected to be localized and of short duration. Particulate matter would not be of a magnitude to harm human health, affect the environment, or result in property damage. Dust created from vehicle traffic on gravel or natural-surfaced roads, road work, and logging operations would be localized and of short duration. As such, the Proposed Action is consistent with the provisions of the Federal Clean Air Act.
Areas of Critical Environmental Concern	Not Present	There are no Areas of Critical Environmental Concern located within the Planning Area.
Cultural, Historic, Paleontological	Not Present	Cultural surveys were completed for the Farout Project Planning Area. One historic site was identified within the Project Area. The BLM in consultation with the State Historic Preservation Office (SHPO) evaluates cultural sites to determine if they are significant and qualify for listing in the National Register. Eligible sites and unevaluated sites warrant protection according to Section 106 of the National Historic Preservation Act (NHPA). The historic site was formally evaluated and determined not eligible. According to NHPA, the site does not warrant protection. If cultural resources are found during project implementation, the project would be redesigned to protect the cultural resource values present, or evaluation or mitigation procedures would be implemented based on recommendations from the Resource Area Archaeologist with concurrence from the Field Manager and State Historic Preservation Office.

Table 1. Supplemental Authorities to be Considered (BLM Handbook 1790-1 Appendix 1). This table lists some of the other authorities that may apply if the Proposed Action (Alternative 2) described in the Environmental Assessment was implemented.

Critical Element of the Human Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure to describe environmental impacts, and if applicable, design features not already identified in Appendix D of the 1995 RMP to reduce or avoid environmental harm
Energy (Executive Order 13212)	Not Affected	The Proposed Action would have no effect on energy development, production, supply and/or distribution.
Environmental Justice (Executive Order 12898)	Not Affected	The Proposed Action is not anticipated to have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.
Prime or Unique Farm Lands	Not Present	There are no prime or unique farmlands within the Planning Area.
Flood Plains (Executive Order 11988)	Not Affected	The Proposed Action does not involve occupancy and modification of floodplains, and would not increase the risk of flood loss. As such, the Proposed Action is consistent with Executive Order 11988.
Hazardous or Solid Wastes	Not Affected	There would be no environmental effects associated with this element due to the implementation of the Best Management Practices contained in the Medford RMP and the terms/conditions of the timber sale contract.
Invasive, Nonnative Species (Executive Order 13112)	Not Affected	<p>Units with the Farout Planning Area were surveyed for noxious weeds in the spring of 2010. The Planning Area is known to have noxious weeds along some roadsides. Two populations of <i>Rubus armenicus</i> (Blackberry), 2 populations of <i>Cirsium arvense</i> (Canada thistle), and 31 populations of <i>Senecio jacobaea</i> (<i>Tansy ragwort</i>) and were documented within proposed units.</p> <p>The Medford District RMP states that the objectives for noxious weeds are to “contain and/or reduce noxious weed infestations on BLM-administered land.(p. 92),” and “survey BLM-administered land for noxious weed infestations...(p. 93).” These RMP directions for weed management are intended to be met at a landscape level. In an effort to continue to contain and/or reduce noxious weeds on federal land, the BLM proposed to treat known weed populations within the Glendale Resource Area. In 2010, over 1,000 acres of BLM land in the Glendale RA was treated, including roadsides adjacent to Farout units. Many roadsides within the Farout planning area are scheduled for subsequent treatment in 2011.</p>

Table 1. Supplemental Authorities to be Considered (BLM Handbook 1790-1 Appendix 1). This table lists some of the other authorities that may apply if the Proposed Action (Alternative 2) described in the Environmental Assessment was implemented.

Critical Element of the Human Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure to describe environmental impacts, and if applicable, design features not already identified in Appendix D of the 1995 RMP to reduce or avoid environmental harm
Invasive, Nonnative Species (Executive Order 13112) (continued)	Not Affected	<p>There are three main reasons why potential weed establishment is not expected to result in a detectable effect to overall ecosystem health. First, surveys indicate that a very small percentage - less than 1% of acreage within the Planning Area units - are affected by noxious weeds. Second, these sites located in units proposed for treatment have been reported during predisturbance surveys, and have received weed treatment under Medford District's <i>Integrated Weed Management Plan and Environmental Assessment OR-110-98-14</i>. Third, Project Design Features (PDFs) have been established to minimize the rate at which project activities might potentially spread noxious weed seed from outside/adjacent sources.</p> <p>Seeds are spread by the wind, by animal/avian vectors, natural events, and by human activities - in particular through soil attachment to vehicles. BLM's influence over these causes of the spread of noxious weeds is limited to those caused by human activities. Additional human disturbance and traffic would increase the potential for spreading noxious weed establishment, but regardless of human activity, spread of these weeds would continue through natural forces. Thus, the BLM cannot stop the spread of noxious weeds, it may only reduce the risk or rate of spread. <i>See noxious weed specialist report in Appendix 6.</i></p>
Native American Religious Concerns	Not Affected	Native American groups were contacted and no concerns were identified by these groups.

Table 1. Supplemental Authorities to be Considered (BLM Handbook 1790-1 Appendix 1). This table lists some of the other authorities that may apply if the Proposed Action (Alternative 2) described in the Environmental Assessment was implemented.

Critical Element of the Human Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure to describe environmental impacts, and if applicable, design features not already identified in Appendix D of the 1995 RMP to reduce or avoid environmental harm
T/E (Threatened or Endangered) Fish Species or Habitat	Not Affected (Oregon Coast coho salmon Evolutionarily Significant Unit (ESU))	<p>Salmon are listed under the Endangered Species Act by evolutionarily significant units (ESU). An ESU is a stock of Pacific salmon that is 1) substantially reproductively isolated from other specific populations units; and 2) represents an important component in the evolutionary legacy of the species. The southern most extent of the federally listed threatened Oregon Coast (OC) coho salmon is the Umpqua Basin. A small amount of localized sediment may enter streams during log haul and existing road maintenance where roads are hydrologically connected.</p> <p>OC Coho Salmon are within the West Fork Cow Creek Watershed and Upper Middle Fork Coquille Watershed. Thinning, yarding, landing construction and rehabilitation, temporary route construction and reconstruction (including route decommissioning), road maintenance (including daylighting), hauling, and activity fuel treatments would have no effect on OC coho salmon (ESA-Threatened) and coho critical habitat (CCH). The closest coho presence and CCH in streams of the Farout Project Area is approximately 150 ft from the closest thinning unit. The closest coho presence and CCH in streams of the Farout Project Planning Area is approximately 25 ft way from the closest haul road segment (five total for 267 ft). These five road segments average 53.4 ft in length and represent culverts, bridges, or mainline road segments that cross over coho bearing streams or are in the vicinity of coho bearing streams. With dry condition haul, well vegetated ditch lines, properly functioning cross drains, and existing filter strips, sediment would not be of a magnitude that would result in a measurable increase in the overall stream sediment deposition for more than 25 ft downstream within any of the stream channels. Project activities would follow all provisions of the Clean Water Act (40 CFR Subchapter D) and Department of Environmental Quality's (DEQ's) provisions for maintenance of water quality standards.</p>
T/E (Threatened or Endangered) Plant Species or Habitat	Not Present	<p>Of the four federally listed plants on the Medford District (<i>Fritillaria gentneri</i>, <i>Limnanthes flocossa</i> ssp. <i>grandiflora</i>, <i>Arabis macdonaldiana</i>, and <i>Lomatium cookii</i>) only <i>Fritillaria gentneri</i> has a range and habitat which extends into the Glendale Resource Area. The Farout Project Planning Area resides outside the range of <i>F. gentneri</i>, as determined by the U.S. Fish and Wildlife Service. Vascular plant surveys were conducted in the spring of 2007 and 2008, and no <i>Fritillaria gentneri</i> populations were found. There would be no anticipated effect from the proposed action on any federally listed plant.</p>

Table 1. Supplemental Authorities to be Considered (BLM Handbook 1790-1 Appendix 1). This table lists some of the other authorities that may apply if the Proposed Action (Alternative 2) described in the Environmental Assessment was implemented.

Critical Element of the Human Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure to describe environmental impacts, and if applicable, design features not already identified in Appendix D of the 1995 RMP to reduce or avoid environmental harm
T/E (Threatened or Endangered) Wildlife Species, Habitat and/or Designated Critical Habitat	Affected (spotted owl habitat)	<u>Affected:</u> Alternative 2 would maintain suitable and dispersal habitat for the northern spotted owl (Threatened). No thinning would occur in Recovery Action 32 (RA 32) habitat which is “substantially all of the older and more structurally complex multilayered conifer forests on Federal lands outside of MOCAs [Managed Owl Conservation Areas]” (U.S. Fish and Wildlife Service 2008b, 34). <i>Refer to Section 3.5 of the EA for a discussion of the affected environment and environmental effects of the alternatives related to this element of the environment.</i>
	Affected (1992 NSO critical habitat)	<u>Affected:</u> Alternative 2 would maintain suitable and dispersal habitat in NSO 1992 critical habitat in the Planning Area, including the primary constituent elements that support dispersal. <i>Refer to Section 3.5 of the EA for a discussion of the affected environment and environmental effects of the alternatives related to this element of the environment.</i>
	Not Affected Disturbance-NSO	<u>Not Affected:</u> Logging activities occurring during spotted owl nesting season are not expected to disturb owls because all proper Project Design Criteria distance buffers and timing restrictions during the nesting and fledging periods would be applied to proposed activities
	Not Affected (MAMU, habitat, disturbance)	Marbled murrelets are not known to occur in the Planning Area. Suitable marbled murrelet habitat including old-growth trees with multiple platforms containing moss, lichen or mistletoe (McShane et. al. 2004) may occur up to 10km east of the hemlock zone and the known range (Zone A), which includes the NW portion of the Planning Area. The proposed action would not remove or downgrade suitable murrelet habitat, and does not occur within designated marbled murrelet critical habitat. Suitable habitat may occur adjacent to unit boundaries. Protocol surveys completed in FY10 and applied PDFs minimizes potential disturbance to murrelets in adjacent suitable habitat.

Table 1. Supplemental Authorities to be Considered (BLM Handbook 1790-1 Appendix 1). This table lists some of the other authorities that may apply if the Proposed Action (Alternative 2) described in the Environmental Assessment was implemented.

Critical Element of the Human Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure to describe environmental impacts, and if applicable, design features not already identified in Appendix D of the 1995 RMP to reduce or avoid environmental harm
Water Quality (Surface and Ground)	Not Affected Temperature	Temperature: A total of 7.6 miles of streams in this Planning Area do not meet ODEQ water quality standards for temperature. BLM lands would continue to be managed to attain compliance with state water quality standards and ACS objectives. Streams in this Planning Area are generally well shaded on public lands by both the mid and upper canopy streamside vegetation. Within this Planning Area, the Ecological Protection Zone (EPZ) for Riparian Thinning would maintain stream temperatures by reserving all trees within the primary shade zone, and a majority of the trees within the secondary shade zone (USDA/USDI 2005) from commercial harvest. For daylighting road maintenance, careful tree removal selection at stream crossings and in the EPZ was completed by a BLM hydrologist with consideration of the following factors tree size, position of tree relative to the sun's path, stream orientation, the distance of the tree from the stream, slope steepness, whether the tree is located in the primary or secondary shade zone. This tree selection and application of PDFs would maintain effective stream shade and microclimate function of Riparian Reserves from daylighting road maintenance activities.
	Not Affected Chemical/Nutrient Contamination	Chemical/Nutrient Contamination: No herbicides or pesticides would be used as a part of this project. Hydraulic fluid and fuel lines on heavy mechanized equipment would be in proper working condition in order to minimize potential for leakage into streams. Due to Project Design Features such as no re-fueling of any equipment would occur within 150 ft of streams or stream crossings it would not be expected for the proposed activities to have any effect on chemical contamination of streams or waterbodies. Fuel treatments could increase nitrogen levels within the stream and riparian zone in the short term. These would be highly localized, low level increases and would not be of a magnitude that would have any adverse effect on macroinvertebrate populations which are the most sensitive indicators of water quality conditions.

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Water Quality (Surface and Ground) (continued)	<p>Affected: Sediment/ Turbidity (hauling and road maintenance (including daylighting))</p> <p>Not Affected: Sediment/Turbidity (thinning, yarding, landing construction, temporary route construction and reconstruction (including associated decommissioning), haul, and activity fuels treatments)</p>	<p>Sediment/Turbidity: A small amount of localized sediment may enter streams during hauling and road maintenance where roads are hydrologically connected. These actions would result in measurable increases in sediment for no more than 25 ft downstream of the impact point. Sediment from hauling and maintenance actions would be within the State of Oregon water quality standard of no more than a 10% increase in turbidity. All thinning, yarding, landing construction and rehabilitation, temporary route construction and reconstruction (including associated decommissioning), and activity fuels treatments would not result in measurable inputs of sediment to streams due to project design. <i>See section 3.4: Water Resources and Erosion for a discussion of the affected environment and environmental effects of the alternatives related to this element of the environment.</i></p>
Wetlands (Executive Order 11990)	Not Affected	The Proposed Actions would not result in the destruction, loss or degradation of any wetland. As such, the Proposed Actions are consistent with Executive Order 11990.
Wild and Scenic Rivers	Not Present	There are no eligible, suitable, or designated Wild and Scenic Rivers within the Farout Planning Area.
Wilderness	Not Present	

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Essential Fish Habitat (Magnuson-Stevens Fisheries Conservation and Management Act)		<p>Middle Fork Coquille River, Panther Creek, West Fork Cow Creek, Elk Valley, and East Fork Elk Valley within this Planning Area are designated as EFH (Essential Fish Habitat) under the Magnuson-Stevens Fishery Conservation and Management Act.</p> <p>Thinning, yarding, landing construction and rehabilitation, temporary route construction and reconstruction (including associated decommissioning), road maintenance (including daylighting), hauling, and activity fuel treatments would not adversely affect coho and Chinook salmon Essential Fish Habitat. EFH in the Farout Project Area is approximately 150 ft from the closest thinning unit. The closest EFH in the Farout Project Planning Area is approximately 25 ft way from the closest haul road segment (five total for 267 ft). These five road segments average 53.4 ft in length and represent culverts, bridges, or mainline road segments that cross over coho bearing streams or are in the vicinity of coho bearing streams. With dry condition haul, well vegetated ditch lines, properly functioning cross drains, and existing filter strips, sediment would not be of a magnitude that would result in a measurable increase in the overall stream sediment deposition for more than 25 ft downstream within any of the stream channels. Project actions would follow all provisions of the Clean Water Act (40 CFR Subchapter D) and DEQ’s provisions for maintenance of water quality standards.</p>
Fire Hazard	Affected	<p>Landing piles and hand piles may present a short term increase in fire hazard because they have the potential to produce flame lengths that exceed the fire behavior threshold to the extent of increased spotting distance. <i>Refer to Section 3.2 of the EA for a discussion of the affected environment and environmental effects of the alternatives related to this element of the environment.</i></p>
Fire Risk	Not Affected	<p>Fire risk is the probability of a fire starting, as determined by the presence of ignition sources such as lightning and human activities. New permanent road construction has the potential to increase fire risk because new roads allow for an increase in human presence by providing easier access into previously inaccessible areas. However, there is no new permanent road construction proposed in the Farout Project and the 1.7 miles temporary routes to be constructed and reconstructed would be decommissioned after use.</p>
Recreation	Not Affected	<p>Currently there are no developed BLM recreation sites on public lands in the Farout Project Planning Area. Recreation activities in the Planning Area included driving for pleasure, hiking, camping, hunting, off-highway vehicle use, horseback riding, and bicycling. While there might be increased logging truck traffic during the operational months, this type of activity is typical for the area because of harvesting on private and other government owned lands.</p>

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Rural Interface Areas (RMP, Map 13)	Not Affected	Rural residents abide in the Planning Area would experience short-term noise, dust, and traffic congestion due to logging operations. These types of activities are common because of management practices occurring on private and other public lands. There are no Rural Interface Areas within or immediately adjacent to proposed project units.
Special Areas (not including ACEC)	Not Present	
Special Status Species (not including T/E): Fish Species/Habitat	<p>Not Affected (Oregon Coast steelhead ESU within West Fork Cow Creek and Upper Middle Fork Coquille HUC 5 watershed)</p> <p>Not Present Umpqua chub</p>	<p>On July 26, 2007 a new Special Status Species list went into effect (BLM 2007). This new list has two categories, Sensitive and Strategic. The former categories of Bureau Assessment and Bureau Tracking no longer exist.</p> <p>Fish species are listed as special status species by ESUs. See the “T/E (Threatened or Endangered) Fish Species or Habitat” section above for the definition of ESUs.</p> <p>The thinning, yarding, landing construction and rehabilitation, temporary route construction and reconstruction (associated road decommissioning), road maintenance (including daylighting), hauling, and activity fuel treatments activity would not have any adverse effect on OC Steelhead (ESA-species of Concern). The closest steelhead presence in streams of the Farout Project Planning Area is approximately 25 ft from proposed maintenance and hauling and 150 ft from the closest thinning unit. Sediment resulting from road maintenance, and hauling activity would not be of a magnitude that would result in a measurable increase in the overall stream sediment deposition for more than 25 ft downstream within any of the stream channels. Project actions would follow all provisions of the Clean Water Act (40 CFR Subchapter D) and DEQ’s provisions for maintenance of water quality standards.</p> <p>Umpqua chub are a sensitive species found in Cow Creek. No changes to Umpqua chub would occur because no measurable effects (sediment) would reach Cow Creek. The nearest project activity (road haul) would be over 4.7 streams miles away from Cow Creek.</p>

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Special Status Species, and Survey and Manage (not including T/E): Plant Species/Habitat	Not Present, Not Affected	<p>Bureau Special Status, and Survey and Manage Plants</p> <p>On July 26, 2007 a new Special Status Species list went into effect (BLM 2007). This new list has two categories, Sensitive and Strategic. The former categories of Bureau Assessment and Bureau Tracking no longer exist. Sensitive species require a pre-project clearance and management to prevent them from trending toward federal listing. There is no pre-project clearance or management required for the Strategic Species at the BLM District level, thus Strategic Species will not be analyzed in this document. The new list is effective immediately; however, if pre-project clearances have already been conducted for a project, there are no requirements to conduct pre-project clearances for newly added Bureau Sensitive Species or to address the newly added Bureau Sensitive species in the NEPA document (BLM 2007).</p> <p>In addition to the new Special Status Species policy, Survey and Manage requirements have been re-instated as of December 2009. Surveys were in compliance with the 2001 Survey and Manage protocol, which requires surveys for Category A and C species. Survey and Manage protocol also requires managing known (documented) sites of Category A, B, C, and E species, managing ‘high-priority’ Category D species, and no site management requirement of Category F species.</p> <p>Vascular and nonvascular plant surveys were conducted in the fall of 2009 and the spring of 2010, respectively. Professional botanists surveyed the Planning Area units using intuitive controlled methodology, wherein areas supporting high potential habitat were surveyed more intensively; surveys were also in compliance with the 2001 Survey and Manage protocol, which requires surveys for Category A and C species. Survey and Manage protocol also requires managing known (documented) sites of Category A, B, C, and E species, managing ‘high-priority’ Category D species, and no site management requirement of Category F species. Surveys revealed the following new sites; (1) <i>Illiamna latibractiata</i> (Sensitive), (1) <i>Leptogium teretiusculum</i> (S&M E), and (2) incidental fungi sightings of <i>Phaeocollybia attenuata</i> (S&M D). However, this species would not be affected by the Proposed Action as this site would receive a protection buffer (Section 2.3.2.1).</p>

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Special Status Species, and Survey and Manage (not including T/E): Plant Species/Habitat (continued)	Not Affected	<p>Bureau Special Status, and Survey and Manage Fungi</p> <p><u>Special Status</u> The Project Area was not surveyed for ISSSP Sensitive fungi, as pre-disturbance surveys for Special Status fungi are not practical, nor required per BLM – Information Bulletin No. OR 2004-121, which states “If project surveys for a species were not practical under the Survey and Manage standards and guidelines (most Category B and D species), or a species’ status is undetermined (Category E and F species), then surveys will not be practical or expected to occur under the Special Status/Sensitive Species policies either (USDA/USDI 2004a, p.3).” Current special status fungi were previously in the aforementioned S&M categories which did not consider surveys practical, and are therefore exempt from survey requirements. With the recent instatement the new Interagency Special Status Species policy (ISSSP), 20 species of fungi were designated as Sensitive, 9 of which have been documented on Medford District. As mentioned above, none of these species require surveys.</p> <p>District wide, the Medford BLM has 20 Sensitive (SEN) fungi species; 11 are suspected to occur here, while the remaining 9 have been documented. Of the 9 documented species, only one, <i>Phaeocollybia olivacea</i>, has been found in the Glendale Resource Area, approximately 12.5 air miles away from the Planning Area. Dispersal via spore transport and/or mycelia network is improbable, as this site and the Project Area reside within different HUC 5 watersheds (the site is in Middle Cow Watershed, the Far Out project is in West Fork Cow Watershed) and the two areas are separated by steep ridges and several ravines. There are no sites of this species in the West Fork Cow Creek HUC 5 watershed, where the Farout Planning Area is located.</p> <p>While it is possible that this project is occurring within potential habitat for some species, there is very little information available describing the <i>exact</i> habitat requirements or population biology of these species (USDA/USDI 2004b, p. 148). The 2004 FEIS to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines addresses this type of incomplete and/or unavailable information (p. 108-109). However, the 2004 <i>Record of Decision (ROD) to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines</i>, offers a broad scale prospective of this current situation in stating, “Any discussion of risk based on rarity and likelihood of disturbance must recognize that, for many species, only a small percentage of potential habitat has been surveyed. Reserves have not been surveyed to the same degree as Matrix and Adaptive Management Area land allocations. The Reserves were not surveyed because there has been little management-induced disturbance there.</p>

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Special Status Species, and Survey and Manage (not including T/E): Plant Species/Habitat (continued)	Not Affected	<p>The vast majority of pre-disturbance surveys have been located in the Matrix and Adaptive Management Area land allocation (19% of the Northwest Forest Plan area), so that is where many of the known sites have been found. This does not mean that a disproportionate amount of their habitat is located in Matrix. If these species are truly closely associated with late-successional or old-growth forests, we can reasonably expect that the large amount of federally managed lands in Late-Successional and Riparian Reserves which provide the most amount of this type of habitat (86 percent of currently existing late-successional forests is in reserves) would also provide, at a minimum, its proportionate share of the habitat to support populations of these species (2004 ROD to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines, p.11).”</p> <p>Based on the above information, the likelihood of a Sensitive fungi species in this Project Area is very low; the likelihood of a sensitive fungi occurring within a single unit(s) encompassed in the Project Area is even lower. The likelihood of contributing toward the need to list is not probable.</p> <p><u>Survey and Manage</u> Aside from incidental Survey and Manage fungi sightings, the Project Area was not surveyed for fungi to Survey and Manage protocol standards. For NEPA decisions signed in fiscal year 2011 and beyond for habitat-disturbing activities in old-growth forest, the 2001 S&M ROD (Forest Service and Bureau of Land Management 2001, S&G-9) gives direction to conduct equivalent effort surveys for category B fungi species if strategic surveys have not been completed for the province encompassing the project. The Survey and Manage Standards and Guides defines old growth forest as an ecosystem distinguished by old trees and related structural attributes that are usually at least 180 to 220 years old (USDA/USDI 2001, S&G-79). Strategic surveys have not been completed for category B fungi for the province containing the Farout Project Area, and equivalent effort surveys have not been completed and are not required as units do not exceed 180 years of age.</p>

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Soil Productivity	Affected	Long term soil productivity is the capability of soil to sustain natural growth potential of plants and plant communities over time. The most common types of disturbances effecting soils and associated long term productivity are displacement and compaction. Soil compaction and displacement, which effects growth, is a combined effect which cannot be separated (BLM 1994, Vol. 1, p. 4-13). The unit of measurement for this analysis is based on acre calculations of each unit independently. This unit of measurement and scale was selected for this analysis based on productivity losses of concern being associated with the harvest treatments directly. Compaction/disturbance values for this timber sale would be below the 5% productivity loss per unit and less than 12% compaction/disturbance associated with ground based harvest systems (BLM 1995, p. 166). <i>Refer to Section 3.3 of the EA for a discussion of the affected environment and environmental effects of the alternatives related to this element of the environment.</i>
Vegetation Resources	Affected	Thinning across diameter classes, while maintaining critical owl habitat characteristics, would increase conifer growth rates for wood volume production in the future while maintaining northern spotted owl habitat. Stand densities would be reduced to increase the availability of light, water, nutrients and growing space for selected retained trees. A thin treatment would promote increased stand and tree vigor as well as development of larger crowns on retained trees. Fewer, but larger trees throughout their diameter classes would make up these stands in the long term. <i>See Appendix 4- Silvicultural Prescription for further discussion.</i>
Soil Erodibility	Affected	Tractor and cable yarding corridors, landing construction and rehabilitation, hauling, road maintenance and use, and temporary route construction and reconstruction (including associated route decommissioning) are proposed as part of this action. These activities would result in soil compaction and disturbance that would increase erosion. Compaction would not exceed 12% within any one unit, keeping impacts from compaction within those levels assessed under the 1995 RMP. Offsite erosion and subsequent stream sedimentation is discussed in the Water Quality section of this appendix. <i>See Section 3.4: Water Resources and Erosion for a discussion of the affected environment and environmental effects of the alternatives related to this element of the environment.</i>

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Soil - mass wasting	Not Affected mass wasting	Mass wasting causes increases in erosion that may lead to stream sedimentation, and damages to road systems. The risk of large scale mass wasting within this Planning Area is low, as soils in this region are generally not highly prone to debris flows or other large scale events. Field observations and aerial photos also indicate that in the rare instances when large scale mass wasting has occurred within these sub-watersheds, the events are often a result of poorly placed roadbeds that have been built on very steep slope locations. Small slumps and slides are not uncommon in this Planning Area, and are found throughout this Planning Area, primarily at contact points between different geologic formations, or in association with roads. A geological contact zone and fault line is mapped within unit 10-1. Each unit, including unit 10-1 was closely examined on the ground for any indicators that a unit would be at an increased risk of mass wasting if stand thinning, yarding, temporary route construction, or road reconstruction were to occur. Following an on the ground examination of each unit, it was determined that the risk of mass wasting would not be elevated within any of the final proposed project units.
Visual Resources	Not Affected	The Planning Area and all proposed activities are located in VRM (Visual Resource Management) Class IV category lands. These VRM categories allow for varying amounts of modifications to the existing character of the landscape. The Proposed Action is consistent with these visual resource management objectives as stated in the Medford District Resource Management Plan (page 70).

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Water Resources (not including water quality)	Not Affected	<p>Water quantity can be affected during timber harvest by soil compaction and increased open space. Under the Proposed Action, a total of 55.2 acres may be compacted from skid trails, landings, and temporary route construction. This would result in a net increase in sub-watershed compaction within Poorman Creek-Grave Creek of less than 0.1%. Since these watersheds are currently well below 12% watershed compaction known to result in substantial changes in runoff timing and peak flows, these increases would not be of a magnitude that would result in any measurable change to the watershed hydrology. Within each unit, localized increases in surface flows at the compaction site could occur that would result in an increase in surface erosion. However due to the unaffected soils that would be left on each of these sites, these localized instances of surface erosion would infiltrate back into the unit soils.</p> <p>The Farout Project would not result in the creation of any continuous areas of overstory forest canopy openings that would contribute to open space within any sub-watershed (WPN, 1999). There would be discontinuous areas less than a ½ acre in size cleared for the purpose of creating landings, and for roadway maintenance. Small canopy gaps are not sufficient to measurably alter watershed hydrology. Roadway maintenance would remove individual trees and small pockets of trees to improve road function, safety, and improved maintenance. Outside thinning units, continuous areas of treatment along roadways would be broken up by stream protection areas, and overstory trees in excess of 24 inches. Within thinning units overall canopy closure would remain above 40% and would therefore not contribute to open space (WPN, 1999). As such, the Proposed Action would result in canopy gaps that would not be large enough to result in a measurable effect on watershed hydrology, including no increase in peak flows, base flows, runoff timing, subsurface flow, or water storage. Since watershed hydrology would not be affected this project would not affect municipal or domestic water use or water rights.</p>
Late-Successional Forest	Proposed Action is in compliance with the 15% Standard and Guideline	Federal ownership of late-successional forest is approximately 54% (14,547 acres of 27,176 acres) of federal land in the West Fork Cow Creek watershed (BLM 1997, p.28), and 38% (9,857 acres of 25,965 acres) of federal land in the Middle Fork Coquille watershed (BLM 1999, p.23). The Northwest Forest Plan standards and guidelines state that at least 15% of each fifth field watershed should be managed to retain late-successional patches (ROD, C-44). No regeneration harvesting is proposed and 60% canopy cover, large decadent trees, snags, down wood are retained in NSO habitat suitable for nesting, roosting and foraging. The Proposed Action is in compliance with the 15% Standard and Guideline.

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<p>Migratory Birds Species of Concern (U.S. Fish and Wildlife Service 2008) Bald Eagle (b) Peregrine Falcon (b) Rufous Hummingbird Allen's Hummingbird Olive-sided Flycatcher Willow Flycatcher (c) Horned Lark (<i>strigata</i> ssp.) (a) Oregon Vesper Sparrow (<i>affinis</i> ssp.) Purple Finch 8 (a) ESA candidate, (b) ESA delisted, (c) non-listed subspecies or population of Threatened or Endangered species</p>	<p>Not Affected, at a state or regional scale*</p>	<p>Both the U.S. Fish and Wildlife Service (2002) and Partners in Flight (Altman 1999) consider the state and regional approach a key to the conservation of migratory songbirds. The Birds of Conservation Concern (USFWS 2008a) identifies species, subspecies, and populations of migratory and non-migratory birds in need of additional conservation actions that are deemed to be the highest priority for conservation actions. The BCC 2008 encompasses three distinct geographic scales—North American Bird Conservation Initiative (NABCI) Bird Conservation Regions (BCRs), USFWS Regions, and National—and is primarily derived from assessment scores from three major bird conservation plans: the Partners in Flight North American Landbird Conservation Plan, the United States Shorebird Conservation Plan, and the North American Waterbird Conservation Plan. The Northwest Forest Plan as an effort in the same type of conservation planning process, which approaches management at a regional level. The proposed actions are consistent with the Northwest Forest Plan, which is also designed to provide for the conservation of other forest-related species in the range of the Northern Spotted Owl, such as these birds that may occur.</p> <p>Within the Northwest Forest Plan (24,455,300 federal acres), reserved/withdrawn lands total approximately 78% of the federal land base (USDA/USDI 1994, p. 2-62:65). Not all of the reserves are in or will obtain late-successional forest conditions, but the majority is expected to contribute as suitable habitat towards migratory birds utilizing late successional habitat. In addition, Matrix lands (3,975,300 acres) representing about 16% of the federal land base, contain selected portions of the land managed to retain 15-30% in late-successional forest, which provides additional suitable habitat. <i>See Appendix 8 for Migratory Birds Specialist Report.</i></p>

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Survey and Manage and Special Status Species (not including T/E): Wildlife Species/Habitat	Not Present: Canada lynx, fisher	<p>Threatened species - Lynx: Medford BLM was excluded from the lynx known range due to the absence of lynx habitat characteristics (involving elevation and snow depth) and lack of historic sightings.</p> <p>Candidate species- Fisher: Fishers have not been found in the Glendale Resource Area for successive years by peer-reviewed survey methods. Approximately 70 remote camera surveys were conducted to protocol (Zielinski and Kucera 1995) from 2002-2005, and 20 camera surveys in 2009 in the Glendale Resource Area, with no fisher detections. Fishers have not been observed by BLM field personnel over many successive years of field work within the Resource Area. Although it is possible that fisher may occur or disperse through the Project Area, the absence of detections from surveys indicates use is minimal at best. Fisher would not be affected due to maintenance of large remnant trees, snags, down wood and 60% canopy cover in spotted owl suitable habitat.</p>
	Not Affected: Pond Turtle, foothill-yellow legged frog, fringed myotis	Bureau Sensitive: Pond turtles, and foothill yellow-legged frogs may occur in Panther Creek, Elk Valley Creek, and Hayes Creek. No harvesting occurs within approximately 150 feet of Elk Valley Cr., or within 500 feet of Panther or Hayes Cr. Riparian condition are expected to remain suitable these species with retention of 50-60% canopy cover. The fringed myotis may roost in large decadent trees and snags, which occur in some Proposed Action units and are retained to the extent possible. Some incidental snags may be felled for safety concerns but would not be of the magnitude to affect habitat abundance or distribution.
	Not Present	Bureau Sensitive not expected to be present in Project Area units: Tricolored blackbird, white-tailed kite, streaked horned lark, American peregrine falcon, bald eagle, Lewis' woodpecker, white-headed woodpecker, purple martin, black salamander, Siskiyou Mountains salamander , Oregon spotted frog, pallid bat, Townsend's big-eared bat, Oregon shoulderband snail, Chase sideband snail, travelling sideband snail, Siskiyou hesperian snail, Evening fieldslug, Franklin’s bumblebee, Johnson’s hairstreak, mardon skipper, coronis fritillary, Siskiyou short-horned grasshopper.

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Other wildlife	Not Affected: other species: Red Tree Vole, Goshawk, and great gray owl)	<p>Red Tree Vole (RTV) is not listed as Sensitive or Strategic species for the portion of the range affected by the Planning Area in Final State Director's Special Status Species List (BLM 2008a). Red tree voles are common throughout the Project Area. RTV sites (USDA/USDI 2001) were detected in the Farout Project Area as a result of protocol surveys (BLM 2000a, BLM 2003) completed in November 2010. Surveys were applied to units stands 80 years and older (Pechman, see Chapter 1 of the EA). RTV habitat areas are excluded from the project for nine RTV habitat areas, per Management Recommendations (BLM 2000b) and to provide for the persistence of the species (USDA/USDI 2001): These nests are assumed to be active RTV nests, and suitable RTV habitat was excluded from these units according to the Management Recommendations. Surveys do not detect all nests, and loss of some individuals and nest structures would occur under the Proposed Action. Managing known sites, retaining large dominant trees with full crowns, and maintaining 60% canopy closure in RTV habitat provides habitat for these populations and across the landscape and provide for species persistence (USDA/USDI 2001, Standard and Guidelines, p.4). No foreseeable projects are expected to affect the known sites; therefore, there are no cumulative effects.</p> <p>Goshawks and great gray owls are not listed as Sensitive or Strategic species in Final State Director's Special Status Species List (BLM 2008a) or USFWS Birds of Conservation Concern for BCR 5 (USFWS 2002). There are no known sites within the Proposed Action. Goshawks have been observed in the Project Area and are likely to forage in proposed units. Light to moderate thinning would not reduce habitat suitability or would slightly improve openness for foraging. There is sufficient mix of seral stages including large trees in the Planning Area, and reserved, deferred or withdrawn habitat within Matrix to provide nesting, fledging, and foraging habitat. Viability rating would remain high and unchanged. (USDA/USDI 1994a 3&4 p.179). Great gray owls have not been observed in the Project Area, and proposed treatments would not occur within 200 meters of meadows or agricultural lands where nesting typically occurs. Protocol surveys for great gray owls are two year surveys. The first year survey was completed in fiscal year 2010 and second year survey will be completed in 2011.</p>

Table 2. Other Elements of the Environment. This table lists other elements of the environment which are subject to requirements specified in law, regulation, policy, or management direction and the interdisciplinary team’s predicted environmental impact per element if the Proposed Action (Alternative 2) described in the Environmental Assessment was implemented.

Other Elements of the Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure, and if applicable, design features not already identified in Appendix D of the RMP to reduce or avoid environmental harm
Other wildlife (continued)	Not Affected: other species: (continued) Del Norte salamander, pine mart, and elk)	<p>Del Norte Surveys are not required and there are no known sites in the Farout Project units; therefore, no management is required for species persistence (USDA/USDI 2001 and S&G p.40). They are known to occur in and adjacent to the Farout Planning Area. Although some degradation may occur to suitable habitat within proposed units, PDFs for soil disturbance would generally reduce disturbance to talus areas and salamanders from logging and restrict logging activities during most of the wet season when the salamanders are most active. The Proposed Action would maintain 60% canopy closure over potentially suitable units. The Proposed Action maintains habitat conditions that provide for distribution and persistence. There are no known sites affected; therefore, there are no cumulative effects.</p> <p>Pine marten have been documented in the western sector of the GLRA in high-elevation conifer forest. They are thought to be present in the forested habitats across the lands administered by the Glendale Resource Area. Martens inhabit forested habitats at any elevation and would use openings in forests if there are downed logs to provide cover (Csuti, et al. 1997). They are a forest species capable of tolerating a variety of habitat types if food and cover are adequate. They prefer mature forests that contain large quantities of standing and downed snags and other coarse downed woody material, often near streams. They often use down logs for hunting and nesting. Habitat conditions and possible occurrence would not be affected for these due to maintenance of habitat elements for spotted owl habitat.</p> <p>Elk – The Farout Project Planning Area (PA) contains Elk Management Area (RMP 1995) in T31S-R8W-Sections 7, 17, 19, 20, 29, 31. The entire RMP designated Elk Management Area (EMA) is 54,030 acre (42,520 BLM acres) (RMP Map 7). Elk in the PA are most likely to utilize the main drainages of Panther Creek and Elk Valley Creek. No meadows occur in the proposed units. Such habitat provides a continual source of high quality forage. Elk are often observed near recent harvested areas that are currently providing forage. Forage quality is the major limiting habitat factor for elk (PRMP EIS 4-61). The proposed units do not qualify as a continual source of high quality forage, such as meadows. Cover would remain high (>60% in units greater than 80 years old). There would be no change to the open road density as no permanent construction is proposed. Forage habitat condition would function within marginal conditions in proposed thinning units, similarly as in the No Action Alternative. Elk population levels are expected to continue to be moderate within the PA due to meadows/ grassland on private, and the recent (5 years) intensive harvesting on private land, providing a temporary increase of forage for the next 5 -15 years. The elk population within the Elk Management Area are expected to be stable or declining slightly (USDI BLM 1994 PRMP 4-61).</p>

Table 2. Other Elements of the Environment. This table lists other elements of the environment which are subject to requirements specified in law, regulation, policy, or management direction and the interdisciplinary team’s predicted environmental impact per element if the Proposed Action (Alternative 2) described in the Environmental Assessment was implemented.

Other Elements of the Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure, and if applicable, design features not already identified in Appendix D of the RMP to reduce or avoid environmental harm
Port-Orford-cedar	Not Affected	Project is within natural range of Port-Orford-cedar (POC). A POC Risk Key Analysis was completed. No management specific to POC and POC root disease (<i>Phytophthora lateralis</i>) is required. The Proposed Action is consistent with management direction in the Port-Orford-cedar EIS (See POC Risk Key in Appendix 10).

APPENDIX 3 - RESPONSE TO COMMENTS ON THE FAROUT PROJECT ENVIRONMENTAL ASSESSMENT

(DOI-BLM-M080-2010-010-EA)

The Farout Project Scoping Report (September 2010) was released for 30-day public scoping comment period. Two comment letters were received. Areas of concern or requests for alternative development regard protection and analysis of: soils, water resources, and aquatic species; retention of large and mature trees for associated species; and wildlife habitat fragmentation.

Comments were considered in the development of the Farout Project. BLM responses to substantive comments identified during scoping are presented in this Appendix of the EA.

Substantive comments do one or more of the following (BLM Manual, National Environmental Policy Handbook, 1/30/2008):

- question, with reasonable basis, the accuracy of information
- question, with reasonable basis, the adequacy of, methodology for, or assumptions used for the environmental analysis
- present new information relevant to the analysis
- present reasonable alternatives
- cause changes or revisions in one or more alternative

Comments that are not considered substantive include the following:

- comments in favor of or against the proposed action or alternatives without reasoning that meet the criteria listed above (such as “we disagree with Alternative Two and believe the BLM should select Alternative Three).
- comments that only agree or disagree with BLM policy or resource decisions without justification or supporting data that meet the criteria listed above (such as “more grazing should be permitted”).
- comments that don’t pertain to the Project Area or the project (such as “the government should eliminate all dams,” when the project is about a grazing permit).
- comments that take the form of vague, open-ended questions.

If a number of comments are identical or very similar, agencies may group comments and prepare a single answer for each group. Depending on the volume of comments received, responses may be made individually to each substantive comment or similar comments may be combined and a single response made. The Code of Federal Regulations (40 CFR §1503.4) identifies five possible types of responses for use with environmental impact statements.

1. Modify action alternatives.
2. Develop and evaluate alternatives not previously given serious consideration by the agency.
3. Supplement, improve or modify the analysis.
4. Make factual corrections.
5. Explain why the comments do not warrant further agency response, citing the sources, authorities or reasons which support the agency's position and, if appropriate, indicate those circumstances which would trigger agency reappraisal or further response.

Klamath-Siskiyou Wildlands Center

Comment 1: Requests the Farout Project retain large diameter trees where they exist rather than thin “across all diameter classes” to benefit the northern spotted owl habitat function (primary constituent element) and since cumulative logging on private and BLM managed land has dramatically reduced the large-tree component of the Key Watershed present in the Planning Area. States crowns of large trees help moderate peak flow events via canopy cover. States large live trees are the only source of future large down wood, which helps to filter and moderate water flow throughout the year. States the Thom Seider FEIS (page 343) of the U.S. Forest Service (Klamath National Forest) and the U.S. Environmental Protection Agency acknowledge that the diameter of conifer trees acts as a “measure of resistance to fire.” Hence the forest resiliency goals of the Far Out project may be best met by retaining such trees where they still exist in the watershed.

BLM Response: The purpose and need of the “...Farout Project is to produce wood volume at the present time, increase conifer growth rates for wood volume production in the future, and maintain/improve tree vigor of retained conifers and other vegetation **while maintaining northern spotted owl habitat.**” The Silvicultural Prescription (Appendix 4) describes the treatment objectives of the Project as, “A thinning treatment [that] would promote increased tree size and vigor as well as the **development of larger crowns on retained trees.**” In all stand categories proposed for thinning (younger and older stands, previously entered and unentered stands), thinning would occur from below and would generally retain dominant and selected co-dominate trees. See Chapter 3, Section 3.5.2.2 for further details on the effects of the Proposed Action on maintaining the function of spotted owl habitat and its primary constituent elements. Also see Section 3.5.2.1 of Chapter 3 (No Action Alternative) regarding current dense, suppressed stand conditions and the evaluation of the stands ability to develop spotted owl structure including large canopies should the Farout Project not proceed.

Regarding large woody debris, one of the objectives of the Farout Project is to “[a]pply thinning and other silvicultural treatments to promote the development of large trees for an eventual source of large woody debris to stream channels.” Riparian thinning would be proposed where Riparian Reserves contain dense stands and would benefit from thinning to reduce competition for light, nutrients, water, and

growing space for retained trees with a result to produce larger canopy develop, improved vigor, and accelerated diameter growth. These treatments would be specifically designed to promote the development of future large woody debris and multi-story canopies.

Concerning peak flow, the Proposed Action would not measurably change watershed hydrology. See Appendix 2 (p. 104) for further details regarding peak flows. The watersheds in the Farout Project Planning Area are well below 12% watershed compaction threshold, which is the percentage known to begin to result in substantial changes in runoff timing and peak flows.

To clarify the goals of the Farout Project, it is not a fire resiliency project. The Glendale Resource Area is considering high priority forest management treatments to create fire resilient landscapes through a separate developing project called the “Fire Resiliency Project”. The purpose and need for the Farout Project is stated at the beginning of this response. Fuels treatments for the Farout Project is limited to activity fuels (See Chapter 2, Section 2.2 and Chapter 3, Section 3.2).

Comment 2: Requests the findings and recommendations of the West Fork Cow Creek Watershed Analysis be followed that indicate high road densities in the Planning Area’s Key Watershed be reduced in the Farout Project EA. KS Wild is concerned the proposed road construction, landing construction, yarding and daylighting activities will increase the “equivalent roaded area” (ERA) in the short and long term.

BLM Response: The Farout Project EA acknowledges the West Fork Cow Creek watershed as a Tier 1 Key Watershed, which was designated to “contribute directly to conservation of at-risk anadromous salmonids, bull trout, and resident fish species” (RMP, p.22). The 1.5 miles of temporary route construction and 0.2 miles of existing route reconstruction to access proposed units, would not result in an increase in road density in this watershed because they would all be decommissioned following use. These roads would not lead to stream sedimentation due to their ridgetop location which are hydrologically disconnected.

The proposed daylighting road maintenance activities would limit treatment within the original road right-of-way clearing width and would not alter drainage patterns since this treatment would not contribute to soil compaction since extraction would occur from existing roads. See Chapter 3, Section 3.4.2 and Appendix 2 (Water Resources, p.104) for further details on the effects of this activity on water resources and erosion.

The Glendale Resource Area does not use Equivalent Roaded Area to determine changes in flow or sediment yields. There are “two major limitations with this approach” identified by the U.S. Forest Service stating,“(1) it does not clearly indicate whether changes in flow or changes in sediment yields are being assessed;

and (2) it is not spatially explicit (e.g., the effect of an activity does not vary with its location in the watershed).

Comment 3:

*The amount of existing system and nonsystem roads within key watersheds should be reduced through decommissioning of roads. Road closures with gates or barriers do not qualify as decommissioning or a reduction in road mileage. If funding is insufficient to implement reductions, there will be no net increase in the amount of roads in Key Watersheds.
ROD at B-19*

Requests the BLM to implement the ACS of the Northwest Forest Plan and the findings and recommendations of the BLM's Watershed Analysis by:

- Avoiding and deferring new road construction;
- Avoiding and deferring road daylighting;
- Minimizing new landing construction; and
- Decommissioning unneeded roads in the Key Watershed

The commenter attached a recent 9th Circuit opinion regarding culverts and ditches and point source pollution under the Clean Water Act. KS Wild states a permit may be required for the proposed road construction in this project.

BLM Response: See response to Comment 2 above regarding no net increase in roads proposed for the Farout Project.

See Chapter 2, Sections 2.3.2.2 and 2.3.2.3, and Appendix 9 for the specifics regarding the project's design and Best Management Practices to be applied to minimize sediment entering streams by hydrologically disconnecting proposed activities or avoiding hydrologically connected actions such as constructing temporary route spurs on ridgelines, and applying the following prior to winter rains: rehabilitation activities, water bars, berms, sediment basins, gravel pads, hay bales, small dense woody debris, seeding, and mulching.

See Appendix 5 for the Aquatic Conservation Strategy analysis for the Farout Project.

Comment 4: KS Wild is not convinced that the ACS allows for logging and yarding activities in mature and late-successional Riparian Reserve (RR) forests. KS Wild suggests non-commercial hand thinning activities to achieve the objectives for RRs by avoiding the creation of skid trails and yarding corridors.

Requests the following: (1) explicit description on how timber would be yarded in RRs; (2) limit yarding, when possible, to previously disturbed sites; (3) identify the location and width of yarding corridors and skid trails; (4) analyze the impacts of the yarding and tree removal in yarding corridors; and (5) do not locate yarding corridors where they would be hydrologically connected to waterbodies.

Other Glendale Resource Area timber sales located within Riparian Reserves (such as Wolf Pup) have called for “openings” (canopy removal) within these reserves. Such patch cuts in this protected land use allocation violate both the Northwest Forest Plan and the Medford RMP. Please truly focus thinning in riparian reserves on small-diameter understory and density reduction of young managed stands.

BLM Response: Riparian Reserve stands currently exhibiting late-successional stand characteristics would not be entered for treatment.

See Appendix 9 for minimizing yarding corridors and skid trails in the RR. There are no patch cuts proposed in Riparian Reserves for the Farout Project. The “canopy gaps” mentioned in the Wolf Pup Project 2008 Scoping Report was revised in May 2009, which clarified that there would be no patch cuts in Riparian Reserves. For the Farout Project incidental gaps in the canopy for Riparian Thinning would promote the development of multiple canopy layers and to promote species diversity, key characteristics of older forest stands. An example of an incidental gap would be small gaps created when selecting trees for thinning such as two trees growing close together may be removed. Treatments within the Riparian Reserve that are outside the variable width ecological protection zone would retain a canopy closure of 50% or greater.

Comment 5: KS Wild is concerned daylighting road maintenance would cause further habitat fragmentation, hydrological effects (peak flow response), and changes to interior forest temperature already caused by the existing system of logging roads. KS Wild requests no clearing large swaths adjacent to roads in the project area.

KS Wild states a 20 ft clearing on either side of the road, would result in the wildlife habitat fragmentation and hydrologically unrecovered width of the road disturbance increased by 40 ft, which they believe to be a significant increase in road disturbance.

“A number of federal land management districts include a Project Design Feature or Best Management Practice in their vegetation management projects that require the retention of vegetative cover on cut banks and fill slopes to reduce erosion and sediment produced by logging roads. Daylighting would have the exact opposite effect.”

BLM Response: See Chapter 3, Section 3.5.2.2 “...daylighting road maintenance, would not cause any measurable change in spotted owl nesting, roosting, foraging, or dispersal use of the landscape due to the narrow linear nature of the tree removal for these proposed activities. Daylighting road maintenance would typically remove a row of 1-2 trees up to 24 inches dbh adjacent to the road where disturbance to late-successional habitat previously occurred during the original construction of these roads.”

No late-successional habitat would be removed, and therefore the Farout Project avoids fragmentation of late successional habitat. The area adjacent to the proposed daylighting road maintenance was previously disturbed during initial road construction, therefore this activity does not cause further fragmentation.

See Appendix 2 (Water Resources, p.104), regarding proposed daylighting on peak flows, and other hydrologic effects. Daylighting would retain vegetation 1 ft in height on the cut banks and fill slopes within this type of treatment to reduce erosion and sediment. Additionally, within Riparian Reserves 6 of the 10 ft (horizontal slope distance) to be treated on each side of the road would retain the understory vegetation to retain shade.

American Forest Resource Council

Comment 6: AFRC is concerned about the economics of this sale. Requests as much larger wood as possible be harvested, while still meeting the objectives of the sale, to assist in the economic feasibility of logging the sale. States 4-8 mmbf/acre is difficult to log economically and requests some of the larger distressed dominants and co-dominants be removed.

BLM Response: Though the silvicultural prescription for Farout is to thin from below and generally retain the dominants and selected co-dominates. Some dominants and co-dominants may be removed to meet forest health objectives. Trees with 35-45%⁺ live crown ratios would be favored for retention. Some cull trees would also be retained (<5% of total retained). See Appendix 4 for further details on the silvicultural prescription. All proposed treatments would retain spotted owl habitat as stated in the Purpose and Need statement for this project Chapter 1).

Comment 7: AFRC supports the need for road construction and maintenance for future fuel reduction treatments and the ability to respond to potential wildfires. Temporary routes can be decommissioned.

BLM Response: Access construction for Farout would be limited to temporary route construction that would decommissioned after harvesting and activity fuels are treated.

Comment 8: Request the BLM consider mechanical harvesting and pre-bunching of processed logs where possible (slopes less than 45%) on ground based, skyline, and helicopter units to make all phases of the timber sale more economical and to treat slash at the same time. Requests these units be identified in the Prospectus so potential purchasers can bid accordingly.

BLM Response: There is no helicopter logging proposed for the Farout Project. Mechanical harvesting was analyzed for all areas proposed for tractor yarding. See Chapter 2, Sections 2.3.2.2 and 2.3.2.3 for further details.

Comment 9: Comments suggests BLM consider winter harvesting on improved roads or allow for roads and spurs to be improved so winter harvesting can be accomplished. "...loggers need winter work and the mills generally need winter wood, this is a big bidding issue for a purchaser."

BLM Response: Some logging operations and haul may occur during the winter months during dry conditions. See Chapter 2, Sections 2.3.2.2 and 2.3.2.3 to protect water quality.

Comment 10: "For fuel treatments, AFRC would like to see the BLM have some flexibility. Rather than specifying a specific method of accomplishing your resource objectives, you should instead identify the objectives you are trying to accomplish and any limitations to resource disturbance you require. The purchaser could then identify the method they would like to implement to meet the resource objectives given their particular employee/equipment mix. By doing this, the purchasers' can maximize their efficiencies' which will translate into higher bid rates and higher returns to the government. In the case of hand piling, the resource objective might be to reduce the amount of 1-20 hour fuels to XX tons per acre while not increasing soil compaction on more than XX percent of the unit by more than XX and not damaging more than XX% of the leave trees. The purchaser could then determine the most cost effective method to accomplish the resource objectives thereby maximizing the retained receipts that could be used for other restoration activities."

BLM Response: See Chapter 2, Section 2.3.2.4 regarding the objectives and parameters for determining which type of treatment would be applied to differing levels of activity fuels, such as providing a discontinuous pattern of fuels across the forest floor and reducing activity fuels along roadsides.

APPENDIX 4 - SILVICULTURE PRESCRIPTION

Introduction

The Farout Project proposes commercial thinning of 38 units (735 acres) and non-commercial density management treatment of 1 unit (10 acres) within the Gold Mountain, Elk Valley and Twelve Miles Creek sub-watersheds. Stands in this planning area can be classified as mixed conifer and generally fall into the following plant series: Douglas-fir, Tanoak, and Western Hemlock. The primary conifer species in the project area is Douglas-fir with lesser percentages of true fir, western hemlock, western red cedar, Port-Orford-cedar, incense cedar, ponderosa pine, and sugar pine. Hardwood and shrub species include, but are not limited to: Pacific madrone, California black oak, tanoak, canyon live oak, Oregon white oak, manzanita, ceanothus spp., poison oak, and California hazel.

OBJECTIVES

Land Use Allocation Objectives:

Lands proposed for treatment within the Project Area are allocated to Matrix (including Connectivity/ Diversity Blocks) and Riparian Reserves.

Matrix Lands: Objectives of Matrix lands include the following:

- Produce a sustainable supply of timber and other forest commodities to provide jobs and contribute to community stability.
- Provide connectivity between Late-Successional Reserves.
- Provide habitat for a variety of organisms associated with both late-successional and younger forests.
- Provide for important ecological functions such as dispersal of organisms, carryover of some species from one stand to the next, and maintenance of ecologically valuable structural components such as down logs, snags, and large trees.
- Provide early-successional habitat.

Riparian Reserves: Objectives of this land allocation include:

- Aquatic Conservation Strategy objectives (1995 RMP p. 22-23)
- Provide habitat for terrestrial species associated with late-successional forest habitat.
- Provide dispersal habitat for the northern spotted owl.
- Implement strategies to achieve the goals established in the BLM's Riparian Wetland Initiative for the 1990s.

Treatment Objectives:

Commercial Thinning: Production of wood volume at the present time, increase conifer growth rates for wood volume production in the future and maintain/improve the vigor of selected leave trees while not changing northern spotted owl nesting, roosting, foraging, and dispersal habitat are primary upland objectives for the project. Stand densities would be reduced to increase the availability of light, water, nutrients and growing space for selected trees to be retained. A thinning treatment would promote increased tree size and vigor as well as the development of larger crowns on retained trees. Fewer, but larger trees make up these stands.

Riparian Thinning: The primary objective of thinning within the Riparian Reserves would be dependent on current stand conditions. In younger stands and elsewhere where trees could release or desired understory conditions could develop, the objective would be to create stand conditions that would lead to the development of stands with characteristics of older forests. Where older forest characteristics already exist, the objective would be to maintain those characteristics by reducing stand densities (so that the vigor of selected leave trees improves or is maintained). Like treatments in the uplands, thinnings within the Riparian Reserves would also have an objective of maintaining northern spotted owl nesting, roosting, foraging, and dispersal habitat. Many of these reserves are currently overstocked with conifers. Long-term stand vigor is a concern in some stands. Large woody debris, downed logs, and large tree structure are not to desired levels. Riparian thinning would reduce competition for light, water, nutrients, and growing space on the retained trees. Retained trees would be better able to develop larger canopies, display better vigor and put on diameter growth faster than if left untreated. Incidental gaps in the canopy would promote the development of multiple canopy layers and to promote species diversity, key characteristics of older forest stands. Such small gaps may be created when selecting trees for thinning such as two trees growing close together may be removed. Production of wood volume would be a by-product of the treatment however, rather than a primary objective.

Riparian thinning treatments would appear very similar to thinnings in the upland portions of the units. Canopy cover would vary slightly though. In Riparian Reserves classified as dispersal habitat for the Northern Spotted Owl, the target would be to retain at least 50% canopy cover averaged across the treated reserve. Within areas classified as nesting, roosting and foraging habitat the target would be to retain at least 60% canopy cover.

Non-Commercial Density Management: The objective of Non-commercial Density Management treatments would be the same as for the thinning treatments, to reduce stand densities. No wood volume would be produced at this time as a result of this treatment. Treatment would be limited to conifers and other vegetation 8 inches dbh and less.

Unit descriptions found below are categorized into three different groupings: young managed stands that originated from past harvests; older, previously entered stands that have areas of that have been thinned or partial cut; and older unentered stands.

Effects of Proposed Treatments

The following tables project short-term and long-term effects of proposed thinning treatments compared to no treatment. Projection of short-term effects has a higher degree of certainty compared to the projection of long-term effects. Stand condition and stand characteristics 11-100⁺ years into the future are highly dependent upon uncontrollable variables such as: climate stability or change, extreme weather, wildfire, future management direction, societal pressures, available funding for follow-up treatments and random events.

Vegetation Effects – Short Term (0-10 years)

Stand Condition	No Treatment	Treatments under the Proposed Action		
		Thinning of younger manage stands (incl. non-commercial density management)	Thinning of older, previously entered stands	Thinning of older, unentered stands
Vigor of Residual Trees	No change to decrease	No change to increase	No change to slight increase	No change to slight increase
Growth Rate	No change to decrease	No change to increase	No change to slight increase	No change to slight increase
Live Crown Ratio	No change to decrease	No change to increase	No change	No change to slight increase
Conifer species	No change current spp. to slight decrease	No change in current species to increased species present	No change in current species to increased species present	No change in current species to increased species present
Hardwood Species	No change to decrease	No change to increase	No change	No change
Shrubs/Brush/Forbs	Decrease	No change to increase as more light gets to the understory	No change current spp. to increase	No change current spp. to increase
Snags	No change to increase due to mortality	No change to decrease	No change	No change to slight decrease
Coarse Woody Debris	Remain the same to increase	Remain the same to slight increase	Remain the same to slight increase	Remain the same to slight increase
Branching	Continued loss of lower limbs	Retention of lower limbs	No change	No change
Stability	No change to decrease	No change to potential rapid decrease in areas where height/diameter ratios are currently high. Expected loss of trees in one or more units	No change to slight decrease	No change to slight decrease

Stand Condition	No Treatment	Treatments under the Proposed Action		
		Thinning of younger manage stands (incl. non-commercial density management)	Thinning of older, previously entered stands	Thinning of older, unentered stands
Ability to Respond to Future Treatments	No change to decrease	Increase, however due to low Live Crown Ratios (LCR) in a few areas, some retained trees probably won't respond much if at all in the short-term	No change to slight increase	No change to slight increase
Rate of Development of Older Forest Characteristics	No change	No change to slight increase	No change to slight increase	No change to slight increase

Vegetation Effects – Long Term (11+ years)

Stand Condition	No Treatment	Treatments under the Proposed Action		
		Thinning of younger manage stands (incl. non-commercial density management)	Thinning of older, previously entered stands	Thinning of older, unentered stands
Vigor of Residual Trees	Decrease	Increase	Slight increase to increase	Increase
Growth Rate	Decrease	Increase	No change to increase	No change to increase
Live Crown Ratio	Decrease	Increase	No change to increase	No change to increase
Conifer Species	No change current spp. to slight decrease	Increase once stand develops different canopy layers	No change to slight increase	No change to slight increase
Hardwood Species	No change to decrease	Remain the same to increase then decrease as canopy closes	No change to slight increase	No change to increase
Shrubs/Brush/Forbs	Decrease	Increase then decrease as canopy closes	No change to increase	Increase
Snags	Increase due to mortality, smaller diameters	Decrease in numbers, increase in size	Decrease in numbers, increase in size	Decrease in numbers, increase in size
Coarse Woody Debris	Increase, but small diameter	No change to slight increase	No change to slight increase	No change to slight increase
Branching	Continued loss of lower limbs	Retention of lower limbs until canopy closes, some development /retention of large branches	Retention of limbs present, possible development /retention of large branches	Retention of limbs present, retention of large branches currently present
Stability	Decrease	Increase (after potential short-term decreases)	Increase (after potential short-term decreases)	Increase (after potential short-term decreases)

Stand Condition	No Treatment	Treatments under the Proposed Action		
		Thinning of younger manage stands (incl. non-commercial density management)	Thinning of older, previously entered stands	Thinning of older, unentered stands
Ability to Respond to Future Treatments	Decrease	Increase	No change to increase	No change to increase
Rate of Development of Older Forest Characteristics	No change	Increase	Increase	Increase

YOUNGER STANDS (30-50 year old stands): 7-1, 7-2, 11-3, 11-4, 13-1, 13-2, 13-2B, 13-3, 21-3, 23-1, 23-2, 23-4, 23-5, 19-3A, 19-4, 29-1, 29-2, 25-1, 25-3, 25-4, 25-5, 35-1, 31-4, and portions of units 15-1 and 15-2

Stand Description: These stands are relatively young stands that have resulted from past timber harvests that occurred in the 1960s and 1970s. They have been intensively managed since harvest. Silvicultural treatments that have been accomplished include: broadcast burning, spot burning, ripping and scarifying, seeding, planting, manual brushing, aerial herbicide application, precommercial thinning and aerial fertilization. Precommercial thinnings spacings range from 12 ft x 12 ft to 14 ft x 14 ft (302-222 trees per acre). Many areas of the units contain these numbers of trees. Douglas-fir is the primary conifer species with minor amounts of white fir, incense cedar, western red cedar, western hemlock, ponderosa pine and sugar pine present. Port-Orford-cedar is a very minor component. Diameters generally range from 8-18 inches dbh with average unit diameters of 12-16 inches dbh. Older residual trees can be found in some of the units. While canopy cover is generally high, 75%+ averaged across each unit, open areas exist. Live crown ratios (LCR) are variable across and within units and range from 10-60%. LCRs are for the most part 25-40%. Areas of root rot are present. Portions of units 15-1 and 15-2 are older and naturally regenerated. Hardwood species present include madrone, chinquapin, tanoak, canyon live oak and big leaf maple. Understory species include hazel/oceanspray, rhododendron, ceanothus, salal, huckleberry, manzanita, salal and sword fern.

Analysis: These units are designated as being in the Matrix land use allocation (Matrix-Connectivity/ Diversity for units 29-1 and 29-2). Riparian Reserves are within the units. Units 7-1 and 7-2 fall in Critical Habitat Unit (CHU) 62. All units are currently categorized as dispersal habitat. Portions of 15-1, 15-2, and 23-5 do, however, contain areas of nesting, roosting and foraging habitat. With the exception of areas within unit 23-1, these units do not currently meet RMP guidelines for regeneration harvest. (Portions of unit 23-1 meet regeneration harvest guidelines due to stand condition. Many trees have large height-diameter ratios and LCRs of 10-35%. Many of these trees would not respond to a release treatment and may fall if the canopy is opened by thinning.) Overall, the units have high canopy cover. Live crown ratios are declining as canopies

close. Dominant and many codominant trees are still capable of responding to a release treatment though. The treatment proposed would reduce stand density and promote more vigorous growth in the residual trees while maintaining northern spotted owl dispersal habitat. Black Stain root disease has been noted in the past in young plantations within the project area. Douglas-fir within the units is generally past the age where it is most susceptible to Black Stain disease. Laminated root rot is present in at least one unit.

Desired Future Condition/Results: The desired future condition resulting from this action would, in the short-term, be a stand that had an average of at least 40% canopy cover retained across dispersal habitat in upland portions of each unit. Areas of Riparian Reserves within each unit would have an average of at least 50% canopy cover. Areas of nesting, roosting and foraging habitat would have an average of at least 60% canopy cover. Reduction of the canopy to this level would result in reduced competition on retained trees. Growth rates of the remaining trees would increase where the stand was opened and would be maintained where the stand is currently more open. Mortality of remaining conifers and hardwoods would decrease. In the long-term, growth rates and stand vigor would be maintained. Crowns of existing trees would become fuller and canopy cover would increase from post-harvest levels. Eventually canopy cover would return to near pretreatment levels. However, instead consisting of numerous smaller trees, the canopy would be formed from the crowns of fewer but larger trees. Large hardwoods would be part of the stand.

Prevention/Avoidance Strategies: Timely treatment will help to maintain stand stability by creating conditions where tree diameter growth rates are enough to support increasing tree weights and heights. Pre-designating skid trail locations to avoid black stain root disease (if encountered) would reduce the risk of black stain occurrence. Timely removal of slash piles would limit the insect vectors associated with long range spread of black stain. Retention of non-host conifer species within the infections centers of black stain and laminated root rot areas would also reduce the risk of spread.

Recommended Treatment: The recommended treatment for these stands is to thin from below, releasing dominant and selected co-dominate trees as well as releasable minor species. Retain minor conifer species with the exceptions of individual trees that exhibit poor form or vigor, trees that have a high likelihood of not remaining in the canopy after the treatment, and white fir. Remove white fir except when it is needed to meet desired canopy cover levels. Favor retention of trees with 35-45%+ live crown ratios. Retain some cull trees (<5% of total retained).

Retain minimum average canopy cover (across the treated area) of:

- 40% in areas of upland dispersal habitat.
- 50% in the Riparian Reserve portion of these units. (*Note: Elk Valley Creek is a fish bearing stream so depending on final unit boundaries much or all of units 13-1, 13-2, and 13-3 could end up being marked to retain 50% canopy.*)
- 60% in areas classified as nesting, roosting, and foraging habitat regardless of location within a unit (units 23-5, 15-1, and 15-2).
- 60% in units 19-3A and 19-4 to allow some light thinning along the road while retaining relatively high stocking levels

- 60% within the tractor portion of unit 23-1 with the expectation that some retained trees will be unable to support themselves and will fall. Mark the remainder of unit 23-1 to retain 40% canopy cover.

Variability in canopy and spacing is acceptable. Retain existing large hardwoods, snags, and down wood. In unit 13-2B and areas within other project units that contain smaller conifers, space non-commercial conifers on a 16 ft x 16 ft spacing, space tree-form hardwoods 40 ft x 40 ft, and cut shrubs. Evaluate for need to treat fuels. Slash brush, handpile and burn piles as appropriate.

Silvicultural Options Considered: A heavier cut that removed trees with large height/diameter ratios and small live crown ratios was considered within the tractor portion of unit 23-1 but was deferred. Removal of all or even most of these trees would leave the unit at less than the 40% canopy cover desired to maintain dispersal habitat. A heavier cut that would have allowed the effects of the release to be longer-lived within Riparian Reserves was considered. It was also deferred so that higher levels of shade would be retained and the possibility of riparian microclimate change would be reduced.

OLDER, PREVIOUSLY ENTERED UNITS: 21-1, 21-2, 27-1, 27-2, 27-3, 27-4, 30-1, 31-1, 31-3, and portions of units 15-1 and 15-2

Stand Description: These units are older (non-plantation) stands that originated naturally but have been modified by past harvest activity, principally commercial thinning or partial cutting. Douglas-fir is the primary conifer species. Incense cedar, white fir, ponderosa pine and sugar pine are present. Tree diameters within the units generally range from 14-30" dbh. Limited larger remnants occur. Most of the units are single-storied with a canopy closure of 60-80%+. Units 30-1, 31-1, and 31-3 have similar canopy cover but contain areas which are multistoried. Live crown ratios are generally 20-40%. Hardwood species present include madrone, chinquapin, tanoak, canyon live oak and big leaf maple. Understory species include hazel/oceanspray, rhododendron, ceanothus, salal, huckleberry, manzanita, salal and sword fern.

Analysis: These units are designated as Matrix. Riparian Reserves are within the units. Units 27-2, 27-4, and 31-3, are currently categorized as dispersal habitat. Units 21-1 (most), 27-1, 27-3, 30-1, and 31-1, are currently categorized as nesting, roosting, and foraging habitat. Units 15-1 and 15-2 contain both dispersal and nesting, roosting and foraging habitat. Unit 21-2 is categorized as non-habitat for the northern spotted owl. Almost no acres meet RMP guidelines for regeneration harvest. (Portions of unit 31-1 meet regeneration harvest guidelines due to stand age and condition.) Overall, the units have high canopy cover. Live crown ratios are generally stable or declining as canopies close. Almost all dominant and many of the codominant trees are still capable of responding to a release treatment. Much of the area within these units is single storied. In some areas that have been previously commercially thinned retention of desired canopy levels will mean that few, if any trees would be removed under this project.

Desired Future Condition/Results: The desired future condition resulting from this action would, in the short-term, be a stand that had an average of at least 40% canopy cover retained across areas of upland dispersal habitat. Riparian Reserves within each unit would have an average of at least 50% canopy cover. Nesting, roosting and foraging habitat would have an average of at least 60% canopy cover. Reduction of the canopy to this level would result in reduced competition on retained trees. In the long-term, stand vigor would be maintained. There would be some expansion of tree crowns. The canopy would consist of crowns of fewer but larger trees instead of numerous smaller trees. Large hardwoods would be part of the stand.

Prevention/Avoidance Strategies: Enlarging growing space through a commercial thinning treatment while trees are of good vigor and/or capable of responding will allow for constant or increased growth rates and maintenance of vigor. Timely treatment will reduce the rate of hardwood and shrub loss by being overtopped.

Recommended Treatment: The recommended treatment for these stands is to thin from below, releasing dominant and selected co-dominate trees as well as releasable minor species. Retain minor conifer species with the exceptions of individual trees that exhibit poor form or vigor, trees that have a high likelihood of not remaining in the canopy after the treatment, and white fir. Remove white fir except when it is needed to meet desired canopy cover levels. Favor retention of trees with 35-45%⁺ live crown ratios. Retain scattered large remnant trees. Retain some cull trees (<5% of total retained).

Retain minimum average canopy cover (across the treated area) of:

- 40% in areas of upland dispersal habitat (units 27-2, 27-4, and 31-3, and portions of units 15-1 and 15-2).
- 50% in the Riparian Reserve portion of these units.
- 60% in areas classified as nesting, roosting, and foraging habitat regardless of location within a unit (units 21-1, 27-1, 27-3, 30-1, 31-1, and portions of units 15-1 and 15-2).

Variability in canopy and spacing is acceptable. Retain existing large hardwoods, snags, and down wood. Some areas such as northern portions of unit 21-1 and unit 21-2 may not receive a commercial treatment. In these areas space non-commercial conifers on a 16 ft x 16 ft spacing, space tree-form hardwoods 40 ft x 40 ft, and cut shrubs. Evaluate for need to treat fuels. Slash brush, handpile and burn piles as appropriate. Some planting may be appropriate to establish an understory canopy with a conifer component. Evaluate for planting considering the potential for natural regeneration. Plant if appropriate.

Silvicultural Options Considered: A heavier cut that reduced canopy cover to 40% was considered in all units but was deferred for those units currently categorized as nesting, roosting, and foraging habitat so that the desired 60% canopy cover could be maintained. A heavier cut that would have allowed the effects of the release to be longer-lived within Riparian Reserves was considered. It was also deferred so that higher levels of shade would be retained and the possibility of riparian microclimate change would be reduced.

OLDER, PREVIOUSLY UN-ENTERED UNITS: 11-2, 11-5, 21-1, 23-3, 20-1, 31-5

Stand Description: These units are older stands that originated naturally and with the exception of the northern portion of unit 21-1 have had little or no modification past harvest activity. What harvest activity that has occurred has been generally limited to unit edges or the falling and removal of individual trees. Douglas-fir is the primary conifer species. Incense cedar, white fir, western hemlock, ponderosa pine and sugar pine are present. Tree diameters within the units generally range from 14-30" dbh. Limited larger remnants occur. Units 11-2, 21-1, and 20-1, are single-storied with a canopy closure of 60-80%⁺. Units 11-5, 23-3, and 31-5, have similar canopy cover but contain areas which are multistoried. Live crown ratios are generally 20-40%. Unit 20-1 contains a higher percentage of trees over 20" dbh and has areas where conifer basal area exceeds 300-400ft² per acre. Trees within unit 20-1 show signs of decline. Hardwood species present include madrone, chinquapin, tanoak, canyon live oak and big leaf maple. Understory species include hazel/oceanspray, rhododendron, ceanothus, salal, huckleberry, manzanita, salal and sword fern.

Analysis: These units are designated as Matrix. Riparian Reserves are within the units. Unit 31-5 is currently categorized as dispersal habitat. Units 11-2, 11-5, 21-1, 23-3, and 20-1, are currently categorized as nesting, roosting, and foraging habitat. A portion of these acres meet RMP guidelines for regeneration harvest. Current direction is to maintain northern spotted owl habitat while treating units (40% canopy cover in dispersal habitat and 60% canopy cover in nesting, roosting, and foraging habitat). Overall, the units have high canopy cover. Live crown ratios are stable or declining. Many dominant and codominant trees are still capable of responding to a release treatment. If trees in unit 20-1 respond to a release however, it will be slow. Although trees within this unit 20-1 are large, many of them are starting to fade showing signs of declining LCRs and thinning crowns. Much of the area within these units is single storied.

Desired Future Condition/Results: The desired future condition resulting from this action would, in the short-term, be a stand that had an average of at least 40% canopy cover retained across areas of upland dispersal habitat. Riparian Reserves within each unit would have an average of at least 50% canopy cover. Nesting, roosting and foraging habitat would have an average of at least 60% canopy cover. Reduction of the canopy to this level would result in reduced competition on retained trees. In the long-term, stand vigor would be maintained. There would be some expansion of tree crowns. The canopy would consist of crowns of fewer but larger trees instead of numerous smaller trees. Large hardwoods would be part of the stand.

Prevention/Avoidance Strategies: Enlarging growing space through a commercial thinning treatment while trees are of good vigor and/or capable of responding will allow for constant or increased growth rates and maintenance of vigor. Timely treatment will reduce the rate of hardwood and shrub loss by being overtopped.

Recommended Treatment: The recommended treatment for these stands is to thin from below, releasing dominant and selected co-dominant trees as well as releasable minor species. Retain minor conifer species with the exceptions of individual trees that exhibit poor form or vigor, trees that have a high likelihood of not remaining in the canopy after the treatment, and white fir. Remove white fir except when it is needed to meet desired canopy cover levels. Favor retention of trees with 35-45%+ live crown ratios. Retain some cull trees (<5% of total retained).

Retain minimum average canopy cover (across the treated area) of:

- 40% in areas of upland dispersal habitat (units 31-5).
- 50% in the Riparian Reserve portion of this unit (if any).
- 40-50% in the SE corner of unit 21-1 (estimated 5-7 acres). This area was historically more open. A more open canopy in this area will help retain larger lower limbs on trees that developed under those conditions.
- 60% in areas classified as nesting, roosting, and foraging habitat regardless of location within a unit (units 11-2, 11-5, 23-3, 20-1, and the remainder of 21-1).

Variability in canopy and spacing is ok. Retain existing large hardwoods, snags, and down wood. Some areas such may not receive a commercial treatment. In these areas space non-commercial conifers on a 16 ft x 16 ft spacing, space tree-form hardwoods 40 ft x 40 ft, and cut shrubs. Evaluate for need to treat fuels. Slash brush, handpile and burn piles as appropriate. Some planting may be appropriate to establish an understory canopy with a conifer component. Evaluate for planting considering the potential for natural regeneration. Plant if appropriate.

Silvicultural Options Considered: A heavier cut that reduced canopy cover to 40% was considered in all units but was deferred for those units currently categorized as nesting, roosting, and foraging habitat so that the desired 60% canopy cover could be maintained. A heavier cut that would have allowed the effects of the release to be longer-lived within Riparian Reserves was considered. It was also deferred so that higher levels of shade would be retained and the possibility of riparian microclimate change would be reduced.

APPENDIX 5 - AQUATIC CONSERVATION STRATEGY CONSISTENCY ANALYSIS

“The Aquatic Conservation Strategy was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems contained within them on public lands. The strategy would protect salmon and steelhead habitat on federal lands managed by the Forest Service and Bureau of Land Management within the range of the Pacific Ocean anadromy” (Medford District RMP pg. 22).

The four components of the ACS are Riparian Reserves, key watersheds, watershed analysis, and watershed restoration. The ACS was designed to meet the nine objectives discussed below.

This ACS consistency analysis evaluates Farout Project EA on BLM land.

Analysis of the Four Components of the ACS:

Riparian Reserves: The proposed project is consistent with the actions and directions within Riparian Reserves as described in the Medford District RMP. The Proposed Action would result in thinning and understory treatments to promote forest health and the development of large woody debris (LWD) within Riparian Reserves outside the Ecological Protection Zone (EPZ). Thinning would be designed to expedite the development of late successional, multi-story habitat conditions and restore the species composition and structural diversity of the plant communities, needed to achieve ACS and Riparian Reserve objectives (Medford RMP, p. 22 and p. 26 respectively). Riparian Reserves within the proposed units are currently dominated by Douglas fir and some hardwoods. Most riparian stands are lacking large wood debris, downed logs, and large tree structure. Thinning of dense Riparian Reserves would reduce competition on the retained trees for light, nutrients, water and growing space, allowing trees would develop larger canopies, display better vigor and put on diameter growth faster than if left untreated.

The project is also consistent with the Best Management Practices (BMP) within Appendix D of the 1995 Medford RMP.

2. Key Watershed: The Planning Area is located in a Key watershed. Hauling activities (approximately 89 miles) and vegetation treatment (approximately 745 acres) will be occurring within West Fork Cow Creek, a key watershed.

3. Watershed Analysis: The Glendale Resource Area completed the West Fork Cow Creek Watershed Analysis in 1997 and Upper Middle Fork-Coquille Watershed Analysis in 1999. The proposed activity is consistent with both Watershed Analyses.

The Watershed Analysis found that management directions in the Northwest Forest Plan and the 1995 RMP including the Aquatic Conservation Strategy, Best Management

Practices, and Riparian Reserve management would be adequate at protecting, maintaining and improving aquatic and riparian ecosystems. The West Fork Cow Creek and Upper Middle Fork-Coquille Watershed Analyses recommended reducing road densities which are not needed for future management.

The West Fork Creek and Upper Middle Fork-Coquille Watershed Analyses discussed restricting road construction or considering alternatives to constructing new roads in sensitive soil areas.

The West Fork Cow Creek Watershed Analysis discussed restricting road construction or considering alternatives to constructing new roads in sensitive soil areas. Permanent road construction is not proposed under the Farout Project. Many of the roads in the Farout Project Planning Area are not public roads and are under reciprocal right-of-way agreements with private landowners because of the checkerboard ownership pattern. The BLM does not have the option to close these roads due to the reciprocal right-of-way agreements.

4. Watershed Restoration: Though the Farout Project is not a watershed restoration project, it would aid in the improvement of watershed health through the following proposed activities: thinning and activity fuels reduction in Riparian Reserves.

Analysis of the Farout Project EA Proposed Action's consistency with the Aquatic Conservation Strategy objectives:

The ACS gives direction to maintain and restore ecosystem health at watershed and landscape scales. For the purposes of this analysis the watershed scale will be discussed in terms of site or project scale and will be at the HUC 6 and 7 watersheds. The landscape scale will be at the HUC 5 watershed level.

Appropriate consideration of potential cumulative effects is a critical element in determining a project's consistency with the ACS. The minimal effects at the HUC 7 scale would not reach a magnitude detectable at the HUC 6 or HUC 5 scales. Because there would be no detectable cumulative effects caused by the Proposed Action, cumulative effects will not be discussed in the individual ACS objectives.

1. Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.

The watershed and landscape-scale features which protect species, populations, and communities dependent on aquatic systems would be maintained and in some cases enhanced in the short term and long term. The distribution, diversity, and complexity of watershed and landscape-scale features needed for the protection of aquatic systems would be maintained. Proposed activities such as road decommissioning and riparian thinning would restore watershed features in the short and long term.

Riparian Reserves

One key component of watershed and landscape scale features needed for the protection of aquatic systems is Riparian Reserves. Riparian Reserves would be maintained at the site and watershed levels in the short and long term. Riparian vegetation treatments (thinning) would enhance riparian characteristics. Riparian thinning would result in a reduction in stand densities in young dense stands and would allow for the development of late successional riparian characteristics. Some of these characteristics include multi-level canopy cover which helps to maintain cool water temperatures. Late successional characteristics in riparian areas also include downed coarse woody debris and LWD which increases channel complexity. Late successional characteristics in riparian areas also include diverse species composition which provides a variety of chemical and biological inputs to streams. Riparian thinning would also reduce the spread of disease and the risk of a high intensity or severity fire in Riparian Reserves. Such a fire could result in tree mortality and a reduction in shade, which could negatively affect fish habitat by causing an increase in water temperature, a reduction in future recruitment of LWD, an increase in soil erosion and sediment entering streams.

Roads

The project would result in 1.5 miles of temporary route construction along the ridgetops into units 15-1, 11-2, 21-1, 29-1, 29-2, and 31-5 to access timber in those units that would be decommissioned after use. This action would not lead to stream sedimentation due to the ridgetop location of these roads which are hydrologically disconnected.

Sedimentation would result from the blading of roads and pulling of ditchlines during maintenance of haul routes. There would also be a small amount of stream sedimentation from the use of this road at stream crossing locations. A small amount of sediment may also enter streams during log haul and existing road maintenance where roads are hydrologically connected. All sediment producing actions would result in measurable increases in sediment for no more than 25 ft downstream of the impact point, and would all be within the State of Oregon water quality standard of no more than a 10% increase in turbidity above and below the action.

This project would not increase the number of permanent roads within this sub-watershed, since permanent road building is not part of the proposed project. No foreseeable permanent road construction is planned on federally managed lands within this sub-watershed.

Peak Flows

The Proposed Action would not affect the timing, magnitude, duration, and spatial distribution of peak, high and low flows. No regeneration harvest or overstory removal is proposed for this project.

2. Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network

connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.

The spatial and temporal connectivity within and between watersheds would be maintained in the short and long term at the site and landscape scales. Chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species would be maintained.

3. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.

The physical integrity of aquatic systems, including shorelines, banks, and bottom configurations would not be affected at the site or landscape scale in the short or long term. The proposed activities would not manipulate or affect shore lines, banks or bottom configurations.

4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.

Water quality necessary to support healthy riparian, aquatic and wetland ecosystems would be maintained. Water quality would remain within the range that maintains biological, physical, and chemical integrity streams.

Slight increases in turbidity would occur in the short term in localized areas as a result of road activities. Best Management Practices (BMPs) were designed to minimize the amount and duration of sediment entering stream channels. Such increases in turbidity would not measurably alter the biological, physical, or chemical integrity of streams. Aquatic and riparian dependent species' survival, growth, reproduction, and migration would be maintained.

Temporary route construction and road reconstruction on BLM land (1.7 miles), road maintenance (including daylighting) on BLM land, thinning, and hauling would have no effect on Oregon coast (OC) coho salmon (ESA-Threatened) or coho critical habitat (CCH). The closest coho presence and CCH in streams of the Farout Project Area is approximately 150 ft from the closest thinning unit. The closest coho presence and CCH in streams of the Farout Project Planning Area is approximately 25 ft way from the closest haul road segment (four total). These four road segments represent culverts, bridges, or mainline road segments that cross over coho bearing streams or are in the vicinity of coho bearing streams. Sediment would not be transported to CCH because of the dry condition haul, ridgeline location, EPZs, the proximity of the road to fish habitat and the design features to reduce the transmission of fine sediment. Sediment resulting from the haul and road maintenance would not be of a magnitude that would result in a visible increase in stream turbidity, or a measurable increase in the overall stream sediment deposition for more than 25 ft downstream within any of the stream channels.

5. Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.

The sediment regime under which aquatic ecosystems evolved would be maintained at the site and landscape scales in the short and long terms. Some of the proposed activities such as road reconstruction and road maintenance would reduce sediment input in the short and long term. Streams within the Planning Area evolved with sediment input. Sediment input can result from natural disturbances such as landslides, slumps, wildfires, bank erosion, and channel scour.

Road Related Activities

The following road related activities proposed could deliver sediment to streams: road maintenance (including daylighting) and haul. Sediment input would primarily be seen during the first winter. Because of PDFs the amount of sediment entering streams from road related activities would be minimal. Changes in embeddedness, interstitial spaces, and pool depth would not be measurable. Following the first winter and thereafter sediment entering streams would decrease to the point of being negligible.

Roads proposed for dry condition haul would result in negligible amounts of sediment entering streams because the roads are either bituminous surface treatment (BST) or crushed aggregate (rocked) or are hydrologically disconnected due to ridgetop location of timbersale units. The roads proposed for dry condition haul could result in sediment entering stream channels, however; negligible changes to stream channels from sediment input would be expected. Changes in embeddedness, interstitial spaces, and pool depth would not be measurable.

Road maintenance (including daylighting) would result in a minimal amount of sediment reaching stream channels. Increased sediment levels from road maintenance would not be detectable above background levels following the first few substantial rain events, therefore sediment input would be short term. Negligible changes to stream channels from sediment input would be expected. Changes in embeddedness, interstitial spaces, and pool depth would not be measurable. Following the first winter and thereafter sediment entering streams would decrease to the point of being negligible.

Harvest Activities

All other soil disturbing activities are located outside the EPZ, and would be implemented using BMPs that minimize the quantity and transport of soil erosion. Since the EPZ is designed to filter out sediment produced during upslope activities that are implemented using BMPs, these activities would not result any sediment entering streams.

6. Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood

routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.

The Farout Project would not affect the timing, magnitude, duration, and spatial distribution of peak, high and low flows. No regeneration harvest or overstory removal is proposed in this project.

7. Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.

The timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands would not be affected by any of the proposed activities. There are no wetlands, as defined on page 117 of the RMP, within the Planning Area.

8. Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.

The species composition and structural diversity of plant communities in riparian areas would be maintained at the site and landscape scales in the short and long term. There are no wetlands, as defined on page 117 of the 1995 RMP, within the Planning Area. Vegetation treatments proposed in the Proposed Action were designed to enhance riparian conditions in the short and long term. Plant communities in riparian areas would be maintained and enhanced through silvicultural prescriptions and no treatment buffers in order to provide for adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.

9. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate and vertebrate riparian-dependent species.

Habitat for riparian-dependent plant, invertebrate and vertebrate species would be maintained at the site and landscape scales. Vegetation treatments proposed were designed to enhance riparian conditions in the short and long term. There would not be a reduction of habitat needed to support riparian dependant species in the short term or long term.

CONCLUSION:

Based on this analysis at both the site and landscape scale of the proposed activities in the Farout Project, it was determined that the actions are consistent with the nine objectives and the four components of the ACS. This determination was based on the small spatial and temporal disturbances associated with the proposed activities.

APPENDIX 6 - NOXIOUS WEEDS

Specialist Report Memo

To: Katrina Symons, Field Manager, Glendale Resource Area
 From: Rachel Showalter, Botanist, Glendale Resource Area
 Re: Noxious Weed Rationale Report for the Farout Planning Area
 Date: January 28, 2011

Far Out Project Area – Noxious Weeds – PRESENT, NOT AFFECTED

Units with the Farout Planning Area were surveyed for noxious weeds in the spring of 2010. The Planning Area is known to have noxious weeds along some roadsides. Two populations of *Rubus armenicus* (Blackberry), 2 populations of *Cirsium arvense* (Canada thistle), and 31 populations of *Senecio jacobaea* (*Tansy ragwort*) and were documented within proposed units. (Table A6-1).

Based on these population sizes, per noxious weed reports provided by professional botany contractors, the Glendale botanist estimated that less than 1% of the harvest unit / road reconstruction / temp route construction acreage harbor noxious weeds. The maximum square footage occupied by all noxious weed species reported in or directly adjacent to Farout Project units is approximately 11,500 sq. ft (0.26 acres).

Table A6-1. 2010 Plant Surveys Revealing Noxious Weed Species in the Farout Project Area Units

Location in Township (T), Range (R), Section (S)	Species	Coverage in Sq. Feet	Oregon Department of Agriculture Designation	Plant Description / Habitat Requirements
T31S-R9W-25 T31S-R8W-19	Himalayan Blackberry	600 100	B*	Himalayan blackberry is a robust, clambering or sprawling, evergreen shrub which grows up to 9.8 feet (3 m) in height (Munz, 1974). Himalayan blackberry typically grows in open weedy sites, such as along field margins, railroad right-of-ways, roadsides, and riparian areas (Crane, 1940; Hitchcock et. al, 1973; Laymon, 1984; Roberts, 1980).
T31S-R9W-21 T31S-R9W-23	<i>Cirsium arvense</i>	300 20	B*	Generally, Canada thistle establishes and develops best on open, moist, disturbed areas, including ditch banks, overgrazed pastures, meadows, tilled fields or open waste places, fence rows, roadsides, and campgrounds; and after logging, road building, fire and landslides in natural areas (Romme et al, 1995). Canada thistle is an early seral species, susceptible to shading, and grows best when no competing vegetation is present (Donald, 1994).

				Canada thistle growth may be discouraged in disturbed natural areas if suitable native species are seeded densely enough to provide sufficient competition (Haber, 1997).
T31S-R9W-11 T31S-R9W-15 T31S-R9W-23 T31S-R9W-25 T31S-R8W-7 T31S-R8W-19 T31S-R8W-29 T31S-R8W-31	Senecio jacobaea	6800 830 800 300 100 600 100 950	B*	Tansy ragwort, a biennial herb, requires sunlight and a disturbed site to establish. It is often found on roadsides, contributing to the spread of new infestations. Tansy ragwort will establish in disturbed sites including roadsides, pastures, and forested areas recently harvested for timber (Sweeney et al. 1992). The cinnabar moth (<i>Tyria jacobaeae</i>) is the biological agents effectively used to control tansy ragwort in Oregon, California, and Washington (Rees et. al, 1996).
Total Sq. feet		11500 sq ft = 0.26 ac		

* “B” designation; a weed of economic importance which is regionally abundant but which may have limited distribution in some counties. Where implementation of a fully integrated statewide management plan is not feasible, biological control shall be the main control approach (ODA, 2005).

Over the last 150 years activities such as motor vehicle traffic, recreational use, rural and urban development, timber harvest, road construction, and natural process have introduced and transported noxious weeds into the Rogue Valley. Noxious weeds are spread by the wind and by seed via attachment to vehicles and vectors such as humans, animals, and birds, and are able to grow on suitable habitat (generally considered as any newly disturbed ground and/or an influx of light due to canopy removal). Since the 1970’s, a recognition that weeds were causing environmental damage resulted in the passage of State noxious weed laws, the Carson-Foley Act of 1968 – Plant Protection Act of 2000, and Presidential executive orders like Invasive Species E.O. 13112, which directs federal agencies to combat the noxious weeds on federal lands. Additional direction is provided by the Medford District RMP, which states the district is to “contain and/or reduce noxious weed infestations on BLM-administered land...(p. 92),” and “...survey BLM-administered land for noxious weed infestations...(p. 93).” These RMP directions for weed management are intended to be met at a landscape level; whether the direction is achieved is not intended to be measured at the site specific level nor with the implementation of each project. Thousands of acres of weed treatments have occurred on federal (and non-federal) lands over the last decade across the Medford District with the RMP-driven objective of containing or reducing – not eradicating - noxious weed populations (Budesca, 2006). In an effort to continue to contain and/or reduce noxious weeds on federal land, the BLM proposed to treat known weed populations within the Glendale Resource Area. In 2010, over 1,000 acres of BLM land in the Glendale RA was treated, including roadsides adjacent to Farout units. Many roadsides within the Farout planning area are scheduled for subsequent treatment in 2011.

Environmental Consequences of the Far Out Project Implementation

Alternative 1 (No Action) – Direct and Indirect Effects

Under the No Action Alternative, noxious weeds within the Planning Area would continue to spread into suitable habitat at an unknown rate. The rate at which noxious weeds spread is impossible to quantify, as it depends on a myriad of factors including, but not limited to, logging on private lands, motor vehicle traffic, recreational use, rural and urban development, and natural processes (Northwest Area Noxious Weed Control Program EIS, p. 59). The following table (1-2) illustrates how each of these activities affects noxious weed dispersal.

Table A6-2. Factors Affecting the Determination of the Rate of Noxious Weed Spread

Activity	Role in Potential Noxious Weed Seed Dispersal
Private Land	Private lands host a perpetual source for noxious weed seed, which can be dispersed when seeds attach to tires, feet, fur, feathers or feces, or when natural processes such as wind and/or flooding events transport the seed from its source to another geographical vicinity.
Logging on Private Lands	Logging activity presents a key dispersal opportunity for noxious weed seeds per 1) attachment to tires/tracks of mechanized logging equipment, tires of log trucks, and various other logging-related substrates which subsequently transport the seed from its source to another geographic vicinity, 2) creation of openings for potential noxious weeds colonization and 3) a lack of PDFs – such as equipment/vehicle washing, etc. - which attempt to reduce the activity’s spread of noxious weed seeds.
Motor Vehicle Traffic (including Log Trucks)	Roads on public land include public use, which results in a plethora of seed-dispersing activities occurring on a daily basis. Private landowners use public roads to haul logs, undertake recreational pursuits, and/or access their properties. This transportation often occurs along BLM-administered roads, which are situated within a checkerboarded ownership arrangement. How or when seed detachment occurs is a random event could take place within feet or miles from the work site/seed source, presenting a high likelihood of detachment on public lands.
Recreational Use	The public often recreates on BLM-managed public lands, and can spread seed from their residences to public land in a variety of ways such as attachment to vehicle tires, hikers’ sox, shoes, or other clothing, the fur of domesticated animals, etc.
Rural and Urban Development	Rural development occurring within the checkerboard land arrangement often requires public landowners to acquire a Right-of-Way (ROW) from the BLM to legally access their parcel(s). These ROWs, or use of BLM-administered roads is often granted (Groves, 2006). Please refer to ‘Motor Vehicle Traffic’ and ‘Private Land,’ for clarification of how this affects the spread of noxious weeds from private to public lands.
Natural Processes	Wind, seasonal flooding, and migration patterns of birds/animals are a few natural processes that potentially spread noxious weeds, especially from private land to public land. Wind carries seeds, and deposits them at random intervals. High water caused by flooding reaches vegetation (often harboring a noxious weed component) growing on the banks of rivers/creeks/streams, and deposits seeds downstream.

The abovementioned activities would contribute to noxious weed spread, which could degrade some elements of the environment. To predict the rate of this degradation would be highly speculative, as the extent of weed expansion is dependent on so many factors that it is considered impossible to quantify. The degree of degradation would depend on the noxious weed species, as some, such as scotch broom and meadow knapweed, are

more intrusive than others. Across the Glendale Resource Area, the more aggressive species are slated for treatment under Medford District's *Integrated Weed Management Plan and Environmental Assessment OR-110-98-14* under a separate project. However, the success of implementing the weed management plan would be temporary, as logging on non-federal lands, recreational use, rural and urban development, natural processes and vehicle traffic will continue to spread noxious weed populations into the Planning Area.

Indirect effects of noxious weed spread include the potential degradation of wildlife habitat (Rice et. al. 1997, Harris and Cranston 1979), a decline in natural diversity (Forcella and Harvey 1983; Tyser and Key 1988; Williams 1997), and decline in water quality (Lacey et al. 1989); however, a very small amount of Farout unit acreage (less than 1% of unit acreage under Alt. 2) is covered by noxious weeds, making it difficult to quantify any potential decline in ecosystem health related to existing noxious weed populations, or to quantify the potential decline in ecosystem health related to any additional noxious weed populations potentially established by the activities described in Table A6-2.

Alternative 2 (Proposed Action) – Direct and Indirect Effects

In the short term (approximately 1-5 years), proposed activities within the Planning Area would result in the reasonable probability of spreading noxious weeds. However, the rate at which this potential spread would occur is unknown due to the indistinguishable causal effect of other activities and factors listed in table A6-2 on the spread of noxious weeds. Openings, caused by logging (745 acres), 0.2 miles of road reconstruction, 10.5 miles of daylighting road maintenance, and 1.5 miles of temporary route construction, would provide suitable habitat for noxious weeds to colonize. In addition, during project implementation, increased vehicle traffic could increase, or at least perpetuate, weed infestations along road systems because of seed dispersal.

Openings and disturbance provide the greatest opportunity for the establishment of noxious weeds. In an effort to address the potential for project activities to increase the rate of spread of noxious weeds, Project Design Features (PDFs) have been included in the project to decrease the potential spread of weeds associated with the Proposed Action. Project Design Features include washing equipment prior to moving it on-site, operating vehicles/equipment in the dry season, and seeding and/or planting newly created openings with native vegetation to reduce the potential establishment of noxious weeds. These PDFs are widely accepted and utilized as Best Management Practices (BMPs) in noxious weed control strategies across the nation (Thompson, 2006). Table A6-3 delineates the project design features and their expected implementation results.

Table A6-3: Project Design Features and Expected Implementation Results

Project Design Feature (PDF)	Result of Implementing PDF
Washing vehicles / equipment	Removes dirt that may contain viable noxious weed seeds, thereby reducing the potential for noxious weed spread
Operating vehicles/equipment during the dry season	Reduces the potential for viable noxious weed seed to be transported and dispersed via mud caked on the undercarriages/tires/tracks of logging equipment.
Seeding and/or planting newly created openings with native seed vegetation.	Introduces native vegetation to the site prior to noxious weed seed recruitment, allowing native plants an advantageous jump-start in reestablishment, which reduces the potential for noxious weed infestation.

Implementing the PDFs that reduce the potential spread of noxious weeds associated with the Proposed Action, and using native species for seeding/planting newly disturbed openings is expected to result in a similar potential of noxious weed expansion as associated with the No Action Alternative.

In the long term (5-100 years), tree canopies would eventually expand and reduce light levels, which in turn would prevent weeds from growing and expanding within treated areas, because populations decline as the amount of light reaching the plants diminishes. Consequently, in the long term, remaining weed populations would be confined to the road prism and adjoining (private) disturbed land as canopy is re-established in treated areas over time.

The effect of implementing Alternative 2 could possibly result in the establishment of new noxious weed populations. Although the *immediate* potential for weed spread would be less with the No-Action Alternative than for the Proposed Action, the potential for the spread of existing noxious weeds and the introduction of new species is considered similar for both alternatives, because of the inclusion of PDFs in Alternative 2, and the fact that under the “No Action” Alternative, populations would continue to establish and spread due to seed transport by vehicular traffic, wildlife, and other natural dispersal methods listed in Table A8-2. Indirect effects associated with noxious weed population enlargement are similar to those mentioned in the No Action Alternative, and are known to include, generally, declines in the palatability or abundance of wildlife and livestock forage (Rice et al., 1997), declines in native plant diversity (Forcella and Harvey, 1983; Tyser and Key, 1988; Williams, 1997), reductions in the aesthetic value of the landscape, encroachment upon rare plant populations and their habitats, potential reductions in soil stability and subsequent increases in erosion (Lacey et. al, 1989), and an overall decline of ecosystem health. However, considering implementation of Alternative 2, there are three main reasons why potential weed establishment that might be caused by the Proposed Action is not expected to result in a detectable effect to overall ecosystem health. First, surveys indicate that a very small percentage - less than 1% of acreage within the Project Area units - are affected by noxious weeds. Second, these sites located in units proposed for treatment have been reported during pre-disturbance surveys, and some (depending on how aggressive the species is) have already received treatment in

2010 under Medford District's *Integrated Weed Management Plan and Environmental Assessment OR-110-98-14*, which means that the acreage in the Planning Area affected by noxious weeds is now even closer to 0% until ongoing activities listed in Table A8-2 would potentially re-introduce weeds into the Planning Area. Third, as aforementioned, Project Design Features (PDFs) have been established to minimize the rate at which project activities might potentially spread noxious weed seed from outside/adjacent sources.

Alternative 2 (Proposed Action)

In order to address the cumulative effects of the Proposed Action on the spread of noxious weed encroachment, the condition of non-federal lands must be considered. However, there is no available or existing data regarding noxious weed occurrence on local non-federal lands. Therefore, for purposes of this analysis, BLM assumes that 1) there is a perpetual source of noxious/invasive weeds on non-federal lands that can spread to federal lands, especially when the land ownership is checkerboarded, as within the Planning Area, and 2) conversely that noxious weeds are not established on these lands, and therefore there is a need to reduce the risk of spread of noxious weeds from the federal lands to the adjoining non-federal lands. Seeds are spread by the wind, by animal/avian vectors, natural events, and by human activities - in particular through soil attachment to vehicles. BLM's influence over these causes of the spread of noxious weeds is limited to those caused by human activities. Additional human disturbance and traffic would increase the potential for spreading noxious weed establishment, but regardless of human activity, spread of these weeds would continue through natural forces. Thus, the BLM cannot stop the spread of noxious weeds, it may only reduce the risk or rate of spread.

Given the unpredictable vectors for weed spread, such as the vehicle usage by private parties, wildlife behavior, and wind currents, it is not possible to quantify with any degree of confidence the rate of weed spread in the future, or even the degree by which that potential would be increased by the Proposed Action.

Foreseeable activities within the Planning Area are expected to be similar to past and current activities: motor vehicle traffic, recreational use, rural and urban development, timber harvest, road construction, and firewood collection. These types of activities could result in new disturbed sites available for colonization by existing noxious weed populations, and they do offer the possibility of introduction of new noxious weed species to the Planning Area under any alternative, including the No-Action Alternative. As stated above, there is no available or existing data concerning the rate of weed spread occurring on either federal or non-federal lands as a consequence of these types of activities. Also, as discussed above, there is no information on what, if any, increase in the rate of weed spread the Proposed Action would cause, and hence, it is not possible to quantify with any degree of confidence what the incremental effect of the Proposed Action on the spread of noxious weeds would be when added to the existing rate of weed spread caused by past, present, and future actions.

PDFs exist to reduce the potential that the Proposed Action would contribute to the spread of weed seed and establishment of new populations. PDFs are not intended or expected to completely eliminate any possibility that the Proposed Action would contribute to the spread of weed seed and establishment of new populations; however, PDFs ensure that any incremental contribution of the Proposed Action to the spread of weeds, when added to the rate of weed spread caused by past, present, and future actions, would be so small as to be incapable of quantification or distinction from background levels.

As described above, PDFs for this project include washing vehicles/equipment, operating in the dry season, and seeding/planting newly created openings with native vegetation. BLM, and other federal and nonfederal organizations involved in combating noxious weed spread, routinely utilize these PDFs in noxious weed control strategies. These PDFs are widely accepted as Best Management Practices (BMPs), as they are inexpensive to implement, easily attainable, and accomplish the objective of reducing the potential of spreading noxious weeds as a result of project-oriented activities.

Data collection would not reduce the inherent speculation in predicting incremental effects of the proposed action on the spread of weeds because of (1) the unpredictable natural factors that largely determine whether weeds would spread after project activities, (2) the unlikelihood that future data collection would be able to detect or measure any difference between background rates of weed spread and the rate of weed spread as affected by the Proposed Action and correspondingly reduced by PDFs, and (3) the included PDFs that would reduce, if not eliminate, any project effects on the rate of weed spread that would make the already undetectable effects of the Proposed Action even more undetectable. Finally, further data collection on the rate of spread would not alter the PDF techniques already being applied to reduce that rate of spread. It cannot be over emphasized that under the “No Action” Alternative, noxious weeds are likely to spread over time regardless of whether or not the Farout project occurs, and that rate would not be altered to any detectable degree by the Proposed Action.

APPENDIX 7 - SPECIAL STATUS SPECIES

Specialist Report

To: Katrina Symons, Field Manager, Glendale Resource Area
From: Rachel Showalter, Botanist, Glendale Resource Area
Re: Special Status, and Survey and Manage Plants Rationale Report for the Farout Planning Area
Date: January 14, 2011

T/E Plants – NOT PRESENT

Of the four federally listed plants on the Medford District (*Fritillaria gentneri*, *Limnanthes floccosa* ssp. *grandiflora*, *Arabis macdonaldiana*, and *Lomatium cookii*), only *Fritillaria gentneri* has a range which extends into the Glendale Resource Area. Final units within the Farout Project Area are not within the range of *F. gentneri*, as determined by the 2004 U.S. Fish and Wildlife Service Biological Opinion. Vascular plant surveys were conducted in the spring of 2010, and no *Fritillaria gentneri* populations were found. There would be no anticipated effect from the Proposed Action on any federally listed plant.

Bureau Special Status & Survey and Manage Plants – PRESENT, NOT AFFECTED

On July 26, 2007 a new Special Status Species list went into affect (IM No. OR-2007-072), coupled with a new Interagency Special Status Species Policy (ISSSP). This new list has two categories, (ISSSP) Sensitive and Strategic. The former categories of Bureau Assessment and Bureau Tracking no longer exist. Sensitive species require a pre-project clearance and management to prevent them from trending toward federal listing. There is no pre-project clearance or management required for the Strategic Species at the BLM District level, thus Strategic Species will not be analyzed in this document.

In addition to the new Special Status Species policy, Survey and Manage requirements have been re-instated as of December 2009. In summary, all projects within the range of the northern spotted owl may move forward if they fall within one of two categories;

- 1) the project fits at least one of the four exemptions listed in the October 11, 2006 , modified injunction in Northwest Ecosystem Alliance V. Rey, Case No. 04-844-MJP (W.D. Wash. Oct. 11, 2006), **or**
- 2) the project complies with the 2001 Record of Decision without Annual Species Reviews.

This initial direction is a result of Judge Coughenour's order of December 17, 2009, regarding survey and manage species (Conservation Northwest v Rey, Case No. C08-1067-JCC (W.D. Wash. Dec. 17, 2009) (DRAFT IM 2010-1790). Category 1 is commonly also referred to as the Pechman order, which states that projects operating in stands less than 80 years old are exempt from S&M survey requirements. This project

does not fit into the Pechman exemption, and as such, botanical surveys were completed for both ISSSP and Survey and Manage A & C species.

Vascular and nonvascular plant surveys were conducted in the fall of 2009 and the spring of 2010, respectively. Professional botanists surveyed the Planning Area units using intuitive controlled methodology, wherein areas supporting high potential habitat were surveyed more intensively; surveys were also in compliance with the 2001 Survey and Manage protocol, which requires surveys for Category A and C species. Survey and Manage protocol also requires managing known (documented) sites of Category A, B, C, and E species, managing 'high-priority' Category D species, and no site management requirement of Category F species. Surveys revealed the following new sites; (1) *Illiamna latibractiata* (Sensitive, in unit 15-2), (1) *Leptogium teretiusculum* (S&M E, in unit 11-2), and (2) incidental fungi sightings of *Phaeocollybia attenuata* (S&M D, in unit 25-4).

The vascular species *I. latibractiata* will receive a protection buffer ranging from 5-100 feet in diameter, depending on site specific conditions. For the Survey and Manage species, in this case all of which are nonvasculars, Survey and Manage protocols state Category D species are a 'manage high-priority site' species, although surveys are not required for them. The 2001 Survey and Manage Standards and Guidelines, p 10 states that "high priority sites will be managed according to the Management Recommendation for the species," and if there aren't any Management Recommendations for the species, then "a combination of professional judgment, Appendix 12 in the Northwest Forest Plan final SEIS, and appropriate literature will be used to guide individual site management." Most importantly, "until a Management Recommendation has been written addressing high priority sites, either assume all sites are high priority," or commence determination of high-priority sites on a case-by-case basis with the following formula:

- 1) Obtain guidance from the Interagency Survey and Manage Program Manager;
- 2) Obtain local interagency concurrence (BLM, FS, USFWS);
- 3) Document consideration of the condition of the species on other administrative units as identified by the Program Manager – typically adjacent units as well as others in the species range within the province; and,
- 4) ID in ISMS (now GeoBOB)

In the case of this EA all Survey and Manage category D species are assumed 'high-priority,' and will be buffered to ensure species persistence at each site. As such, buffers may range from 5-100 feet, depending on site-specific conditions. For Category E species, site management is required, thus *L. teretiusculum* will receive a 5 -100 foot buffer.

It is important to note that regarding the above-mentioned buffers, the actual buffer itself may be comprised of either a physical buffer made from flagging, or a virtual buffer provided on a map. In either case, the intent of the buffer is to provide awareness of the site, and to prevent any activity from occurring within the buffer radius that would jeopardize species persistence.

Bureau Special Status & Survey and Manage Fungi – PRESENT, NOT AFFECTED

Special Status

The Project Area was not surveyed for ISSSP Sensitive fungi, as pre-disturbance surveys for Special Status fungi are not practical, nor required per BLM – Information Bulletin No. OR 2004-121, which states “If project surveys for a species were not practical under the Survey and Manage standards and guidelines (most Category B and D species), or a species’ status is undetermined (Category E and F species), then surveys will not be practical or expected to occur under the Special Status/Sensitive Species policies either (USDA/USDI 2004a, p.3).” Current special status fungi were previously in the aforementioned S&M categories which did not consider surveys practical, and are therefore exempt from survey requirements. With the recent instatement the new Interagency Special Status Species policy (ISSSP), 20 species of fungi were designated as Sensitive, 9 of which have been documented on Medford District. As mentioned above, none of these species require surveys.

District wide, the Medford BLM has 20 Sensitive (SEN) fungi species; 11 are suspected to occur here, while the remaining 9 have been documented. Of the 9 documented species, only one, *Phaeocollybia olivacea*, has been found in the Glendale Resource Area, approximately 12.5 air miles away from the closest unit in the Project Area. Dispersal via spore transport and/or mycelia network is improbable, as this site and the Project Area reside within different HUC 5 watersheds (the site is in Middle Cow Watershed, the Far Out project is in West Fork Cow Watershed) and the two areas are separated by steep ridges and several ravines. There are no sites of this species in the West Fork Cow Creek HUC 5 watershed, where the Farout Planning Area is located.

While it is possible that this project is occurring within potential habitat for some species, there is very little information available describing the *exact* habitat requirements or population biology of these species (USDA/USDI 2004c, p.148). The 2004 FEIS to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines addresses this type of incomplete and/or unavailable information (p. 108-109). However, the 2004 *Record of Decision (ROD) to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines*, offers a broad scale prospective of this current situation in stating, “Any discussion of risk based on rarity and likelihood of disturbance must recognize that, for many species, only a small percentage of potential habitat has been surveyed. Reserves have not been surveyed to the same degree as Matrix and Adaptive Management Area land allocations. The Reserves were not surveyed because there has been little management-induced disturbance there. The vast majority of pre-disturbance surveys have been located in the Matrix and Adaptive Management Area land allocation (19 percent of the northwest Forest Plan area), so that is where many of the known sites have been found. This does not mean that a disproportionate amount of their habitat is located in Matrix. If these species are truly closely associated with late-successional or old-growth forests, we can reasonably expect that the large amount of federally managed lands in Late-Successional and Riparian Reserves which provide the most amount of this type of habitat (86 percent of currently existing late-successional

forests is in reserves) would also provide, at a minimum, its proportionate share of the habitat to support populations of these species (2004 ROD to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines, p.11).”

Based on the above information, the likelihood of a Sensitive fungi species in this Project Area is very low; the likelihood of a sensitive fungi occurring within a single unit(s) encompassed in the Project Area is even lower. The likelihood of contributing toward the need to list is not probable.

Survey and Manage

Aside from incidental Survey and Manage fungi sightings, the Project Area was not surveyed for fungi to Survey and Manage protocol standards. For NEPA decisions signed in fiscal year 2011 and beyond for habitat-disturbing activities in old-growth forest, the 2001 S&M ROD (Forest Service and Bureau of Land Management 2001, S&G-9) gives direction to conduct equivalent effort surveys for category B fungi species if strategic surveys have not been completed for the province encompassing the project. The Survey and Manage Standards and Guides defines old growth forest as an ecosystem distinguished by old trees and related structural attributes that are usually at least 180 to 220 years old (Forest Service and Bureau of Land Management 2001, S&G-79). Strategic surveys have not been completed for category B fungi for the province containing the Farout project area, and equivalent effort surveys have not been completed as units do not exceed 180 years of age.

Alternative 1 – No Action

Direct and Indirect Effects

T&E, ISSSP Sensitive, & Survey and Manage Vascular Plants

There would be no direct or indirect effects to ISSSP Sensitive or Survey and Manage vascular plants under Alternative 1 because no physical disturbance would occur that could impact them.

ISSSP Sensitive & Survey and Manage Nonvascular Plants

No direct or indirect effects would occur to ISSSP Sensitive or Survey and Manage nonvascular plants because no activities would occur that could impact them.

ISSSP Sensitive & Survey and Manage Fungi

There would be no direct or indirect effects to ISSSP Sensitive or Survey and Manage fungi under Alternative 1 because no physical disturbance would occur. There would be no loss of late-successional forest which provides suitable habitat for the 11 suspected and 9 documented Medford District BLM Sensitive fungi.

Cumulative Effects

Information is not available about rare plant populations in the Farout Planning Area prior to BLM botanical surveys, which began during the last 25 years. However, past

activities, described in the affected environment, likely affected Special Status plants and populations by damaging or destroying individuals or reducing or degrading suitable habitat.

Although specific logging plans for private industrial forest lands are not available, it is assumed that commercial harvest will occur in the future on relatively short rotations, and that privately-owned forests will remain in early to mid-seral stages. Sensitive and Survey and Manage species do not receive protection on privately-owned lands, but will continue to be protected and conserved on federal lands, according to BLM policy (IM OR-91-57).

Alternative 1 would not contribute additional cumulative effects to ISSSP vascular / nonvascular plants, or fungi. The amount of late-successional forest on BLM-managed lands would remain unchanged.

Alternative 2

Direct and Indirect Effects

T&E, ISSSP Sensitive, & Survey and Manage Vascular Plants

There would be no direct or indirect effects to ISSSP or Survey and Manage vascular plants under Alternative 2 because only one such site, *I. latibractiata*, is within project area units, and it will receive a protection buffer.

ISSSP Sensitive & Survey and Manage Nonvascular Plants

No direct or indirect effects would occur to ISSSP Sensitive species because none exist within project area units. The Survey and Manage E species present in unit 11-3, *L. teretiusculum*, will receive a protection buffer, and effects are not anticipated.

ISSSP Sensitive & Survey and Manage Fungi

ISSSP Sensitive

No official fungi surveys were performed, thus it is unknown if Sensitive fungi are present in the treatment units. Potential habitat for many of the 20 Sensitive species exists in the Project Area because a predominant Douglas-fir component is present (generally considered an indicator species, but recorded sites commonly have white fir as well), but predicting their presence is difficult because the habitat requirements are poorly understood. Because of their rarity across the Northwest Forest Plan area, it is unlikely that populations are present in the final treatment units. However, if present, they could be directly or indirectly adversely impacted by the proposed actions in Alternative 2.

Survey and Manage

Although predisturbance surveys resulted in a few incidental fungi sights, no fungi surveys have been conducted in accordance with Survey and Manage protocol in the Farout Project Area. The *Phaeocollybia attenuata* incidental fungi site is a Survey and Manage D, and will be buffered. In addition, harvest activities will occur when the

species is dormant so the anticipated effects to the species would be even further minimized.

ISSSP & Survey and Manage

Harvest can have varying degrees of adverse impacts on fungi, depending on the level of tree removal and ground disturbance. Removing, disturbing, or compacting the top layer of organic material and mineral soil could negatively impact fungi. The main and most extensive part of the fungus consists of a below-ground mycelia network that resides in the top few inches of mineral soil. Mycelia networks are often connected to multiple trees through their root systems. In one study, fungal mycelia networks ranged in size from 1.5 - 27 square meters (Dahlberg and Stenlid 1995). Disruption of mycelia networks could occur during timber harvest, construction or ripping of roads or landings, removal of host trees that sustain the ectomycorrhizae, or burning post-harvest slash piles. The effect of these activities on fungi is a loss of species diversity and abundance (Amaranthus et al. 1996). Alternative 2 presents a potential risk of impacting Sensitive fungi, if present, because it proposes temporary roads and the harvesting of trees.

Fungi could also be directly impacted from radiant heat during burning of post-harvest slash piles. Effects of pile burning include damage or death of mineral soil fungi including the mycelia and spores; loss of litter, organic matter and large wood, resulting in reduced moisture retention capability, loss of nutrient sources, and changes in fungal species diversity and abundance. Implementation of Alternative 2 creates the greatest threat of damage to fungi from burn piles because the trees would be harvested. However, commercial thinning activities do not produce as much slash as Regeneration harvesting, and the area impacted by burn piles would be a small percentage of acreage compared to the total amount of acres in the planning area.

Cumulative Effects

Information is not available for rare plant populations in the Farout Planning Area prior to BLM botanical surveys, which began during the last 25 years. However, it is assumed that past activities, described in the affected environment, likely affected Sensitive / S&M plants and populations by damaging or destroying individuals or reducing or degrading suitable habitat.

Although information is not available for logging plans on private industrial forest lands, it is assumed commercial harvest will occur in the future and privately-owned forests will be in early to mid-seral stages. Sensitive species do not receive protection on privately-owned lands, but will continue to be protected and conserved on federal lands, according to BLM policies and federal regulations.

Sensitive and/or S&M plants would not be directly impacted by the activities proposed in Alternative 2 because surveys have been conducted and no Sensitive plants were located. Project design features would reduce the risk of introducing or spreading noxious weeds during project implementation, which could potentially impact Sensitive vascular plant habitat. No Sensitive Status or Survey and Manage vascular or nonvascular plants would

trend toward listing (ISSSP) or cease persisting (S&M) as a result of implementing the activities proposed in Alternative 2.

The potential cumulative effect of the proposed project on Sensitive fungi would be the risk of impacting rare populations on 745 acres during timber harvest treatments. However, the proposed harvest would occur on matrix lands, which are designated for timber production and harvest. Across the Northwest Forest Plan area, approximately 14 percent of the 8 million acres of late-successional forest are in matrix and are available for harvest, while 86 percent are designated as late-successional reserves, congressionally reserved and administratively withdrawn areas, and Riparian Reserves. It is estimated that over the next 50 years, late-successional forest would develop at 2.5 times the rate of loss through stand-replacement fires and harvest (USDA/ USDI 2004c, 107-111). This reserve system spread across the landscape is intended to provide protection and development of late seral habitat for the protection and expansion of late-successional associated rare plants. Under the Northwest Forest Plan, at least 15 percent late seral (80-plus years old) conifer forest must be maintained in each 5th field watershed (USDA/USDI 1994, p. C-44).

Because of their rarity across the Pacific Northwest Forest Plan Area, it is unlikely Sensitive fungi are present in the Farout timber harvest units. The risk is low that they would be impacted. The same holds true for Survey and Manage A & C fungi. It is protection of species at the landscape level that ensures Sensitive species will not trend toward listing and S&M species will persist. The assumption is made that protecting known sites (current and future found) of these Sensitive and S&M (categories A-E) fungi, in addition to conducting large-scale inventories throughout the Pacific Northwest, will be adequate in ensuring that this project and future projects would not contribute to the need to list them (USDI 2004, 5-2) or jeopardize persistence (2001 S&M Standards and Guidelines p-3).

APPENDIX 8 - MIGRATORY BIRDS

Specialist Report

To: Katrina Symons, Field Manager, Glendale Resource Area
From: Marlin Pose, Wildlife Biologist, Glendale Resource Area
Re: 'Not Affected' rationale regarding migratory birds
Date: September 9, 2009

Analysis of Proposed Action Effects on Birds of Conservation Concern for the Farout Planning Environmental Analysis

Compliance with the Executive Order To Protect Migratory Birds

Executive Order 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds," (Federal Register 2001) highlights the need for federal agencies including the USDI Bureau of Land Management (BLM) to conserve migratory birds (those species listed in 50 C.F.R. 17.11) (U.S. Fish and Wildlife Service 2002) protected by the migratory bird conventions (the Migratory Bird Treaty Act [16 U.S.C. 703 – 711], the Bald and Golden Eagle Protection Acts [16 U.S.C. 668 – 668d], the Fish and Wildlife Coordination Act [16 U.S.C. 661 – 666c], and the Endangered Species Act of 1973 [16 U.S.C. 1531 – 1544]. This responsibility includes the need to ensure that environmental analysis of federal actions evaluate the effects of those actions on migratory birds, "with emphasis on species of concern" (Federal Register 2001, p.3855).

"To the extent permitted by law and ...in harmony with agency missions" (p.3854, Ibid.) such as the O&C Act of 1937, the Medford District Resource Management Plan (USDI 1995) and the Northwest Forest Plan (USDA/USDI 1994a); the proposed actions are consistent with "avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources," (p. 3854, Federal Register 2001) as directed in the Executive Order mentioned above.

Birds of Conservation Concern

Table 1 below summarizes the potential effects of the proposed actions described in the Farout Planning Environmental Analysis on the Birds of Conservation Concern known to occur on Medford District BLM managed lands.

Table 1: Birds of Conservation Concern for Medford District BLM		
species	habitat	presence in Farout Project Area and effects
peregrine falcon	cliffs	Habitat not present in the Project Area
olive-sided flycatcher	Green coniferous forests with snags. Habitat is relatively broken-canopied coniferous forest from sea level to Cascades up to 9,000 ft elev., containing large trees and snags (Zeiner et al 1990). Geographic distribution over W side of CA,OR,WA, intermountain West and most of Canada (Natl. Geographic 1989). Mature and old-growth coniferous stands or fragments of these with uneven, mixed-age canopies that contain occasional snags, from which it forages (Csuti et al 2001, Kemper 2002, Altman 1999)	Present in Project Area, but very limited in proposed units which are dominated by younger trees and few large snags or large trees which are retained. Suitable medium and large conifer habitat would persist in Congressionally (Wilderness and National Parks) and Administratively (lands unsuitable for timber harvest) Withdrawn Lands, which total over 2.25 million acres (FEMAT 1993, Table IV-3) plus 100-acre owl cores (over 100,000 ac.[USDA/USDI 1994]); marbled murrelet LSRs; Riparian Reserves (630,000 ac [Ibid.]); and some forested lands in the following land allocations West of the Cascade crest: Mapped LSRs, many state parks; military installations, and national and state wildlife refuges. Individual home range is approximately 20 ac. (Johnston 1971 <i>In</i> Zanier 1980). Therefore, the proposed actions would have no measurable effect on population trends at a state or regional scale.
rufous hummingbird	Nests in shrubs and trees near foraging habitat including young second growth, mature and old growth conifer forests. Forages on nectar-producing flowers, which occur in early successional areas. (Healy et. al. 2006, Kemper 2002)	Present in the Project Area. Foraging habitat present over less than 10% of areas within timber harvest units, as units are forested and not in early successional stages. Some small openings occur. Residential areas, or recent harvested area on private or BLM, natural or man-made openings may provide flowering plants. Nesting habitat is present in some edges of units. Some nesting habitat near edges within units would be removed. But since nesting habitat suitability depends on the proximity of trees and shrubs to foraging habitat, it is likely that the proposed action would not result creation or removal of woody vegetation for foraging or nesting habitat. However, since habitat for this species is very widespread (in suburban and forested areas of NW CA, the NW 2/3 of OR and ID, all of WA and over half of BC), population trends at state or regional levels would not be affected by proposed actions.
Allens's hummingbird	breeds only along a narrow strip of coastal California and southern Oregon, in moist coastal areas, scrub, chaparral, and forests (Mitchell 2000, Kemper 2002)	Not expected to occur inland in the Project Area.
Oregon Vesper Sparrow (<i>affinis</i> ssp.)	Open habitats, favoring areas with a high percentage of bare ground and short, sparse herbs or grasses. Similar habitat to the horned lark. It selects open habitats with scattered trees or shrubs for singing perches and escape cover. (Beauchesne 2002)	Habitat not affected by proposed action units, not expected to occur in Project Area.

species	habitat	presence in Farout Project Area and effects
bald eagle	Mature and old-growth forested areas adjacent to large bodies of water with some habitat edge, relatively close (usually <2 km)	Nearby Cow Creek may provide some foraging opportunity, however, repeated visits to Project Area over time have not detected eagles and potential habitat not expected to be affected by proposed action.
Horned Lark (<i>strigata</i> ssp.) ESA candidate	Occurs in short-grass habitats and areas with bare ground. (Kemper 2002, USFWS 2008a)	No known sitings near the Project Area, and not expected to occur.
willow flycatcher (non-listed subspecies or population)	Shrubby, often wet habitats, river corridors; Occurs in moderate density in early-growth clearcuts in western Oregon. In California, high foliage-volume willow cover areas, moist brushy thickets, open second-growth, and riparian woodland, especially with willow. (Kemper 2002, Sedgwick 2000, Craig and Williams 1998)	May occur within Project Area. Proposed action not expected to reduce potential riparian or early successional conifer habitat.
purple finch	Breeds primarily in moist or cool coniferous forests. Also frequently found breeding in mixed coniferous-deciduous forest, edges of bogs, and riparian corridors. Also breeds in deciduous forests, orchards, ornamental plantations, pastures and lawns with scattered conifers and shrubs, hedgerows, and developed areas. Purple finch prefers open wooded habitats. (Wootton 1996)	May occur in Project Area and in or near proposed units. Typically nests on conifer branches. Some nests may be lost if proposed action occurs during nesting season. Suitable conifer habitat would persist in Congressionally (Wilderness and National Parks) and Administratively (lands unsuitable for timber harvest) Withdrawn Lands, which total over 2.25 million acres (FEMAT 1993, Table IV-3) plus 100-acre owl cores (over 100,000 ac.[USDA/USDI 1994]); marbled murrelet LSRs; Riparian Reserves (630,000 ac [Ibid.]); and some forested lands in the following land allocations west of the Cascade crest: Mapped LSRs, many state parks; military installations, and national and state wildlife refuges. Therefore, the proposed actions would have no measurable effect on population trends at a state or regional scale.

Regional Strategies

Both the USDI Fish and Wildlife Service (2008) and Partners in Flight (Altman 1999) consider the state and regional approach a key to the conservation of migratory songbirds. In 1999, strategies for the conservation of the olive-sided flycatcher and the rufous hummingbird and other species were proposed in the form of a regional conservation plan for coniferous forests in Oregon and Washington. This strategy, which “represents the collective efforts of multiple agencies and organizations within ...Partners in Flight,” recognized the Northwest Forest Plan as an effort in the same type of conservation planning process, which approaches management at a regional level. The proposed actions are consistent with the Northwest Forest Plan, which is also designed to provide for the conservation of other forest-related species in the range of the Northern Spotted Owl, such as these songbirds.

Within the Northwest Forest Plan (24,455,300 federal acres), reserved/ withdrawn lands total approximately 78% of the federal land base (USDA/USDI 1994, p. 2-62:65). Not all of the reserves are in or will obtain late-successional forest conditions, but the majority is expected to contribute as suitable habitat towards migratory birds utilizing late successional habitat. In addition, Matrix lands (3,975,300 acres) representing about 16% of the federal land base, contain selected portions of the land managed to retain 15-30% in late-successional forest, which provides additional suitable habitat.

Allocation	Acres	Percent
Congressionally Withdrawn	7,321,000	30
Late Successional Reserves	7,431,000	30
Riparian Reserves	2,628,000	11
Administratively Withdrawn	1,477,000	6
TOTAL	18,857,000	77
Matrix land	3,975,300	16

Compliance with the Migratory Bird Treaty Act.

This act implements various treaties and conventions between the U.S. and other countries that share migratory flyways. With this proposed action, and as prohibited in the Act, there would be no deliberate take (IM OR-2009-018), possession, import, export, transport, sale, purchase, barter or offering of these activities, or possessing migratory birds, including nests and eggs.

Summary

The implementation of the proposed actions is not expected to affect the trend in populations of migratory birds, as established at a state or regional scale. Also, the proposed actions are consistent with planning documents designed to conserve songbirds at those scales.

APPENDIX 9 - STANDARD OPERATING PRACTICES

Standard Operating Practices

As described in Chapter 2 (Section 2.1) Standard Operating Practices are those standard provisions applied to all timber sales. Standard Operating Practices (SOPs), Best Management Practices (BMPs), and Project Design Features (PDFs) were identified and are included here to ensure project compliance with the federal Clean Water Act and higher-level National Environmental Policy Act (NEPA) documents, laws and BLM guidelines. BMPs are specifically required by the Federal Clean Water Act to reduce nonpoint source pollution. The BMPs are methods, measures, or practices selected from Appendix D of the 1995 ROD/ RMP to ensure that water quality would be maintained. Project design features (PDFs) are specific measures included in the site specific design of the Proposal to eliminate or minimize adverse impacts on the human environment. These PDFs were developed by the Farout Project interdisciplinary team with guidance of the 1995 ROD/RMP and resource protection measures specific to the Planning Area.

Soil Productivity, Residual Trees and Coarse Woody Debris

- Piles would be burned in the fall to spring season after one or more inches of precipitation have occurred. Patrol and mop-up of burning piles would occur when needed to prevent treated areas from reburning or becoming an escaped fire.
- Slash piles would not be allowed on roadways, turnouts, shoulders, or on the cut bank.
- Lateral yarding would be required on all units to protect residual leave trees and existing conifer regeneration. Yarding carriages would be required to maintain a fixed position during lateral yarding to reduce damage to the residual stand.

Air Quality / Smoke Management

- All prescribed burning would be managed in a manner consistent with the requirements of the Oregon Smoke Management Plan administered by the Oregon Department of Forestry and the regulations established by the Air Quality Division of the Oregon Department of Environmental Quality.
- Local residents would be advised of prescribed burning on the Glendale Resource Area prior to seasonal burning through news releases.

Cultural Sites

- Cultural resource surveys in Planning Area were conducted and site specific protection measures would be implemented to preserve the integrity of significant cultural resources, referred to as Historic Properties in cultural resource protection

laws and regulations. If cultural resources are found during project implementation, the project would be redesigned to protect the cultural resource values present, or evaluation or mitigation procedures would be implemented based on recommendations from the Resource Area archaeologist with concurrence from the Field Manager and State Historic Preservation Office.

Noxious Weeds

- In order to prevent the potential spread of noxious weeds into the Medford District BLM, the operator would be required to clean all logging, construction, chipping, grinding, shredding, rock crushing, and transportation equipment prior to entry on BLM lands.
- Cleaning shall be defined as removal of dirt, grease, plant parts, and material that may carry noxious weed seeds into BLM lands. Cleaning prior to entry onto BLM lands may be accomplished by using a pressure hose.
- Only equipment inspected by the BLM would be allowed to operate within the Analysis Area. All subsequent move-ins of equipment as described above shall be treated the same as the initial move-in.
- Prior to initial move-in of any equipment, and all subsequent move-ins, the operator shall make the equipment available for BLM inspection at an agreed upon location off Federal lands.
- Equipment would be visually inspected by the Authorized Officer to verify that the equipment has been reasonably cleaned.

Streams and Riparian Zones

- Cleaning culvert inlets in stream channels should occur between the low period of flow (generally June 15 to September 15) in accordance with Oregon Department of Fish and Wildlife (ODFW) in-stream work period guidelines (**Best Management Practices**, RMP p. 161).
- Slumps, intermittent seeps, and other unstable areas would be buffered (no treatment) by leaving one row of overstory trees or a 25 ft diameter (whichever is greatest), from the outer edge of instability, around these areas for soil stabilization (**Best Management Practice**, RMP p. 154).
- Material removed during excavation would only be placed in locations where it cannot enter streams or other water bodies.
- Unless unsafe, trees within Riparian Reserve boundaries (one or two site potential trees) would be directionally felled away from the stream, and upslope trees would not be felled into Riparian Reserves.

- Trees in no-harvest portions of Riparian Reserves that are accidentally knocked over during falling and yarding would be retained on site for fish /wildlife habitat and would not be treated with activity fuels.
- Contractors must prepare a Spill Prevention, Control, and Countermeasure Plan for all hazardous substances to be used in the contract area, as directed by the Authorized Officer. Such plan shall include identification of Purchaser's representatives responsible for supervising initial containment action for releases and subsequent cleanup. Such plans must comply with the State of Oregon DEQ OAR 340-142, Oil and Hazardous Materials Emergency Response Requirements.
- Refueling of chainsaws and heavy equipment would be done no closer than 150 ft of any stream or wet area.
- Foam would not be used within 150 ft of streams and wetlands to control the spread of prescribed fire.

Sedimentation and Soil Compaction

- Prior to October 15 of the same operating season, winterize and rehabilitate temporary routes, landings, corridors, skid trails and other areas of exposed soils by properly installing and/or using water bars, berms, sediment basins, gravel pads, hay bales, small dense woody debris, seeding and/or mulching, to reduce sediment runoff as directed by the Authorized Officer (**Best Management Practices**, RMP p.167).
- Partial suspension (at a minimum) would be required on all units to minimize soil disturbance.

Sedimentation and soil compaction from logging.

- Tractors would not exceed nine feet in width and would be equipped with an integral arch to minimize soils disturbance and compaction. Skid trails including turning points would be 12 ft width on average.
- To minimize soil disturbance the use of blades while tractor yarding would not be permitted to keep soil organics on site. Equipment would walk over as much ground litter as possible to reduce compaction.
- Old skid trails would be used whenever practical and new skid trails would be placed at least 150 ft apart, where topography allows, to reduce the amount of compaction within tractor yarded units. New skid trails, would be located outside the Riparian Reserve whenever possible and would be pre-designated and approved by the Authorized Officer.

- The number of yarding corridors would be minimized to reduce soil compaction and displacement from cable yarding. Corridors would be located approximately 150 ft apart at the tail end.

Sedimentation and Soil Compaction from Roads and Landings

- Temporary route construction and road reconstruction would be limited to dry conditions.
- Landings would be located in approved sites and designed with adequate drainage.
- Ditchline blading would occur to restore proper drainage and road surface blading would occur to maintain the running surface or restore proper drainage.

APPENDIX 10 – PORT ORFORD CEDAR RISK KEY ANALYSIS FOR THE FAROUT PROJECT

Risk Key is from Alternative 2 of the FSEIS for Management of Port Orford Cedar in Southwest Oregon 1/2004

QUESTION		UNIT															
		11-2	11-3	11-4	11-5	13-1	13-2	13-2b	13-3	15-1a	15-2	21-1	21-2	21-3	23-1	23-2	23-3
1a.	Are there uninfected POC within, near ¹ , or downstream of the activity area whose ecological, Tribal, or product use or function measurably contributes to meeting land and resource management plan objectives?	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
1b.	Are there uninfected POC within, near ¹ , or downstream of the activity area that, were they to become infected, would likely spread infections to trees whose ecological, Tribal, or product use or function measurable contributes to meeting land and resource management plan objectives?	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
1c.	Is the activity area within an uninfested 7 th field watershed ² as defined in Alternative 6	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
		<i>If the answer to all three questions, 1a, 1b, and 1c, is no, then risk is low and no POC management practices would be required.</i>															
		<i>If the answer to any of the three questions is yes, continue.</i>															
2.	Will the proposed project introduce appreciable additional risk ³ of infection to these uninfected POC?	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		<i>If no, then risk is low and no POC management practices are required.</i>															
		<i>If yes, apply management practices from the list below [within FSEIS] to reduce the risk to the point it is no longer appreciable, or meet the disease control objectives by other means, such as redesigning the project so that uninfected POC are no longer near or downstream of the activity area. If the risk cannot be reduced to the point it is no longer appreciable through</i>															
		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

<p><i>practicable and cost-effective treatments or design changes, the project may proceed if the analysis supports a finding that the value or need for the proposed activity outweighs the additional risk to POC created by the project.</i></p>																		
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1 - In questions 1a and 1b, "near" generally means within 25 to 50 feet downslope or 25 feet upslope from management activity areas, access roads, or haul routs; farther for drainage features; 100 to 200 feet in streams.

2 - Uninfested 7th field watersheds are listed on Table A12-2 [of FSEIS] as those with at least 100 acres of POC stands, are at least 50% federal ownership, and are free of PL except within the lowermost 2 acres of the drainage.

3 - Appreciable additional risk does not mean "any risk." It means that a reasonable person would recognize risk, additional to existing uncontrollable risk, to believe mitigation is warranted and would make a cost-effective or important difference (see Risk Key Definitions and Examples for further discussion.)

QUESTION		UNIT															
		23-4	23-5	25-1	25-3	25-4	25-5	27-1	27-2	27-3	27-4	35-1	7-1	7-2	19-3A	19-4	20-1
1a.	Are there uninfected POC within, near ¹ , or downstream of the activity area whose ecological, Tribal, or product use or function measurably contributes to meeting land and resource management plan objectives?	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
1b.	Are there uninfected POC within, near ¹ , or downstream of the activity area that, were they to become infected, would likely spread infections to trees whose ecological, Tribal, or product use or function measurable contributes to meeting land and resource management plan objectives?	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
1c.	Is the activity area within an uninfested 7 th field watershed ² as defined in Alternative 6	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
		<i>If the answer to all three questions, 1a, 1b, and 1c, is no, then risk is low and no POC management practices would be required.</i>															
		<i>If the answer to any of the three questions is yes, continue.</i>															
2.	Will the proposed project introduce appreciable additional risk ³ of infection to these uninfected POC?	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		<i>If no, then risk is low and no POC management practices are required.</i>															
		<i>If yes, apply management practices from the list below [within FSEIS] to reduce the risk to the point it is no longer appreciable, or meet the disease control objectives by other means, such as redesigning the project so that uninfected POC are no longer near or downstream of the activity area. If the risk cannot be reduced to the point it is no longer appreciable through practicable and cost-effective treatments or design changes, the project may proceed if the analysis supports a finding that the value or need for the proposed activity outweighs the additional risk to POC created by the project.</i>															
		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

1 - In questions 1a and 1b, "near" generally means within 25 to 50 feet downslope or 25 feet upslope from management activity areas, access roads, or haul routs; farther for drainage features; 100 to 200 feet in streams.

2 - Uninfested 7th field watersheds are listed on Table A12-2 [of *FSEIS*] as those with at least 100 acres of POC stands, are at least 50% federal ownership, and are free of PL except within the lowermost 2 acres of the drainage.

3 - Appreciable additional risk does not mean "any risk." It means that a reasonable person would recognize risk, additional to existing uncontrollable risk, to believe mitigation is warranted and would make a cost-effective or important difference (see Risk Key Definitions and Examples for further discussion.)

QUESTION		UNIT						
		29-1	29-2	30-1	31-1	31-3	31-4	31-5
1a.	Are there uninfected POC within, near ¹ , or downstream of the activity area whose ecological, Tribal, or product use or function measurably contributes to meeting land and resource management plan objectives?	no	no	no	no	no	no	no
1b.	Are there uninfected POC within, near ¹ , or downstream of the activity area that, were they to become infected, would likely spread infections to trees whose ecological, Tribal, or product use or function measurable contributes to meeting land and resource management plan objectives?	no	no	no	no	no	no	no
1c.	Is the activity area within an uninfested 7 th field watershed ² as defined in Alternative 6	no	no	no	no	no	no	no
		<i>If the answer to all three questions, 1a, 1b, and 1c, is no, then risk is low and no POC management practices would be required.</i>						
		<i>If the answer to any of the three questions is yes, continue.</i>						
2.	Will the proposed project introduce appreciable additional risk ³ of infection to these uninfected POC?	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		<i>If no, then risk is low and no POC management practices are required.</i>						
<i>If yes, apply management practices from the list below [within FSEIS] to reduce the risk to the point it is no longer appreciable, or meet the disease control objectives by other means, such as redesigning the project so that uninfected POC are no longer near or downstream of the activity area. If the risk cannot be reduced to the point it is no longer appreciable through practicable and cost-effective treatments or design changes, the project may proceed if the analysis supports a finding that the</i>		n/a	n/a	n/a	n/a	n/a	n/a	n/a

	<i>value or need for the proposed activity outweighs the additional risk to POC created by the project.</i>									
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- 1 - In questions 1a and 1b, "near" generally means within 25 to 50 feet downslope or 25 feet upslope from management activity areas, access roads, or haul routs; farther for drainage features; 100 to 200 feet in streams.
- 2 - Uninfested 7th field watersheds are listed on Table A12-2 [of FSEIS] as those with at least 100 acres of POC stands, are at least 50% federal ownership, and are free of PL except within the lowermost 2 acres of the drainage.
- 3 - Appreciable additional risk does not mean "any risk." It means that a reasonable person would recognize risk, additional to existing uncontrollable risk, to believe mitigation is warranted and would make a cost-effective or important difference (see Risk Key Definitions and Examples for further discussion.)

Risk Key is from Alternative 2 of the FSEIS for Management of Port Orford Cedar in Southwest Oregon
1/2004

QUESTION		Roads / Road Systems (operations and use including temporary route construction and road reconstruction (including associated decommissioning), roadside brushing, drainage improvement, daylighting road maintenance, and log hauling)															
		30-6-32	31-8-29	31-8-29.2	31-8-30	31-8-30.3	31-8-31	31-8-31.1	31-8-31.2	31-8-31.3	31-8-31.4	31-8-31.5	31-8-31.6	31-8-31.7	31-9-10	31-9-11	31-9-11.1
1a.	Are there uninfected POC within, near ¹ , or downstream of the activity area whose ecological, Tribal, or product use or function measurably contributes to meeting land and resource management plan objectives?	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
1b.	Are there uninfected POC within, near ¹ , or downstream of the activity area that, were they to become infected, would likely spread infections to trees whose ecological, Tribal, or product use or function measurable contributes to meeting land and resource management plan objectives?	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
1c.	Is the activity area within an uninfested 7 th field watershed ² as defined in Alternative 6	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
		<i>If the answer to all three questions, 1a, 1b, and 1c, is no, then risk is low and no POC management practices would be required.</i>															
		<i>If the answer to any of the three questions is yes, continue.</i>															
2.	Will the proposed project introduce appreciable additional risk ³ of infection to these uninfected POC?	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		<i>If no, then risk is low and no POC management practices are required.</i>															

<p><i>If yes, apply management practices from the list below [within FSEIS] to reduce the risk to the point it is no longer appreciable, or meet the disease control objectives by other means, such as redesigning the project so that uninfected POC are no longer near or downstream of the activity area. If the risk cannot be reduced to the point it is no longer appreciable through practicable and cost-effective treatments or design changes, the project may proceed if the analysis supports a finding that the value or need for the proposed activity outweighs the additional risk to POC created by the project.</i></p>		n/a															
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1 - In questions 1a and 1b, "near" generally means within 25 to 50 feet downslope or 25 feet upslope from management activity areas, access roads, or haul routes; farther for drainage features; 100 to 200 feet in streams.

2 - Uninfested 7th field watersheds are listed on Table A12-2 [of FSEIS] as those with at least 100 acres of POC stands, are at least 50% federal ownership, and are free of PL except within the lowermost 2 acres of the drainage.

3 - Appreciable additional risk does not mean "any risk." It means that a reasonable person would recognize risk, additional to existing uncontrollable risk, to believe mitigation is warranted and would make a cost-effective or important difference (see Risk Key Definitions and Examples for further discussion.)

Risk Key is from Alternative 2 of the FSEIS for Management of Port Orford Cedar in Southwest Oregon
1/2004

QUESTION		Roads / Road Systems (operations and use including temporary route construction and road reconstruction (including associated decommissioning), roadside brushing, drainage improvement, daylighting road maintenance, and log hauling)															
		31-9-11.4	31-9-11.5	31-9-12	31-9-13.1	31-9-15	31-9-21	31-9-22	31-9-23	31-9-23.1	31-9-23.2	31-9-23.3	31-9-25.1	31-9-25.3	31-9-25.5	31-9-26	31-9-27
1a.	Are there uninfected POC within, near ¹ , or downstream of the activity area whose ecological, Tribal, or product use or function measurably contributes to meeting land and resource management plan objectives?	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
1b.	Are there uninfected POC within, near ¹ , or downstream of the activity area that, were they to become infected, would likely spread infections to trees whose ecological, Tribal, or product use or function measurable contributes to meeting land and resource management plan objectives?	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
1c.	Is the activity area within an uninfested 7 th field watershed ² as defined in Alternative 6	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
		<i>If the answer to all three questions, 1a, 1b, and 1c, is no, then risk is low and no POC management practices would be required.</i>															
		<i>If the answer to any of the three questions is yes, continue.</i>															
2.	Will the proposed project introduce appreciable additional risk ³ of infection to these uninfected POC?	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		<i>If no, then risk is low and no POC management practices are required.</i>															

<p><i>If yes, apply management practices from the list below [within FSEIS] to reduce the risk to the point it is no longer appreciable, or meet the disease control objectives by other means, such as redesigning the project so that uninfected POC are no longer near or downstream of the activity area. If the risk cannot be reduced to the point it is no longer appreciable through practicable and cost-effective treatments or design changes, the project may proceed if the analysis supports a finding that the value or need for the proposed activity outweighs the additional risk to POC created by the project.</i></p>			n/a																														
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1 - In questions 1a and 1b, "near" generally means within 25 to 50 feet downslope or 25 feet upslope from management activity areas, access roads, or haul routes; farther for drainage features; 100 to 200 feet in streams.

2 - Uninfested 7th field watersheds are listed on Table A12-2 [of FSEIS] as those with at least 100 acres of POC stands, are at least 50% federal ownership, and are free of PL except within the lowermost 2 acres of the drainage.

3 - Appreciable additional risk does not mean "any risk." It means that a reasonable person would recognize risk, additional to existing uncontrollable risk, to believe mitigation is warranted and would make a cost-effective or important difference (see Risk Key Definitions and Examples for further discussion.)

Risk Key is from Alternative 2 of the FSEIS for Management of Port Orford Cedar in Southwest Oregon
1/2004

QUESTION		Roads / Road Systems (operations and use including temporary route construction and road reconstruction (including associated decommissioning), roadside brushing, drainage improvement, daylighting road maintenance, and log hauling)											
		31-9-27.6	31-9-35.3	32-8-1.1	32-8-4	route into 11-2	route into 21-3	route into 23-7	route into 29-1	route into 15-1 & 15-2	route into 31-5	33-7-2	Douglas County Rd 27
1a.	Are there uninfected POC within, near ¹ , or downstream of the activity area whose ecological, Tribal, or product use or function measurably contributes to meeting land and resource management plan objectives?	no	no	no	no	no	no	no	no	no	no	no	no
1b.	Are there uninfected POC within, near ¹ , or downstream of the activity area that, were they to become infected, would likely spread infections to trees whose ecological, Tribal, or product use or function measurable contributes to meeting land and resource management plan objectives?	no	no	no	no	no	no	no	no	no	no	no	no
1c.	Is the activity area within an uninfested 7 th field watershed ² as defined in Alternative 6	no	no	no	no	no	no	no	no	no	no	no	no
		If the answer to all three questions, 1a, 1b, and 1c, is no, then risk is low and no POC management practices would be required.											
If the answer to any of the three questions is yes, continue.													
2.	Will the proposed project introduce appreciable additional risk ³ of infection to these uninfected POC?	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		If no, then risk is low and no POC management practices are required.											

<p><i>If yes, apply management practices from the list below [within FSEIS] to reduce the risk to the point it is no longer appreciable, or meet the disease control objectives by other means, such as redesigning the project so that uninfected POC are no longer near or downstream of the activity area. If the risk cannot be reduced to the point it is no longer appreciable through practicable and cost-effective treatments or design changes, the project may proceed if the analysis supports a finding that the value or need for the proposed activity outweighs the additional risk to POC created by the project.</i></p>		n/a											
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1 - In questions 1a and 1b, "near" generally means within 25 to 50 feet downslope or 25 feet upslope from management activity areas, access roads, or haul routes; farther for drainage features; 100 to 200 feet in streams.

2 - Uninfested 7th field watersheds are listed on Table A12-2 [of FSEIS] as those with at least 100 acres of POC stands, are at least 50% federal ownership, and are free of PL except within the lowermost 2 acres of the drainage.

3 - Appreciable additional risk does not mean "any risk." It means that a reasonable person would recognize risk, additional to existing uncontrollable risk, to believe mitigation is warranted and would make a cost-effective or important difference (see Risk Key Definitions and Examples for further discussion.)

Conclusion: No measures or mitigation for Port-Orford-cedar are required.

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GLOSSARY

Air Quality - Refers to standards for various classes of land as designated by the Clean Air Act, P.L. 88-206, Jan. 1978.

Authorized Officer – BLM employee delegated the authority to oversee timber sale contract administration.

Best Management Practices (BMP) - Practices determined by the resource professional to be the most effective and practicable means of preventing or reducing the amount of water pollution generated by non-point sources; used to meet water quality goals (See Appendix D in RMP (USDI BLM 1995)).

Biological Assessment (BA) - Document prepared by or under the direction of BLM concerning listed and proposed species and designated and proposed critical habitat that may be present in a project area(s) and contains the BLM's determination of potential effects of the action on such species and habitat. Biological assessments are required for formal consultations and conferences on "major construction projects." They are recommended for all formal consultations and formal conferences and many informal consultations where a written evaluation of the effects of an action on listed or proposed species and on designated or proposed critical habitat is needed.

Biomass Removal - Removes slashed wood or woody fiber by-products that result from forest and woodland restoration, thinning activities, and fuel treatments to be applied towards bio-energy use and/or products manufactured from material such as posts, poles, and firewood.

Cable yarding - Removes logs by use of wire cable(s) and tower for full or partial suspension log removal from harvest units.

Canopy - More or less continuous cover of branches and foliage formed collectively by adjacent trees and other woody species in a forest stand in the overstory.

Climate Change – Any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from:

- natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;
- natural processes within the climate system (e.g. changes in ocean circulation);
- human activities that change the atmosphere's composition (e.g. through burning fossil fuels) and the land surface (e.g. deforestation, reforestation, urbanization, desertification, etc.) (EPA 2010).

Coarse Woody Debris - Portion of trees that have fallen or been cut and left in the woods. Usually refers to pieces at least 20 inches in diameter.

Compaction - Refers to soil becoming consolidated by the effects of surface pressure often from heavy machinery or vehicle and pedestrian traffic.

Critical Habitat Unit - Under the Endangered Species Act, (1) the specific areas within the geographic area occupied by a federally listed species on which are found physical and biological features essential to the conservation of the species, and that may require special management considerations or protection; and (2) specific areas outside the geographic area occupied by a listed species when it is determined that such areas are essential for the conservation of the species. For further information see ([Federal Register \(57\):1796-1838](#)) for the 1992 CHU designation and [Federal Register \(73\): 47326-47522](#) for the 2008 CHU designation.

Connectivity/ Diversity Block – Manage to provide ecotypic richness and diversity and to provide for habitat connectivity for old growth dependent and associated species within the northern GFMA, maintain a minimum of 25% of each block in late-successional condition, in both long-and short-term. Suitable commercial forestland within blocks would be managed to assure a moderately high level of sustained timber production. Regeneration harvest would be permitted in stands 150 years and older and prescriptions would retain 12-25 trees per acre. The priority prescription in stands less than 150 years would be commercial thinning. Connectivity /Diversity Blocks are present in T32S, R8W, Sections 11, 13, 14, 15, and 23 within the Planning Area.

Cultural Resources - A cultural resource is any definite location or object of past human activity, occupation, or use identifiable through inventory, historical documentation, or oral evidence. Cultural resources can be divided into archaeological, building and structural, and traditional resources.

Cumulative Effect - The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can also result from individually minor, but collectively significant actions taking place over a period of time.

Diameter at Breast Height (dbh) - The diameter of a tree 4.5 feet above the ground on the uphill side of the tree.

Dispersal Habitat - Forested habitat greater than 40 years old, with canopy closure at least 40%, with average diameters greater than 11 inches and that has flying space for owls in the understory. It provides temporary shelter for owls moving through the area between suitable habitat and may offer some opportunities for owls to find prey, but does not provide all of the requirements to support an owl throughout its life. This habitat type has adequate cover to facilitate movement between blocks of suitable NRF habitat.

Drainage - In this document the term refers to the entire area that contributes water to a drainage system or stream at the seventh-field watershed scale (HUC 7).

Effects (or Impacts) - Environmental consequences as a result of a proposed action. Effects provide the scientific and analytical basis for comparison of alternatives. Effects might be either direct (caused by the action and occur at the same time and place) or indirect (occurring later in time or at a different location, but are reasonably foreseeable or cumulative results of the action).

Effects and impacts as used in this EA are synonymous. Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic quality, historic, cultural, economic, social, or healthy effects, whether direct, indirect, or cumulative. Effects might also include those resulting from actions that might have both beneficial and detrimental effects, even if on the balance it appears that the effects would be beneficial.

Endangered Species - Any species defined through the Endangered Species Act of 1973 as amended, as being in danger of extinction throughout all or a significant portion of its range and published in the Federal Register.

Environmental Assessment (EA) - A statement of the environmental effects of a proposed action and alternatives to it. It is required for major federal actions under Section 102 of NEPA and is released to the public and other agencies for comment and review. It is a formal document that must follow the requirements of NEPA, CEQ guidelines, and directives of the agency responsible for the project proposal.

Erosion - Detachment or movement of soil or rock fragments by water, wind, ice, or gravity. Accelerated erosion is more rapid than normal, natural, or geologic erosion, primarily resulting from the activities of people, animals, or natural catastrophes.

Evolutionary Significant Unit - The National Marine Fisheries Service (NMFS, NOAA Fisheries) definition is as follows: a population must satisfy two criteria to be considered an ESU: (1) it must be substantially reproductively isolated from other conspecific population units; and (2) it must represent an important component in the evolutionary legacy of a species. 69 Fed. Reg. at 31355

Fire Hazard - The ability of a fire to spread once ignition has occurred. Hazard is rated using a numerical point system for each of the following factors: slope, aspect, position on slope, adjacent fuel model, ladder fuels, and estimated fuel loading. A point summary is then calculated and a rating of high, moderate or low is assigned.

Fire Risk - The probability of ignition. A rating of high, moderate or low is assigned based on the concentration and/or frequency of human presence and on historic lightning occurrence.

Flame length - Distance measured from the tip of the flame to the middle of the flaming zone at the base of the fire. It is measured on a slant when the flames are tilted due to effects of wind and slope (NWCG, 1994).

Floodplain - The lowland and relatively flat area adjoining inland and coastal waters, including, at a minimum, areas that are subject to a 1% or greater chance of flooding in any given year.

Forage - All browse and non-woody plants that are available to livestock or game animals and used for grazing or harvested for feeding.

Forest canopy - Stratum containing the crowns of the tallest vegetation present in the stand, usually above 20 feet in height (NWCG, 1994).

Forb - Any herb other than grass.

Fuels - Combustible wildland vegetative materials present in the forest which potentially contribute to a significant fire hazard.

Fuel Load - Measure of the amount of fuel in a given area, generally expressed in tons per acre (NWCG, 1994).

Fuels Management - Manipulation or reduction of fuels to meet Forest protection and management objectives while preserving and enhancing environmental quality.

Handpile/burning - Prescribed fire used to remove man-made or natural collections of concentrated woody debris. Generally the fire is hotter than in broadcast burning or underburning.

Historic Property - According to the National Historic Preservation Act, an Historic Property is any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places. Historic Properties may include artifacts, records, or traditional cultural properties (TCPs).

Impacts - A spatial or temporal change in the environment caused by human activity. See effects.

Indirect Attack - Method of fire suppression in which the fireline is located a considerable distance away from the fire's active edge. Generally employed in the case of fast moving or high intensity fire. The fuel between the control line and the fire's edge is usually backfired, but occasionally the main fire is allowed to burn up to the fireline, depending on conditions (NWCG, 2005).

Indirect effects - Secondary effects which occur in locations other than the initial action or significantly later in time.

Intermittent Stream - Any nonpermanent flowing drainage feature having a definable channel and evidence of scour or deposition. This includes what are sometimes referred to as ephemeral streams if they meet these two criteria.

Lop & Scatter - scattering of tree limbs and small diameter logs to facilitate its decomposition.

Matrix - Designated under the 1995 Medford District Resource Management Plan, Matrix lands were identified as areas where timber harvesting would occur and comprise approximately 20% of the total 24 million acres of federal lands identified in the Northwest Forest Plan. There are additional management restrictions, such as for Riparian Reserves that overlap Matrix lands and retaining at least 15% of the watershed in late successional forest patches. The desired condition in Matrix lands on the Medford Bureau of Land Management is a patchwork of different aged forests created by thinning younger forest stands to assure high levels of volume production and regeneration harvesting older forest stands on an approximate 100 year rotation length.

National Environmental Policy Act of 1969 (NEPA) - This law requires the preparation of environmental impact statements for every major Federal Action which causes a significant effect on the quality of the human environment.

Nesting, Roosting, & Foraging Habitat (NRF) – Habitat used by owls for nesting, roosting and foraging and is frequently referred to as “suitable habitat”. NRF also functions as dispersal habitat. Suitable habitat in SW Oregon is typified by mixed-conifer habitats, recurrent fire history, patchy habitat components, and has a higher incidence of wood rats, which is a high quality spotted owl prey species. Suitable habitat in southwest Oregon varies greatly. It may consist of somewhat smaller trees and tree species are more diverse within each stand than owl habitat in the northern west-side Oregon BLM districts and national forests. Generally this habitat is at least 80-years of age (depending on stand type and structural condition), includes a moderate to high canopy, is multi-storied and has sufficient snags and down wood to provide for nesting, roosting and foraging owls, and for prey species habitat. The best quality suitable habitat has large old trees (greater than 30 inches in diameter) with cavities, a high incidence of larger trees with various deformities, including mistletoe, large snags, large accumulations of fallen trees and wood on the ground; and flying space (Thomas et al. 1990).

No-Action Alternative - The No-Action alternative is required by regulations implementing the National Environmental Policy Act (NEPA) (40 CFR 1502.14). The No-Action alternative provides a baseline for estimating the effects of other alternatives. When a proposed activity is being evaluated, the No-Action alternative discusses conditions under which current management direction would continue unchanged.

Non-attainment - Failure of a geographical area to attain or maintain compliance with ambient air quality standards.

Noxious Weeds - Rapidly spreading plants that can cause a variety of major ecological or economic impacts to both agriculture and wildland.

Peak Flow - The highest amount of stream or river flow occurring in a year or from a single storm event.

Perennial Streams - Streams that flow continuously throughout the year.

Prescribed Burning - The intentional application of fire to wildland fuels in either their natural or altered state. Burning is conducted under such conditions as to allow the fire to be confined to a predetermined area and to produce an intensity of heat and rate of spread required to meet planned objectives (e.g., silvicultural, wildlife management, reduction of fuel hazard, etc.).

Recovery Action 32 (RA 32) - The U.S. Fish and Wildlife Service issued a Recovery Plan for the Northern Spotted Owl (NSO) in 2008. Included in the recovery plan are numerous *Recovery Actions*. Recovery Actions are recommendations to guide the activities needed to accomplish the recovery objectives and ultimately lead to delisting of the species. Recovery Action 32 recommends implementation agencies maintain substantially all of the older and more structurally complex multi-layered conifer forests on Federal lands in the Olympic Peninsula, Western Washington Cascades, Western Oregon Cascades, Oregon Coast Range, Oregon and California Klamath, and California Coast Provinces, allowing for other threats, such as fire and insects, to be addressed by restoration management actions. These forests are characterized as having large diameter trees, high amounts of canopy cover, and decadence components such as broken topped live trees, mistletoe, cavities, large snags, and fallen trees.

Resource Management Plan (RMP) - A land use plan prepared by the BLM under current regulations in accordance with the Federal Land Policy and Management Act. (See USDI, BLM 1995).

Riparian Reserves - Designated under the 1995 Medford District Resource Management Plan, this land use allocation consists of the stream, the area of the active stream channel, the width of the 100-year floodplain, and the outer edges of the riparian vegetation. Riparian widths vary from one site-potential tree length (at least 100 ft) for seasonal or intermittent streams or up to two site-potential tree lengths (at least 300 ft) for fish bearing streams.

Road Maintenance - Activities on an existing road to keep a road at its original design standard. Typical maintenance would include, but is not limited to: 1/ blading and shaping; 2/ cleaning of ditches, catch basins and culverts; 3/ brush cutting and vegetation removal from roadway; 4/ pot hole repair; 5/ surface replacement; 6/ culvert replacement; 7/ slide removal; and 8/ daylighting.

Road Reconstruction - Restores a road to its original or modified condition.

Sediment - Any material carried in suspension by water, which would ultimately settle to the bottom. Sediment has two main sources: from the water channel itself and from disturbed upland sites.

Slash - The residue on the ground following felling and other silvicultural operations and/or accumulating there as a result of a storm, fire girdling, or poisoning of trees.

Snag - A standing dead tree usually without merchantable value for timber products, but having characteristics of benefit to cavity nesting wildlife species.

Soil Compaction - An increase in bulk density (weight per unit volume) and a decrease in soil porosity resulting from applied loads, vibration, or pressure.

Soil Productivity - Capacity or suitability of a soil for establishment and growth of a specified crop or plant species, primarily through nutrient availability.

Sub-watershed - In this document the term refers to the entire area that contributes water to a drainage system or stream at the sixth-field watershed scale (HUC 6). There are three sixth field watersheds in the Farout Project Planning Area which are Gold Mountain (16,382 acres), Elk Valley (14,654 acres), and Bear Creek (13,856 acres) of the West Fork Cow Creek fifth field watershed and Twelve Miles Creek (24,032 acres) of the Middle Fork Coquille fifth field watershed.

Surface Erosion - The detachment and transport of soil particles by wind, water, or gravity. Surface erosion can occur as the loss of soil in a uniform layer (sheet erosion), in many rills or dry rattle.

Threatened Species - Any species of plant or animal which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range, and which has been designated in the Federal Register as such. In addition, some states have declared certain species in their jurisdiction as threatened or endangered.

Tractor yarding - Removes logs from harvest units by use of tracted equipment utilizing full or partial suspension. Tractor equipment can travel by way of rubber tires or tracks.

Traditional Cultural Property - An area that is eligible for inclusion in the National Register of Historic Places because of its association with cultural practices or beliefs of a living community. Traditional Cultural Properties (TCPs) are rooted in that community's history and are important in maintaining the continuing cultural identity of the community.

Understory - Vegetation (trees or shrubs) growing under the canopy formed by taller trees.

Underburning - The use of prescribed fire, most often below an overstory canopy to remove excess forest fuels. Generally conducted in the spring months and a cooler fire than broadcast burning.

Water Quality - The chemical, physical and biological characteristics of water.

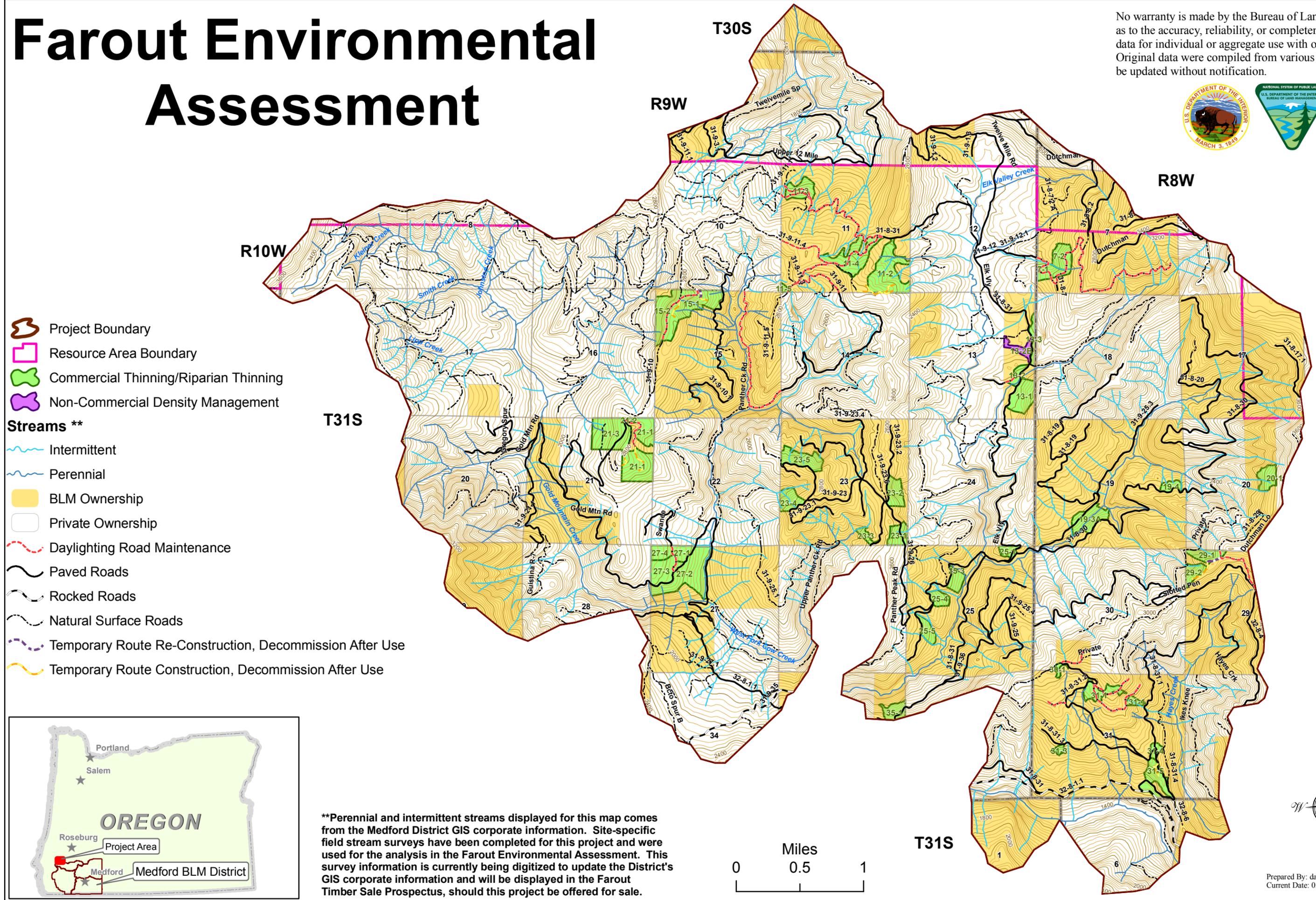
Watershed - Entire area that contributes water to a drainage system or stream. The term refers to the fifth-field scale (HUC 5) in this document. The Farout Project Planning Area is contained within a portion of the West Fork Cow Creek fifth field watershed.

Water Yield - The total volume of surface runoff, measured as stream discharge that leaves a sub-watershed area. Increased water yield is primarily a result of reduced evapotranspiration and interception within the watershed, and can persist for one to two decades following harvest activity depending on the rate of vegetative recovery. As forests regenerate, water yields generally decrease to pre-treatment levels within two to three decades.

Yarding - The act or process of moving logs to a landing.

Farout Environmental Assessment

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.



- Project Boundary
- Resource Area Boundary
- Commercial Thinning/Riparian Thinning
- Non-Commercial Density Management

- Streams ****
- Intermittent
 - Perennial
 - BLM Ownership
 - Private Ownership
 - Daylighting Road Maintenance
 - Paved Roads
 - Rocked Roads
 - Natural Surface Roads
 - Temporary Route Re-Construction, Decommission After Use
 - Temporary Route Construction, Decommission After Use



**Perennial and intermittent streams displayed for this map comes from the Medford District GIS corporate information. Site-specific field stream surveys have been completed for this project and were used for the analysis in the Farout Environmental Assessment. This survey information is currently being digitized to update the District's GIS corporate information and will be displayed in the Farout Timber Sale Prospectus, should this project be offered for sale.

