U. S. Department of the Interior
Bureau of Land Management
Medford District
Butte Falls Resource Area

Flounce Around Timber Sale Environmental Assessment

EA Number OR115-05-08

Project Location: T33S, R1E, Sections 1, 11, 23, 27, and 35
T33S, R2E, Sections 3, 4, 5, 8, 9, 17, 19, and 31
T32S, R2E, Sections 32 and 33
Willamette Meridian, Jackson County, Oregon

The Butte Falls Resource Area is proposing timber harvest on up to 503 acres located in the Lost Creek and Lower Big Butte Creek watersheds. Proposed silviculture treatments are density management, selective cut, and regeneration harvest. Road work associated with the proposed silviculture treatment activities is road renovation, improvement, closure, and decommissioning; helicopter landing construction; and temporary operator spur road construction. This project is within Matrix, Big Game Winter Range and Elk Management Area, and Visual Resource Management Class II land use allocations. The timber sale would help meet the Medford District annual sale quantity goals established through the Medford District Resource Management Plan and the Northwest Forest Plan.

This Environmental Assessment for Flounce Around was prepared utilizing a systematic interdisciplinary approach integrating the natural and social sciences and the environmental design arts with planning and decision making.

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Acting Butte Falls Field Manager

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Date:

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1.0 Purpose of and Need for Action

1.1 Introduction

The Medford District Bureau of Land Management, Butte Falls Resource Area (BLM) proposes to implement forest management activities in the Lost Creek and Lower Big Butte watersheds. The proposed projects are silviculture treatments and treatment-related road projects, such as road renovation, road improvement, road decommissioning, road closures, and temporary spur road construction.

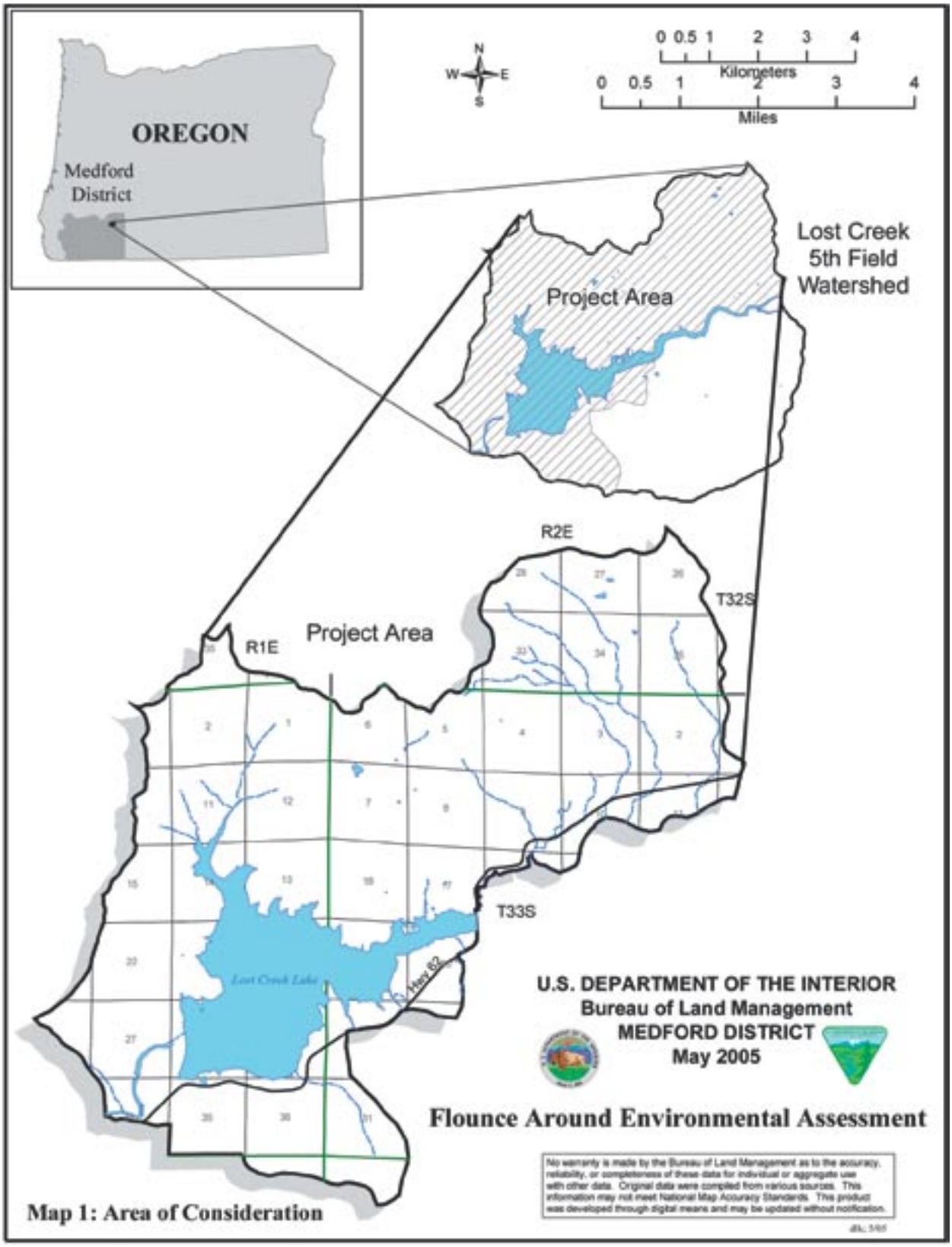
The project area is 21,380 acres in size. Land ownership is a mix of BLM, US Army Corps of Engineers, US Forest Service, State of Oregon, private industrial forest companies, and other private land owners (see Table 1.1).

Table 1.1. Land Ownership/Jurisdiction within the Flounce Around Project Area

Land Owner	Acres	Percent
BLM	7,952	37
US Army Corps of Engineers	2,965	14
Private Industrial Timber Companies	8,070	38
Other (State, Private and US Forest Service)	2,393	11
Total	**21,380**	**100**

Silviculture treatments would occur within Matrix lands, as designated in the Record of Decision for the Medford District Resource Management Plan (ROD/RMP) and Record of Decision for the Northwest Forest Plan (NWFP) (USDA and USDI 1994, 7). All projects would be located on public lands administered by the BLM (see Map 1 for project location).

This Environmental Assessment (EA) has been prepared for the Butte Falls Resource Area's proposed Flounce Around Timber Sale. An EA is an analysis of potential environmental impacts that could occur as the result of the implementation of a federal action. The EA assists the Agency in project planning, in ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any "significant" impacts could result from analyzed actions. "Significance," as defined by NEPA, is found in regulation 40 CFR §1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement or a Finding of No Significant Impact (FONSI). The FONSI is a document that briefly presents the reasons why implementation of the proposed action would not result in "significant" environmental impacts (effects) beyond those already addressed in the Medford District Proposed Resource Management Plan/Environmental Impact Statement (PRMP/EIS), October 1994. After the FONSI is signed, a Decision Record would be completed. However, Forest Management Regulation 43 CFR §5003.2 states "[w]hen a decision is made to conduct an advertised timber sale; the notice of such sale shall constitute the decision document." This notice would be placed in the *Medford Mail Tribune*, a daily newspaper of general circulation in Medford, Oregon and constitutes a decision document with authority to implement the proposed action.



Map 1: Area of Consideration

1.2 Purpose

The purpose of the Flounce Around Project is to provide a sustainable supply of timber, reduce existing high stand densities within forested stands, and improve water quality through road-related projects (e.g., road upgrades, road closures) in the project area. The proposed actions would meet the goals and objectives of the Medford District RMP by contributing to the District's decadal Probable Sale Quantity while providing a healthy forest ecosystem with habitat that supports populations of native species and includes protection for riparian areas and water bodies (USDI 1995, 16-17). In addition, the proposed action is designed to meet objectives addressed in the Lost Creek Watershed Analysis (LCWA) and Lower Big Butte Watershed Analysis (LBBWA), such as timber stand improvement, forest health, and maintenance and restoration of water quality. These recommendations have been incorporated into project proposals presented in this EA.

1.2.1 Project Objectives

- Produce a sustainable supply of timber and other forest commodities that provide jobs and contribute to community stability (RMP p. 38) by
  - Applying a modified, even-aged treatment to produce stand conditions that include wood of desired quality, quantity, and value (RMP p. 181);
  - Applying structural retention treatments to meet structural, functional, and growth objectives (RMP p. 183); and
  - Applying commercial thinning (density management) treatments to increase recoverable timber production and meet structural diversity objectives (RMP p. 185) (see Section 2.4.1 for treatment descriptions).
- Improve forest ecosystem health, diversity, and resiliency (RMP p. 44, 233; LCWA p. 75-77; LBBWA p. 52) by
  - Providing 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 (down logs, snags, and large trees) (RMP p. 39), and
  - Controlling existing infestations and discouraging the spread of nonnative and noxious weeds throughout the watershed (RMP p. 92; LCWA p. 76; LBBWA p. 52-53).
- Reduce the occurrence of road-generated sediment (RMP p. 22, 28, 160, 163-165; LCWA p. 85; LBBWA p. 57) by
  - Upgrading selected stream crossings to meet 100-year flood standards (RMP p. 28, 87; LCWA p. 81; LBBWA p. 57);
  - Considering decommissioning roads to improve hydrologic and riparian function (RMP p. 165; LCWA p. 83-85; LBBWA p. 57); and
  - Managing the transportation system to minimize sediment delivery to streams (RMP p. 28, 160-165; LCWA p. 84-85; LBBWA p. 57-58).
- Manage for the conservation of Federal candidate and Bureau Sensitive species and their habitats so as not to contribute to the need to list and to contribute to the recovery of the species (RMP p. 50-51, LCWA p. 81; ROD to Remove or Modify Survey and Manage 2004) by
  - Providing connectivity (along with other allocations, such as Riparian Reserves) between Late-Successional Reserves (RMP p. 38) and
  - Providing habitat for a variety of organisms associated with both late-successional and younger forests (RMP p. 38).

1.3 Need

1.3.1 Forest Condition

In the proposed project area, many forest stands are overstocked with more trees than the site has water, nutrients, and growing space to sustain. There is a need for a reduction in the number of trees per acre toward levels that would provide for a productive, diverse, and resilient forest. In overstocked forest stands, the largest trees typically experience increased stress during drought periods due to competition with smaller trees for limited amounts of water and nutrients. This environmental stress can reduce tree vigor and increase the potential for tree mortality. The Lost Creek Watershed Analysis identified concerns for declining forest health within the project area (USDI 1998, 41). Where stand conditions allow, management actions would be targeted at developing and maintaining large healthy trees to insure structural diversity and the biological benefits for dependent species are maintained. Forest stands with declining growth rates or deteriorating due to disease or other factors would have treatments prescribed to insure the reestablishment of conifer and hardwood species and the retention of structural and habitat niches.

1.3.2 Northern Spotted Owl Critical Habitat Units

Prior to the ROD/RMP and the NWFP, the US Fish and Wildlife Service (USFWS) designated critical habitat to protect the northern spotted owl as critical habitat units (CHUs) across Washington, Oregon, and northern California. The ROD/RMP and the NWFP designated a network of reserves (late-successional, riparian, congressional, and administrative) to provide habitat for northern spotted owl recovery. These reserves were not identical to the CHUs designated by the USFWS. This resulted in the RMP designating areas within the CHUs as Matrix lands which are allocated to the production of a sustainable supply of timber and other forest commodities. The USFWS concluded in its Biological Opinion for the Medford District PRMP/EIS, “the implementation of the PRMP would not constitute destruction or adverse modification of critical habitat based on the overall reserve network…” (USDI 1994, 4-78). A recent court ruling (*Gifford Pinchot Task Force* v *USFWS*) determined the USFWS definition of “destruction or adverse modification” of critical habitat in its regulations did not match the language of the Endangered Species Act. Because of this court ruling, there is currently uncertainty on whether the USFWS will allow harvest treatments within these CHUs, and there is a need to analyze alternatives which address this uncertainty.

1.3.3 Forest Products

The Medford District ROD/RMP recognized the need for a sustainable supply of timber and other forest products from forest ecosystems. Providing forest products will help maintain the stability of local and regional economies and contribute valuable resources to the national economy on a predictable and long-term basis (USDI 1995, 4). The alternatives being considered would contribute two to five million board feet toward meeting this need.

1.3.4 Summary

The combination of proposed treatments would begin to develop a landscape with productive, diverse, and resilient forests that contribute a sustainable supply of timber to the local community. Throughout the project area, healthy plant communities with a diversity of trees sizes and species would provide habitat and connectivity for native plant and animal species. Existing road conditions would begin to improve and the amount

of road-related sediment entering the streams would be reduced. Effects on designated critical habitat within the project area would be determined.

1.4 Legal Requirements

1.4.1 Conformance with Existing Land Use Plans and Other Documents

The Proposed Action was developed to be in conformance with the BLM land use plans for the subject areas. The proposed projects are consistent with management objectives for public lands identified in the following:

- *Record of Decision and Resource Management Plan for the Medford District* (ROD/RMP), approved June 1995
- *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (NWFP), approved April 13, 1994
- *Record of Decision to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines in Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (S&M), approved March 2004
- *Record of Decision Amending Resource Management Plans for Seven Bureau of Land Management Districts and Land and Resource Management Land for Nineteen National Forests Within the Range of the Northern Spotted Owl* (ACS), approved March 2004.

1.4.2 Relationship to Statutes, Regulations, and Other Plans

The Proposed Action and alternatives are in conformance with the direction given for the management of public lands in the Medford District by the following:

- **Oregon and California Lands Act of 1937 (O&C Act)**. Requires the BLM to manage O&C lands for permanent forest production, in accord with sustained-yield principles. Management of O&C lands must also protect watersheds, regulate streamflow, provide for recreational facilities, and contribute to the economic stability of local communities and industries.
- **Federal Land Policy and Management Act of 1976 (FLPMA)**. Defines BLM's organization and provides the basic policy guidance for BLM's management of public lands.
- **National Environmental Policy Act of 1969 (NEPA)**. Requires the preparation of environmental impact statements for Federal projects which may have a significant effect on the environment.
- **Endangered Species Act of 1973 (ESA)**. Directs Federal agencies to ensure their actions do not jeopardize threatened and endangered species.
- **Clean Air Act of 1990 (CAA)**. Provides the principal framework for national, state, and local efforts to protect air quality.
- **Archaeological Resources Protection Act of 1979 (ARPA)**. Protects archaeological resources and sites on federally-administered lands. Imposes criminal and civil penalties for removing archaeological items from federal lands without a permit.
- **Clean Water Act of 1987 (CWA)**. Establishes objectives to restore and maintain the chemical, physical, and biological integrity of the nation's water.

- **Medford District Integrated Weed Management Plan of 1998**. Provides a proactive ecosystem-based approach to reduce populations of alien plant species to a level which will allow for the restoration of native plant species, and provide for overall ecosystem health.

1.5 Decisions to be Made Based on the Analysis

The Butte Falls Resource Area Field Manager must decide if the impacts of implementing the Proposed Action or the alternatives would result in significant effects to the human environment, thus requiring the preparation of an environmental impact statement before proceeding with the Proposed Action. If the impacts are determined to be within those impacts analyzed in the Medford District PRMP/EIS and the NWFP, or otherwise determined to be insignificant, a FONSI can be issued and a decision implemented.

If the decision-maker should decide to select one of the action alternatives, the analysis in this EA would be used to determine where harvesting and other landscape treatments could occur.

1.6 Scoping

1.6.1 Summary of Scoping Activities

Scoping letters for the original Flounce Around Project EA (EA# OR115-03-01) were sent to adjacent landowners and interested publics. The letter requested comments concerning issues that would be addressed in the EA. Seven response letters were received. These letters can be viewed at the Medford District BLM Office, Butte Falls Resource Area. After publication of the original EA, one letter offering comments on the EA was received and those comments were incorporated into the following list of issues and concerns:

- Harvesting large trees
- Hiking trails
- Bald eagles
- General Environmental Assessment format
- Road construction, decommissioning, and road repair
- Fuels reduction; acreage, location and soil type
- Maps
- Coarse woody material
- Noxious weeds
- Aquatic conservation
- Fire Hazard
- Cumulative effects
- Soil

1.6.2 Issues Identified through the Scoping Process to be analyzed in this EA

An “issue” is an effect (or perceived effect, risk, or hazard) on physical, biological, social, or economic resources. These issues provide a focus for environmental analysis and a basis for resulting decisions. The major issues brought forward were used to formulate alternatives, identify appropriate design features, or analyze environmental effects. Issues were identified through the initial scoping effort and through the interdisciplinary

team process are listed below. Indicators or measurements that are suggested are used to compare how the alternatives address the issues. Chapter 2 contains a comparison summary of the alternatives and their response to the issues.

1.6.2.1 Issue 1: Forest Condition - Dense and Declining Forest Stands

The forest stands proposed for density management and selective harvest have more trees than the site can sustain. Removal of competing and poor vigor trees would reduce competition and provide for additional site resources (water, nutrients, sunlight and growing space) for the remaining trees. Forest stands with high tree densities result in declining tree vigor and growth, increased tree mortality, and an increased susceptibility to insect attack, root disease infection and stand replacing wildfires. A portion of these forest stands are proposed for regeneration harvest and have growth rates that have declined and/or are deteriorating with the integrity of the stand threatened.

Indicators for measuring this issue are:
- Acres receiving silvicultural treatment
- Change in the number/density of trees per acre
- Change in growth of timber stands after treatment

1.6.2.2 Issue 2: Silviculture treatment within Northern Spotted Owl Designated Critical Habitat Units

In October 2003, the US Fish and Wildlife Service issued a programmatic Biological Opinion for timber sales on Rogue River and Siskiyou National Forest and Medford District BLM lands occurring in fiscal years 2004 through 2008. A lawsuit in 2004 (*Gifford Pinchot Task Force* v *USFWS*) questioned whether spotted owls were being adequately protected by actions which were allowed to proceed in northern spotted owl critical habitat units (CHU). The Ninth Circuit Court ruled that the critical habitat analysis in the Biological Opinion was “irredeemably flawed.” The original Flounce Around Project EA analysis of effects to northern spotted owl critical habitat units deferred to the analysis contained in the programmatic Biological Opinion. Northern spotted owl critical habitat was also raised as a concern in one comment letter received on the original EA. The BLM decided sufficient concern exists about harvesting in critical habitat units that it should be included as an issue in this EA.

Indicators for measuring this issue are:
- Acres of proposed for silviculture treatment within northern spotted owl designated critical habitat units

1.6.3 Other Issues Identified but not Addressed in Detail

The following issues were identified but were determined to be minor issues. These issues will be addressed but not in great detail.

1.6.3.1 Road-Related Sediment

The Lost Creek Watershed Analysis identified the predominant source of sediment to creeks within this project area as coming from roads, landings, and skid roads. Road work associated with the silviculture treatments are designed to stabilize the drainage structures, protect running surfaces from erosion, reduce runoff and increase infiltration, and improve access needs for management activities in the future. Proposed treatment-related road projects include road improvements, renovations, closures, and decommissioning would reduce the risk of road-related sediments on roads proposed

for these activities. No new roads are proposed for construction and new temporary spur roads would be fully decommissioned after use.

1.6.3.2 Fish, Aquatic Habitat, and Riparian Reserves

Most proposed silviculture treatments and associated road projects would occur above the Lost Creek Dam. Coho salmon are only present in the Rogue River, below Lost Creek Dam, and in Little Butte Creek. There are no coho salmon located above the dam. The activities occurring above the dam would have no affect to coho salmon because all impacts would stop at the Lost Creek Reservoir. The four silviculture treatment units and related road work located below the dam would have little to no impact to coho salmon. Only one stream is located near a proposed log landing and it is unlikely any sediment would reach the Rogue River. Resident trout are the only fish found in the streams above the dam. Sediment will likely enter these streams from the proposed road work. Anticipated effects to trout include short-term (less than one year) disturbance of feeding behavior and displacement. Either of these effects would not cause physiological harm or affect the trout population in the area. For these reasons, aquatic and riparian resources were not identified as issues. For more detail on existing conditions in the project area and impacts from the proposed actions, see Appendix F, Fish.

2.0 Alternatives

2.1 Introduction

This chapter describes the two proposed action alternatives. In addition, a “No Action” alternative is presented to form a baseline for analysis. This chapter also outlines project mitigation which is designed into the alternatives. Project Design Features (PDFs) are included for the purpose of reducing or eliminating anticipated environmental impacts.

The Butte Falls Resource Area has developed these action alternatives to achieve the project objectives identified in the Medford District ROD/RMP (p. 16) and the Lost Creek and Lower Big Butte Watershed Analyses (LCWA p. 74-86; LBBWA p. 52-60). After receiving comments from the public through the scoping process, the alternatives were developed by a team of resource specialists. During development of the alternatives, approximately 645 acres were considered for harvest entry but were eliminated from consideration due to current stand conditions, riparian reserves, deferred watersheds, environmental education areas, or wildlife concerns. For specific operational inventory units considered but deferred from entry at this time, see Table H-1 in Appendix H, Unit Summaries).

2.2 Alternatives Considered But Eliminated from Detailed Analysis

2.2.1 Alternatives 4 and 5 from the Original Flounce Around Project Environmental Assessment

The original Flounce Around Project EA included four action alternatives. Alternatives 2 and 4 contained the same proposed silviculture treatment. Alternatives 3 and 5 also contained the same proposed silviculture treatment. The differences between the

alternatives were in the treatment methods for the proposed fuels reduction projects. Because the decision to implement the fuels reduction project was made in the original EA, it is not necessary to reanalyze that project in this document. The fuels reduction project is currently being completed and will be included in cumulative effects analysis. The removal of the fuels projects from Alternatives 4 and 5 would make those alternatives identical to Alternatives 2 and 3 in this EA.

2.3 Alternative 1 – No Action

The No Action alternative describes a baseline against which the effects of the action alternatives can be compared. If this alternative was selected, there would be no silviculture treatments and no road renovation, improvement, or closures within the project area at this time. Harvest would occur at another location within Matrix lands under separate NEPA analysis in order to meet harvest commitments identified in the ROD/RMP (p. 73). Selection of the No Action Alternative would not constitute a decision to reallocate these lands to noncommodity uses. Future harvesting in this area would not be ruled out and could be analyzed under a later EA.

2.4 Alternative 2

The intent of this alternative is to achieve the goals, objectives, and desired future condition for the timber stands as specified in the Medford District ROD/RMP (p. 72-75) and the Northwest Forest Plan. On matrix lands, emphasis is placed on maximizing commodity production of the timber resource. This alternative is also intended to reduce road-related sedimentation by improving existing road conditions and decommissioning roads no longer needed for access. This alternative includes the projects described below (see Map 2).

2.4.1 Silviculture Treatments and Related Road Projects

2.4.1.1 Silviculture Treatments

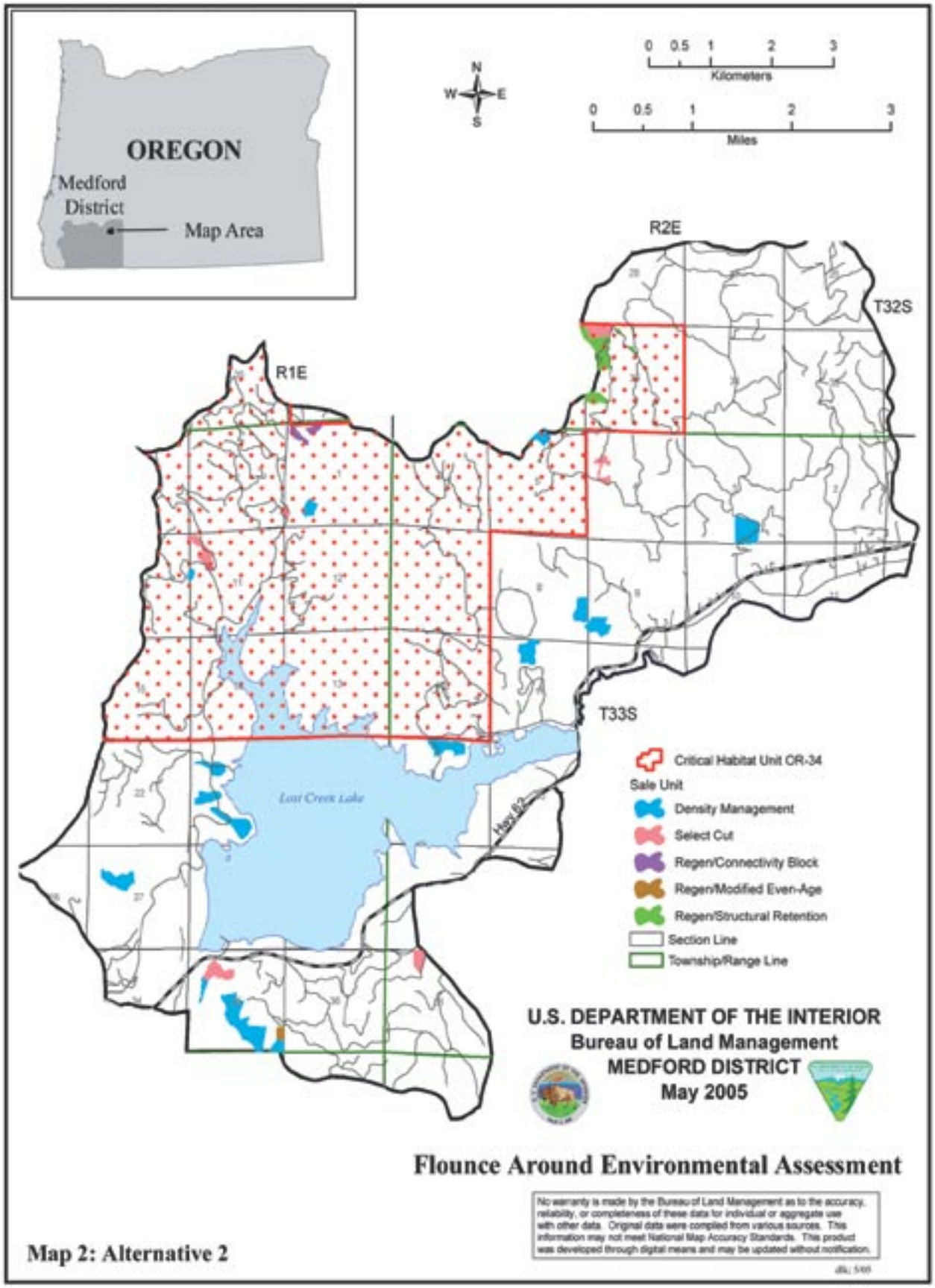
The overall scope of this action alternative covers approximately 500 acres of BLM-administered lands designated as Matrix. Matrix lands include Southern General Forest Management Area (SGFMA), Northern General Forest Management Area (NGFMA), and Connectivity/Diversity Blocks. Three treatment methods would be used in this alternative:

Density Management

Density management is proposed on 340 acres. This treatment targets the removal of individual trees to maintain or enhance forest diversity and growth. Removal of smaller trees and trees in direct competition with healthy codominant and dominant trees would redirect site resources toward the development and maintenance of large healthy trees. Canopy closure following treatment would be approximately 50 to 60 percent.

Selection Harvest

Selection harvest is proposed on 65 acres. This treatment would remove poor vigor trees from all diameter classes. Stand densities would be reduced, freeing up site resources (water, nutrients, light, and growing space) for the remaining trees. Tree crown ratio (the ratio of live crown to tree height) and form, and desired basal area, not spacing, would be the primary factors in determining the trees to be left or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Critical Habitat Unit OR-34
Sale Unit
Density Management
Select Cut
Regen/Connectivity Block
Regen/Modified Even-Age
Regen/Structural Retention
Section Line
Township/Range Line
U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management
MEDFORD DISTRICT
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Flounce Around Environmental Assessment
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Map 2: Alternative 2

removed. Canopy closure would range from approximately 50 to 60 percent. Stand structure would be multi-aged and multi-layered.

Regeneration Harvest

Regeneration harvest, using one or more of the three methods below, is proposed on a total of 98 acres.

1. Modified, even-aged regeneration harvest is proposed on 12 acres. This NGFMA treatment would retain 6 to 8 trees per acre greater than 20 inches in diameter at breast height (DBH). Using tree crown ratio and form as a guide, retained trees would be the most vigorous trees available. Spatial distribution of these trees would vary from individual trees to groups. Healthy understory ponderosa pine, sugar pine, incense cedar, and Douglas-fir trees free from insects, disease, or damage would be left. Wildlife snags and coarse woody debris would be designated for retention. All other trees would be removed, leaving a canopy closure of 10 to 15 percent. Conifer seedlings would be planted following harvest.

2. Structural retention regeneration harvest is proposed on 69 acres. This SGFMA treatment would retain 16 to 25 trees per acre greater than 20″ DBH. Using tree crown ratio and form as the selection guide, retained trees would be the most vigorous trees available. Spatial distribution of these trees would vary from individual trees to groups. Healthy understory ponderosa pine, sugar pine, incense cedar, and Douglas-fir trees free from insects, disease, or damage would be left. Wildlife snags and coarse woody debris (CWD) would be designated for retention. All other trees would be removed leaving a canopy closure of 25 to 40 percent. Conifer seedlings would be planted following harvest.

3. Modified even-aged regeneration harvest in a Connectivity/Diversity Block is proposed on 17 acres. This NGFMA treatment would retain 12 to 18 trees per acre greater than 20″ DBH. Using tree crown ratio and form as a guide, retention trees would be the most vigorous trees available. Spatial distribution of these trees would vary from individual trees to groups. Healthy understory ponderosa pine, sugar pine, incense cedar, and Douglas-fir trees free from insects, disease, or damage would be left. Wildlife snags and coarse woody debris would be designated for retention. All other trees would be removed leaving a canopy closure of 15 to 25 percent. Conifer seedlings would be planted following harvest.

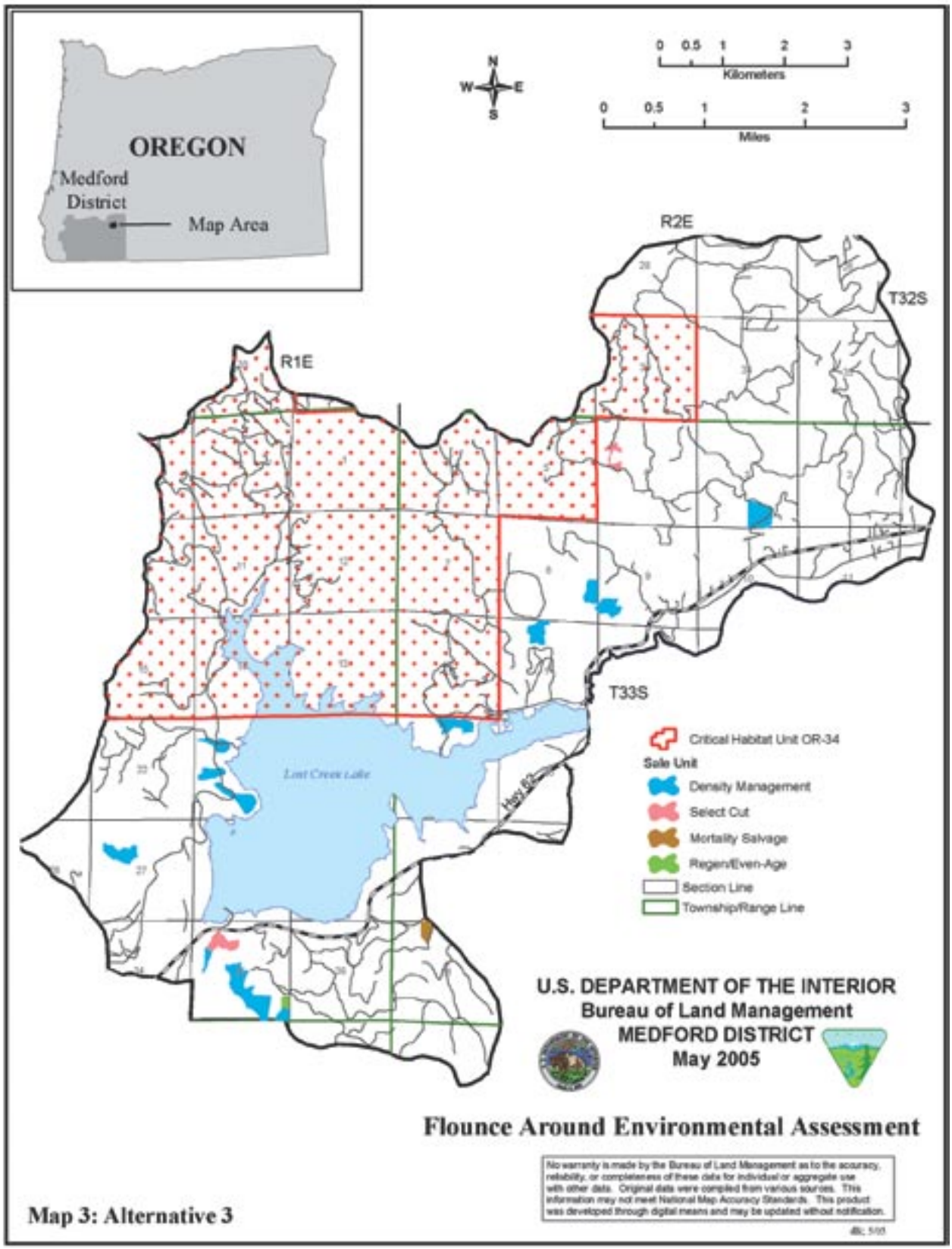
2.4.1.2 Road Projects

Road Renovation

Approximately 25 miles of road would be renovated. This consists of work to be performed on the road prior to its use. The work includes, but is not limited to, blading the road surface; blading ditch-lines; cleaning or enlarging catch basins; flushing corrugated metal pipes (CMP); removing brush near the inlet or outlet of pipes; cleaning inlet and outlet end of pipes; and removing brush, limbs, and trees along the roadway to improve sight distance and allow for proper road maintenance. All drainage structures, including CMPs, water dips, and ditch relief outlets, would be inspected and required work would be performed so water flow would not be impeded.

Road Improvement

On approximately three miles of existing roads would be upgraded to reduce erosion and sediment deposits into streams. Road drainage would be improved and deteriorated surfacing would be replaced. New culverts would be installed at 11 sites on existing roads to improve drainage and 2 or 3 culverts would be upgraded in size to meet 100-year flood standards.


OREGON
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Map Area
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R2E
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Lost Creek Lake
Hwy 62
Critical Habitat Unit OR-34
Sale Unit
Density Management
Select Cut
Mortality Salvage
Regen/Even-Age
Section Line
Township/Range Line
U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management
MEDFORD DISTRICT
May 2005
Flounce Around 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. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.
Map 3: Alternative 3

Full Decommissioning

Approximately 0.5 miles of road would be fully decommissioned. Roads determined through an interdisciplinary process to have no future need would be sub-soiled (or ripped), seeded with native grasses or others as appropriate, mulched, and planted to reestablish vegetation. Cross-drains, fills in stream channels, and potentially unstable fill areas would be removed to restore natural hydrologic flow. The road would be closed with a device similar to an earthen barrier or equivalent. The road would not require future maintenance.

Partial Decommissioning

Approximately one mile of existing road would be closed to vehicles on a long-term basis, but may be used again in the future. The road would be left in an erosion-resistant condition by establishing cross-drains and removing fills in stream channels and potentially unstable fill areas. Exposed soils would be treated to reduce sedimentation. The road would be closed with a device similar to an earthen barrier.

Helicopter Landings

Ten landings, located on BLM and private land, would be used for the proposed harvest activities. A number of these landings would be located in existing landings or road junctions and would require minimal construction or additional site disturbance to provide for safe landing activities. Landings constructed on BLM-administered land would be decommissioned following completion of logging activities. Decommissioning would include ripping, seeding with native grasses, and mulching. All landings would be less than one acre in size.

Temporary Operator Spur Construction

Construction of 17 temporary operator spur roads, totaling 2.6 miles, would be needed for access to harvest units. After use, the spurs would be fully decommissioned.

Road Closures

A gate or barricade would be used to close four miles of road.
The roads would not be decommissioned.

2.5 Alternative 3

Northern spotted owl critical habitat units and Connectivity/Diversity blocks would not be entered for silviculture treatment.

The intent of this alternative is to achieve the goals, objectives, suggested actions, and desired future condition for the timber stands as specified in the Medford District ROD/RMP, NWFP, and Lost Creek Watershed Analysis. Emphasis of this alternative is to provide a higher level of connectivity, stand structure, and canopy closure within treated forest stands (see Map 3).

2.5.1 Silviculture Treatments and Related Road Work

2.5.1.1 Silviculture Treatments

The overall scope of this action alternative covers 353 acres of BLM-administered lands designated as Matrix. Matrix lands include SGFMA and NGFMA. Three treatment methods would be used in this alternative (see Section 2.4.1 for descriptions of treatment methods).

Density Management

Density management is proposed on 300 acres.

Selection Harvest

Selection harvest is proposed on 47 acres.

Regeneration Harvest

Modified, even-aged regeneration harvest is proposed on 6 acres.

2.5.1.2 Road Projects

Road Renovation

Renovation would occur on 12 miles of road.

Road Improvement

No road improvement would occur.

Full Decommissioning

A small amount (approximately 200 feet) of road would be decommissioned.

Helicopter Landings

Nine helicopter landings would be used for proposed harvest activities. All landings would be less than one acre in size and would be decommissioned after use.

Temporary Operator Spur Construction

Construction of 10 temporary operator spur roads, totaling 2 miles, would be needed to access harvest units. These roads would be fully decommissioned after use.

Road Closures

A gate or barricade would be used to close one mile of road.
The road would not be decommissioned.

2.6 Project Design Features

The following Project Design Features (PDFs) are included in the design of forest management projects in all action alternatives. These PDFs are a set of the Best Management Practices identified in the Medford District ROD/RMP and resource protection measures identified by the EA interdisciplinary team. The PDFs would serve as a basis for resource protection in the implementation of any projects and will be considered in the analysis of impacts.

2.6.1 Wildlife

- No known bald eagle nest trees, perch trees, or roost trees would be cut. Suitable eagle habitat within ¼ mile of the nest would not be removed. Large snags within ½ mile of the nest would not be cut, except as needed to protect human safety.
- Seasonal restriction from January 1 to August 31 for work activities within ¼ mile (½ mile line-of-site) from occupied eagle nest.
- Seasonal restriction of March 1 to September 30 within ¼ mile of known spotted owl sites (within ½ mile for helicopter operations). This seasonal restriction may be waived if nonnesting is determined. If new owls are discovered in harvest units following the sale date, the contract enables a halt to activities until mitigation options can be determined.
- Seasonal restriction of February 1 to July 15 within ½ mile of known peregrine falcon nest sites; within 1 mile from February 1 to August 15 for blasting or helicopter operation.
- Protect osprey nests with 5-acre no-harvest buffer and seasonal restriction for activities within ¼ mile of nest site from March 1 to August 31.
- Seasonal restriction of March 1 through August 30 within ¼ mile of northern goshawk nest. If new goshawks are discovered in harvest units following the sale date, the contract enables a halt to activities until mitigation options can be determined.
- Protect sharp shinned hawk nest with 10-acre no-harvest buffer and seasonal restriction for activities within ¼ mile of nest tree from March 1 to July 15.
- Protect known great gray owl nests with ¼-mile (125 acres) buffer. If new great gray owl nest areas are discovered in harvest units following the sale date, the contract enables a halt to activities until mitigation options can be determined.
- Meadows and natural openings would be buffered with a 300-foot no commercial harvest buffer (precommercial thinning, hand piling, and burning would be allowed).
- Protect additional raptor species, if located, and apply the appropriate buffers and seasonal restrictions.
- Maintain all snags except those which need to be felled for safety reasons. Those snags that must be felled for safety would be left on-site.
- Seasonal restriction and road closure in designated Jackson County Cooperative Travel Management Area (JACTMA) from October 15 to April 30.
- Broadcast burning and site preparation would not occur within ¼ mile of known active northern spotted owl nests between March 1 and July 15.
- Burning or helicopter operations would not occur within ½ mile of active bald eagle nests between January 1 and August 31.

2.6.2 Archeology

- Apply mitigating measures to areas where there are known archeological sites. Buffer sizes would be determined based upon proposed treatment, site-specific environmental conditions, and protection recommendations.

2.6.3 Special Status Plants

- Protect known Special Status vascular plant, lichen, bryophyte, and fungi sites. Buffer sizes would be determined based upon species, proposed treatment, site-specific environmental conditions, and protection recommendations.

2.6.4 Noxious Weeds

- Ensure seed, feed grains, forage, straw, and mulch are free of weed reproductive plant parts, as per the North American Weed Free Forage Certification Standards.
- In regeneration harvest, where operationally feasible, maintain vegetation cover along a 30′ strip adjacent to roads and located outside the road prism to provide shading (at least 50% canopy cover), reducing the establishment of sun-loving weeds.
- Prior to entry onto BLM-administered lands, all vehicles and equipment that will travel off system roads shall be inspected for noxious weed seeds and plant parts, and deemed free of said contaminants.
- Following timber harvest activities, units will be monitored for noxious weed species. Under Medford District Integrated Weed Management Plan and EA# OR110-98-14, found sites of noxious weeds will be treated using one or several methods as listed in the EA. All PDFs, as listed in EA# OR110-98-14, shall be adhered to during treatment.

2.6.5 Equipment Use

- A Spill Prevention, Control and Countermeasure Plan would be required prior to operation and would include, but not be limited to, hazardous substances to be used in the project area and identification of purchaser's representatives responsible for supervising initial containment action for releases and subsequent cleanup.
- All hazardous materials and petroleum products would be stored in durable containers outside Riparian Reserves, and located so any accidental spill would be contained and not drain into the stream system.
- Equipment would be refueled outside Riparian Reserves.

2.6.6 Roads and Quarries

- Minimize the construction of new permanent or temporary roads through Riparian Reserves.
- All road renovation, closure, and/or improvement work would be restricted from October 15 to May 15, or when soil moisture exceeds 25 percent.
- Block or barricade identified roads after use and before beginning of rainy season (generally October 15).
- All roads identified for decommissioning would be seeded with native seed and mulched in the same operational season they are decommissioned, and would be planted with trees and shrubs as needed.
- No application of dust abatement materials, such as lignin, Mag-Chloride, and/or approved petroleum based dust-abatement products, would occur during or just before wet weather and at stream crossings or other locations that could result in direct delivery to a water body (typically not within 25' of a water body or stream channel.)
- Location of waste stockpile and borrow sites resulting from road construction or reconstruction should be at least one site-potential-tree length (165 feet) from a stream where sediment-laden runoff can be confined.
- When removing a culvert, pull slopes back to the natural slope, or at least 1:1, to minimize sloughing, erosion, and potential for the stream to undercut streambanks during periods of high streamflows.
- Seasonally restrict all quarry development, rock crushing, and rock hauling operations

from Oct. 15 to May 15, or when soil moisture conditions or rainstorms could cause transport of sediments to nearby stream channels.

- Seasonally restrict all rock hauling, timber hauling, and landing operations on native surface or inadequately rocked roads whenever soil moisture conditions or rain events could result in road damage or the transport of sediment to nearby stream channels, generally October 15 to May 15.
- Construct silt fences or other preventative structures (diversion ditches, settling ponds) to prevent the potential for runoff from quarry operations into nearby stream channels.
- Sow grass seed and/or plant native vegetation to stabilize all exposed soil areas, including overburden from quarry operations.
- If explosives are necessary in the quarry development, then require a detailed blasting plan that addresses minimizing the amount of rock material that may enter any adjacent stream channels.
- Locate all waste disposal areas away from Riparian Reserves.

2.6.7 Culvert Replacement

- At all stream crossings, place the approach as near a right angle to the stream as possible to minimize disturbance to stream banks and riparian habitat.
- Design road crossings on all fish-bearing streams to maintain natural streambed substrate and site gradient, where feasible, while minimizing long-term maintenance needs; the specific design shall also be based on expected longevity and economics.
- Width of a crossing structure will be at least the mean bankfull width at the crossing site; to be measured by a qualified professional.
- Divert the stream (e.g. pipe or lined ditch) around the work area to minimize stream sedimentation. Require the contractor to submit an approved plan for water diversion before instream work begins. The diverted stream will not be returned to the channel through the project area until all instream work has been completed. The Butte Falls Resource Area fish biologist will be consulted before deviating from this practice. If it is impractical to dewater a stream channel due to factors such as deep channel incision or high gradient, schedule the work toward the end of the instream work period, rather than at the beginning.
- Reduce movement of sediment downstream from the project site by installing straw bales, geotextile fabric, or coconut fiber logs/bales immediately downstream of the work area
- Wet (fresh enough to flow) or green (hardened but less than 21 days old) cement and new or old asphalt shall not be allowed to enter a stream. This includes water used to clean tools and wash out cement trucks after delivering material.
- To restore streambed habitat complexity inside new crossing structures, line the bottom of the crossing structure with one to three foot diameter boulders. Boulders positioned in replacement pipes must be large (high) enough so streambed substrate deposited immediately upstream of the inlet to the original pipe does not bury them. A prediction model will be used to determine the size of boulders needed to ensure stability at the estimated 100-year peak flow.
- Stabilize fill material over a stream-crossing structure as soon as possible after construction has been completed, normally before October 15. Work will be temporarily suspended if rain saturates soils to the extent there is potential for environmental damage, including movement of sediment from the road to the stream.
- To reduce soil erosion and discourage invasion of noxious plant species, mulch bare soil areas with hydro-seeding, weed-free straw, bark chips, and/or native seed, or other approved seed mix, prior to fall rain, or when moisture conditions are appropriate.
- Locate waste stockpile and borrow sites at least one site-potential tree length from a stream where sediment-laden runoff can be confined, unless it is not possible for sediment to move off-site.

- Notify the contractor that he is responsible for meeting all state and federal requirements for maintaining water quality. Standard contract stipulations will include the following:
  1. Heavy equipment will be inspected and cleaned before moving onto the project site in order to remove oil and grease, noxious weeds, and excessive soil.
  2. Hydraulic fluid and fuel lines on heavy mechanized equipment must be in proper working condition in order to minimize leakage into streams.
  3. Waste diesel, oil, hydraulic fluid, and other hazardous materials and contaminated soil near the stream will be removed from the site and disposed of in accordance with Oregon Department of Environmental Quality (DEQ) regulations. Areas saturated with toxic materials will be excavated to a depth of 12 inches beyond the contaminated material, or as required by DEQ.
  4. Equipment refueling will be conducted within a confined area outside the stream channel to minimize toxic materials from entering a stream.
  5. Spill containment booms or other equipment, as required by DEQ, will be used.
  6. Equipment containing toxic fluids will not be stored in a stream channel at any time.
- Construct control weirs or rock aprons at culvert outlets to prevent the water velocity through a new culvert from causing perching:
  1. Control weirs (log or boulders) (Porior 00) would be installed about three channel widths downstream of the culvert to back water into the pipe outlet
  2. Rock aprons would consist of burying one to three foot diameter rock across the stream channel at the culvert outlet and downstream for a distance equal to two to three culvert diameters, with the tops of boulders at the same elevation as the bottom of the culvert.
- When removing culverts, pull slopes back to the natural slope, or at least 1:1, to minimize sloughing, erosion, and the potential for the stream to undercut streambanks during periods of high streamflows.
- Restrict instream work to the period between June 15 and September 15.

2.6.8 Timber Harvest

- Crossing of the Historic Military road in T33S, R2E Sections 8 and 9 will be limited to one designated crossing. The crossing will be no wider than 20 feet and, following project completion, the Historic Military road shall not be ripped or bladed.
- Minimize the total number of skid roads by designating skid roads with an average of 150′ spacing. Avoid creating new skid roads and utilize existing roads where feasible in order to minimize ground disturbance, especially in thinning and selective cut units where no tillage is proposed.
- All tractor yarding, soil ripping, and excavator piling operations would be restricted from October 15 to May 15, or when soil moisture exceeds 25 percent.
- Lop and scatter, pile, or underburn activity slash as necessary to reduce or eliminate additional fuel loading. Burn piled slash during the fall and winter to reduce impacts on air quality. All burning would follow the guidelines of the Oregon Smoke Management Plan.
- Restrict tractor and/or mechanical operations to slopes generally less than 35 percent. In areas where it is necessary to exceed 35 percent, utilize ridge tops where possible.
- Waterbar all skid roads and firelines during the same operating season as constructed.
- Skid roads would be located to minimize disturbance to coarse woody debris (CWD). Where skid roads encounter large, coarse woody debris, a section of the CWD would be bucked out for equipment access. The remainder of the CWD would be left in place and not disturbed.
- Areas identified to be ripped (skid roads, landings, decommissioned roads) would be ripped to a depth of 18 inches utilizing a subsoiler or winged-toothed rippers.

- Ripping of skid trails would occur in all tractor yarded regeneration units.
- No commercial timber harvesting would occur in Riparian Reserves.
- Locate all waste disposal areas away from Riparian Reserves.
- Adjacent to the hiking trail around Lost Creek Lake and the Viewpoint Mike Trail, a 25′ no-treatment buffer would be maintained. Trees will be directionally felled away from the trail in Section 27.
- Harvest activities adjacent to designated recreational areas (hiking trail and Four Corners and Fire Glen campgrounds) will be restricted during periods of high recreational use (from April until after the July 4th weekend). After the July 4th weekend and until September 30, hours of operation will be limited to an 8 a.m. start-up time.

Table 2.1. Comparison of Alternatives

Management Action	Alternatives		
	1 No Action	2	3 Proposed Action
		Silviculture Treatment ROD/RMP	**Silviculture Treatment** Canopy retention; No harvest in CHU
Density management	0	340 acres	300 acres
Selective cut	0	65 acres	47 acres
Regeneration harvest • Modified Even-Aged • Structural Retention • Modified Even-aged in Connectivity/Diversity Block	 0 0 0	 12 acres 69 acres 17 acres	 6 acres 0 acres 0 acres
Total Harvest Acres	**0**	**503 acres**	**353 acres**
Estimated Volume[1]	**0**	**4-5 mmbf**	**2-3 mmbf**
Logging method • Tractor • Cable • Helicopter	 0 0 0	 379 acres 31 acres 93 acres	 239 acres 27 acres 87 acres
Road Renovation	0	25 miles	12 miles
Road Improvement		3 miles	0
Full Decommission	0	.5 miles	0
Partial Decommission	0	1 mile	0
Helicopter Landings	0	10	9
Temporary Operator Spur Construction	0	3 miles	2 miles
Seasonal/Temporary Road Closure	0	4 miles	1 mile

[1]mmbf=million board feet

3.0 Affected Environment and Environmental Consequences

3.1 Introduction

This chapter describes the present condition of the environment within the proposed Flounce Around project area that would be affected by the alternatives. The information in this chapter serves as a general baseline for determining the effects of the alternatives. No attempt has been made to describe every detail of every resource within the proposed project area.

The information is organized around the major issues identified by the interdisciplinary team. After each affected environment description, the impacts of proposed timber harvest under each alternative are analyzed under the same issue heading. Only enough detail has been given to determine if any of the alternatives would cause significant impacts to the human environment as defined in 40 CFR 1508.27. Surveys have been completed for cultural resources, threatened and endangered plants and animals, and special status plants.

The following critical elements are not known to be present within the proposed project area, or would not be affected by any of the alternatives, and will not be discussed further: Areas of Critical Environmental Concern, Prime or Unique Farmlands, Flood Plains, Native American Religious Concerns, Water Quality, Wetlands, Wild and Scenic Rivers, and Wilderness.

3.1.1 A Picture of the Watershed containing the Proposed Project

The Flounce Around Timber Sale project area is located in the Lost Creek Watershed and a small portion of the Big Butte Creek Watershed in Jackson County, Oregon. The following discussion is focused on conditions and past activities within the Lost Creek Watershed. All units considered in the EA are located within the Lost Creek Watershed with two units split along the ridgeline between the two watersheds. Past harvest activities within these units are associated with the adjacent Lost Creek watershed units. The Lost Creek Watershed covers 36,290 acres and is one of many 5th field watersheds which comprise the upper Rogue River drainage.

The landscape pattern in the watershed is largely determined by the checkerboard ownership (see Table 3.1). On the industrial timberlands, it is assumed the majority of merchantable overstory trees have been removed, leaving mostly younger Douglas-fir, with lesser amounts of ponderosa pine, incense cedar, and scattered hardwoods. “The nonfederal forests within the range of the northern spotted owl are predominantly forests that have grown back since harvest and are generally even-aged stands. They are typically managed as commercial forests…. harvest generally occurs in a stand’s fifth or sixth decade” (USDA and USDI 1994, 3&4-6). The NWFP states “these forests generally are now in early and mid-successional stages, with many at or approaching ages and sizes that will predictably result in harvest.”

Table 3.1. Land Ownership in the Lost Creek Watershed

Land Owner/Jurisdiction	Acres	Percent
Bureau of Land Management	12,622	35
USACE	2,960	8
Other Government	2,933	8
Industrial Timberlands	14,411	40
Other Private Lands	3,364	9
Total	**36,290**	**100**

The Rogue-Umpqua Scenic Byway (Highway 62), the main transportation route from the Rogue Valley to Crater Lake, transects the western third of the watershed. The Byway follows the south side of Lost Creek Reservoir and the banks of the Rogue River. Oregon State Parks operates a campground, day-use area, and marina on the south side of the reservoir. Thirty miles of developed trails exist along and around the lakeshore.

Nearly 65 percent of the watershed is identified as large conifer forests. The remaining 35 percent is noncommercial oak woodlands and small conifer forests.

Since the 1940s, harvest has occurred on approximately 75 percent of the BLM forested land within the watershed. Harvest practices ranged from mortality salvage, or selective cutting of individual trees, to regeneration harvest, including fire salvage and clearcut harvest.

Past harvesting has contributed to the existing condition in the watershed. Fire exclusion and harvest practices have contributed to the current high density and multiple-layered stand conditions in many of the proposed harvest units. Past harvest methods have influenced locations and conditions of the roads within the watershed. The following describes some general past practices which have contributed to the affected environments described in detail later in this section.

1940s and 1950s

ON BLM-administered lands during the late 1940s and through the 1950s, mortality salvage (harvest of dead and dying timber) and selection harvest were the predominant harvest treatments applied to approximately 1,800 acres. Most harvesting was completed using tractor yarding and many pioneer roads were built to access these acres. Tractor yarding and road building may have occurred under all weather and soil moisture conditions and resulted in soil compaction across these acres. It is likely mortality salvage harvest reduced the levels of snags and down woody debris on these acres because the dead and dying trees with commercial value were removed. Selection harvest typically focused on the larger, high-valued Douglas-fir and ponderosa pine trees. These harvest methods created openings in the forest stand and allowed natural regeneration to occur.

1960s

In the 1960s, the BLM harvested approximately 2,500 acres in the Lost Creek Watershed using clearcut harvest and selection harvest as the primary harvest treatments. The Columbus Day windstorm in 1962 resulted in wind thrown trees throughout the watershed which were salvaged in 1963 and 1964. Clearcut harvest was increasingly used in the 1960s. A total of 685 acres in the watershed were clearcut. Clearcut areas were planted with ponderosa pine following harvest. Precommercial thinning has allowed natural seeding to occur in these plantations and a mixture of other species, such as Douglas-fir and incense cedar, have become established. As these plantations continue

to age, trees are expected to reach a stocking level and size where future commercial thinning will be considered.

During the 1960s, a three-stage shelterwood harvest plan was implemented. The plan called for three entries into stands using selection harvest in the first two entries. The intent was to create openings in the stands to allow natural regeneration to occur. The first stage removed approximately ⅓ of the volume and established the roads into these units. Harvest focused on removal of the lower valued, larger trees exhibiting signs of rot or deterioration. The second stage removed another ⅓ of the volume. The remaining larger overstory trees following these selection harvests provided protection (i.e. shelter) for the new trees to become established. The third and final stage removed the remaining overstory trees and left a newly stocked, young forest stand when completed. Tractor yarding continued to be the primary logging system and roads were generally located on lower slopes and in drainages to accommodate tractor logging.

1970s

Three-stage shelterwood harvesting continued on BLM-administered lands during the 1970s and up to 1980. Selection harvest was used on approximately 3,400 acres in the watershed during this time with either the first or second stage being implemented. Road building continued into stands identified for first stage harvesting. During the 1970s, cable yarding with limited reach capabilities became more prevalent on steeper slopes. Roads were constructed across mid-slopes and on ridge tops to provide access for the cable yarding machines.

During the 1970s, the US Army Corp of Engineers (USACE) acquired private and public land to construct the Lost Creek Reservoir. The reservoir included withdrawal of approximately 540 acres of BLM-administered land for the pool. An additional 1,940 acres of BLM land adjacent to the pool was administratively withdrawn for the USACE. The BLM retained administrative rights to vegetative resources on these lands. Approximately 164 acres of these lands adjacent to the reservoir were clearcut harvested to accommodate reservoir construction.

Lost Creek Reservoir is the dominant water feature in this watershed. The reservoir, formed when the Rogue River was dammed in 1977, is 10 miles long and occupies 3,426 acres at full capacity. Lost Creek Reservoir became the center of recreation activity in the watershed and several recreation sites were constructed to accommodate hikers, boaters, anglers, picnickers, and campers.

Construction of the dam eliminated the historic range for the anadromous salmonids that used the areas above the dam for spawning and rearing. To mitigate for the loss of the salmonid habitat above the dam, the Cole Rivers Fish Hatchery was constructed in 1975 at the base of the dam. The hatchery provides rainbow trout for Lost Creek Reservoir to support and promote recreational angling.

1980s

In late 1980, the BLM began implementing the Medford District's Management Framework Plan (MFP). Emphasis in the MFP was to maximize timber production on high intensity management lands throughout the Medford District. Direction in the MFP was to convert existing old growth stands to rapid-growing second growth. Recommended harvest practices included clearcut, 2-stage shelterwood, and single tree selection harvest. Intensive management practices to maximize growth and yield from these lands included reforestation of the harvested lands, spraying to control competing vegetation, precommercial and commercial thinning, and fertilization. The MFP implemented a 100 foot no-harvest buffer on each side of Class 1 and 2 streams. Tractor harvesting was limited to slopes less than 35 percent. Logging units were designed for

more sophisticated cable yarding machines which were capable of reaching farther out into units. This reduced the need to construct roads to harvest these units.

The Medford District BLM operated under the MFP from 1980 through 1993. During this time, approximately 830 acres of clearcut and 460 acres of selection harvest occurred in the Lost Creek Watershed. Approximately 630 acres of overstory removal, shelterwood harvest, and mortality salvage was also completed.

In 1987, the Burnt Peak Fire began in the neighboring Elk Creek Watershed and burned 1,300 acres in the Lost Creek Watershed with approximately 360 acres on BLM-administered lands. Forested acres with merchantable volume were salvaged and reforested following the fire.

1990s to Present

In April 1994, the Record of Decision for the NWFP was signed. The NWFP amended the BLM Medford District ROD/RMP, which was completed in June 1995. The NWFP and ROD/RMP set up a reserve system to protect habitat for the Northern Spotted Owl and other old growth dependent species. The reserve system included designation of Riparian Reserves, 100-acre owl cores, and Late-Successional Reserves throughout the range of the spotted owl. Forest areas outside these reserves and not set aside for other resource values were designated as matrix lands and are available for timber management.

In 1995, the Medford District RMP designated 10 acres in the Lost Creek Watershed as the Baker Cypress Area of Critical Environmental Concern (ACEC). This ACEC included the Baker Cypress grove and recognized the botanical importance of the grove along with historic, cultural, scenic, education, and wildlife values. The RMP also designated the 495-acre Flounce Rock Environmental Education Area in 1995. This area was set aside to provide and maintain environmental education opportunities and to control uses that would disturb educational values. Timber harvest was excluded as a management activity in these areas.

The RMP classified lands visible from Lost Creek Reservoir as VRM Class II in which management activities may be seen but must not attract the attention of the casual observer. Due to natural physical barriers, such as ridges, draws, and slopes, large portions of the VRM Class II area are not visible from the reservoir. VRM Class III standards were applied in those areas and management activities may attract attention but should not dominate the view of the casual observer.

Under the ROD/RMP and NWFP, direction for timber management includes regeneration harvest, commercial thinning, density management, and selection harvest.

Timber harvest in Lost Creek Watershed, since implementation of the ROD/RMP, has included 168 acres of regeneration harvest, 147 acres of commercial thinning, and 685 acres of mortality salvage. The mortality salvage was completed after a 1996 windstorm which caused widespread windthrown trees throughout the watershed. These harvest activities occurred on Matrix lands and implemented Riparian Reserve buffers, green tree retention (larger remnant trees) in regeneration harvest units, and coarse woody debris retention, as directed by the ROD/RMP.

In 2001, a list of urban wildland interface communities in the vicinity of Federal lands at high risk from wildfire was published in the Federal Register (*Federal Register* Vol. 66, No. 160, Friday August 17, 2001, pages 43384-43435). Areas near and around the communities of Elk Creek and Crowfoot Road were included on that list. Wildland Urban Interface (WUI) areas within the watershed include these communities, high use recreation areas, and areas north of Lost Creek Reservoir identified by the Oregon Department of Forestry because of the abundance of homes and high recreation use.

Nearly 500 acres of BLM-administered land was treated in 2004 to provide a defensible space within the WUI.

In 2002, the Timbered Rock Fire, which started in the Elk Creek Watershed, burned into the Lost Creek Watershed and consumed 260 acres of BLM and private lands. The 80 acres of BLM-administered lands burned in the fire were replanted.

The Rogue-Umpqua National Scenic Byway, dedicated in 2002, includes a portion of Highway 62, the main transportation route from the Rogue Valley to Crater Lake. The Byway transects the western third of the watershed and follows the south side of Lost Creek Reservoir and the banks of the Rogue River.

3.1.2 Land Use Allocations and Restrictions

The project area encompasses 21,380 acres. Lands within the project area proposed for management activities have been designated as Matrix, Riparian Reserves, Big Game Winter Range and Elk Management Area, and Visual Resource Management Class II.

Other land use allocations found within the Lost Creek Watershed but not proposed for management activities are Area of Critical Environmental Concern, Environmental Education Area, and Late-Successional Reserve. Appendix K contains management direction for those allocations.

Following is a summary of pertinent management direction contained within the Medford District ROD/RMP and the Northwest Forest Plan for these designations. The project area includes only BLM-administered lands.

3.1.2.1 Matrix

The timber harvest is proposed on lands designated as Matrix. Matrix objectives identified in the NWFP include: "(1) production of commercial yields of wood . . ., (2) retention of moderate levels of ecologically valuable old-growth components such as snags, logs, and relatively large green trees, and (3) increasing ecological diversity by providing early-successional habitat (USDA and USDI 1994, B-5, B-6). "Stands in the matrix can be managed for timber and other commodity production, and to perform an important role in maintaining biodiversity" (USDA and USDI 1994, B-6). Matrix lands have been divided into the northern and southern General Forest Management Areas and Connectivity/Diversity blocks (USDI 1995, 39). A Connectivity/Diversity Block is located in T33S, R1E, Section 1. In Connectivity/Diversity Blocks, 25 to 30 percent of each block will be maintained in late-successional condition, and periodic timber sales will leave 12 to 18 green trees per acre (USDI 1995, 75).

3.1.2.2 Riparian Reserves

Riparian Reserve lands, as defined in the RMP (p. 26-32) and the NWFP (p. C-30), are those lands used to maintain and restore riparian structures and functions of intermittent streams, confer benefits to riparian dependent and associated species other than fish, enhance habitat conservation for organisms that are dependent on the transition zone between upslope and riparian areas, improve travel and corridors for many terrestrial animals and plants, and provide for greater connectivity of the watershed. The Riparian Reserves will also serve as connectivity corridors among Late-Successional Reserves. Riparian Reserves overlay other land use allocations and are dispersed throughout the project area. Lands within Riparian Reserves are unavailable for planned forest management.

3.1.2.3 Big Game Winter Range and Elk Management Area

Lands designated in the Medford District ROD/RMP as Big Game Winter Range and Elk Management Area are managed to provide thermal cover and to minimize disturbance. In these areas, all roads, except major collectors and arterials, will be closed between November 15 and April 1. At least 20 percent of these areas will be maintained in thermal cover (70 percent canopy closure and canopy height of at least 40 feet) (USDI 1995, 48).

3.1.2.4 Visual Resource Management Class II

BLM-administered lands within the project area designated as Visual Resource Management Class II are those areas within the foreground/middleground of Highway 62 from Shady Cove to Lost Creek Reservoir. Foreground/middleground is defined as land within one mile or to the first ridge, whichever is closer. The objective is to retain the existing character of the landscapes. The Medford District ROD/RMP directs "Manage VRM Class II lands for low levels of change to the characteristic landscape. Management activities may be seen but should not attract the attention of the casual observer. Changes should repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape" (USDI 1995, 70).

3.2 Forest Condition

3.2.1 Introduction

Elevation, slope, aspect, and soil depth define the presence and abundance of vegetative species. Within the majority of the project area, these factors have combined to create a moisture-limiting environment that restricts vegetative growth. The elevation range within the project area is between 1,900 feet at the edge of Lost Creek Lake to 4,100 feet at the top of Flounce Rock. Most of the proposed management actions occur below 3,000 feet in elevation. These low elevation sites tend to have a wide fluctuation of night to daytime temperatures as well as high evapotranspirational demand by plants during periods of high summer temperatures. Low water availability, combined with the loss of the natural thinning effects of wildfire, has created dense, stagnant forest stands. Stands that are dense and overstocked have more trees than the site has moisture, nutrients, and growing space to sustain. Without adequate resources, tree growth and vigor declines, increasing the probability of tree mortality from insects or disease. These conditions are common throughout the project area in most forest stands, independent of age or size class. Stand examinations and field reviews confirm this condition as many stands are at density levels above the carrying capacity of the site, resulting in stocking levels that are not ecologically sustainable (see Appendix E, Silvicultural Prescriptions, Marking Guidelines, and Stand Inventory).

There are four forest plant series present within the project area: Oregon white oak, ponderosa pine, Douglas-fir, and white fir. These plant series generally follow an elevation gradient from lowest to highest. The Oregon White Oak series occupies low, hot, dry sites with shallow soils and it is commonly found on southerly aspects. The Ponderosa Pine series occurs on sites with shallow, droughty soils and is generally found at slightly higher elevations than the Oregon White Oak series. The Douglas-fir series occurs at higher elevations or on sites with a more northerly aspect. The White Fir series occupies the highest elevation sites in the project area. These sites are the coolest and wettest, as well as the most productive.

Two nonforested plant communities are common in the project area: shrub, or chaparral, and meadow. The shrub or chaparral community includes the following common shrub species: buckbrush, deerbrush, poison oak, and whiteleaf manazanita. Tree species may

include black oak and madrone with conifer species generally lacking in the overstory. The meadow community is present throughout the area and typically can be found on very shallow soils. Meadows vary in vegetative composition and may include a variety of mosses, mat-forming shrubs, grasses, and herbs. Rock outcrops are also common.

3.2.2 Affected Environment

3.2.2.1 Stand Density

With the loss of the natural thinning effects of wildfire, overstocked, stagnant forest stands have developed and have reduced the supply of and increased the demand for essential site resources. Overstocked stands have more trees than the site has moisture, nutrients, and growing space to sustain. Without adequate resources, tree growth and vigor declines, increasing the probability of tree mortality from insects or disease.

Forest stands with relative densities above 65 percent have reduced tree vigor, mortality of suppressed trees and a higher susceptibility to insects, disease, and severe fire behavior (Perry 1994; Hann and Wang 1990; Curtis 1982). These conditions reduce stand resiliency and resistance to environmental stresses. In the forest stands proposed for treatment, the average relative density is 81 percent (see Appendix E, Silvicultural Prescriptions, Marking Guidelines, and Stand Inventory).

3.2.2.2 Conifer Growth and Yield

For most sites in southwest Oregon, 100 years (culmination of mean annual increment) is the age at which the average yearly growth in volume of a forest stand has peaked (USDI 1995, 181). To provide a sustained harvest level and maximize volume growth and yield, regeneration harvesting on matrix lands within the northern general forest management area is planned at 100 years (USDI 1995, 189). Regeneration harvests would replace slow-growing trees with young, fast-growing conifers to provide the optimum rate of growth and maximize volume production.

3.2.3 Environmental Consequences

3.2.3.1 Effects of Alternative 1 (No Action) on Forest Condition

Direct and Indirect Effects

In Alternative 1, stand densities would remain high and continue to increase. Intense competition for limited site resources would result in a decline in tree vigor and limited conifer growth potential. Growth rates would remain stagnant or decline with tree mortality expected to increase. Declining tree vigor and growth reduces a tree's ability to resist a variety of damaging agents (Franklin, et al. 1987). A higher risk of insects, diseases, and wildfire due to high stand densities and fuel load would be expected (ODF 1990; Powell 1999; Filip 1998). In the absence of disturbance events, such as wildfire or density management, the number of trees per acre would remain at levels above the carrying capacity of the site (Oliver 1996). Stand canopy closure would remain at 90-100 percent.

Stand resiliency to disturbance events, including drought, insects, wildfire and climate change, would remain low. Continued high stand densities, high surface and ladder fuels, and low tree vigor would tend to magnify rather than buffer the effects of disturbance events (Perry 1995). In the event of a wildfire, greater detrimental effects to soils, wildlife habitat, forest structure, and watershed processes would potentially occur, resulting in a longer restoration and landscape recovery period (Brown 2000; USDA 2000).

Mortality rates of large sugar and ponderosa pines would remain at levels higher than historic rates. Fire exclusion has reduced the extent and frequency of wildfires that naturally thinned the understory. Without density control, competition for limited site resources between dense understories and large overstory pines would increase. This competition would lead to reduced tree vigor and an increased susceptibility of large sugar and ponderosa pines to beetle infestation. Mortality of large pine species would result in the loss of a valuable genetic and structural legacy. Of particular importance is large healthy ponderosa pine which is tolerant of wildfire and drought (Agee 1993; Habeck 1992). Deep root systems allow these species to access soil moisture deeper in the ground (Wenger 1984; Burns and Honkala 1990). This ability to access deeper water sources increases drought tolerance and may also increase the probability of pine species persisting in the event of climate change.

Cumulative Effects

Past Actions - Timber harvesting has altered the structure, amount, and spatial arrangement of forest vegetation from larger contiguous stands of late-successional (mature and old growth seral stages) forests to a patchy mosaic of young and late-successional stands.

Since the implementation of the Medford District PRMP/EIS in 1994, approximately 1,258 acres of BLM-administered lands have been logged within the Lost Creek Watershed. About 54 percent of the 1,258 acres were mortality salvaged logged in 1996. Scattered windthrown and damaged trees in excess of levels needed for snags and CWD were removed. The environmental effects on forest stands were limited due to the random and widely scattered distribution of the salvaged trees. Salvage of the downed and damaged green trees reduced the potential for the buildup of insect populations within the salvage area. Selective cutting and commercial thinning treatments occurred on about 30 percent of the harvested acres. The impact from these treatments was density reduction with the objective of increasing the vigor and growth of late-successional forest stands. The remaining 16 percent of the harvested acres were regeneration harvests. The impact of the regeneration harvests has been a decrease in stand canopy closure (from 80-100 percent to 10-30 percent), reduced stand structure (multi-layered to two-layered) and a change in vegetative composition towards species found in younger stands (white fir to pine species and Douglas-fir). Growth rates and vigor of planted conifers is high with maximum growth per tree. Stand densities are at levels the site has resources to sustain. Structural complexity will develop overtime, with late-successional characteristics expected in approximately 80 years.

Present Actions – Currently, two timber sales, B Lost and Flying Lost, are active on BLM-administered lands in the Lost Creek Watershed; approximately 600 acres will be logged. On about 400 acres (65 percent), density reduction (selective cut and density management) is the dominant silvicultural treatment prescribed. Density reduction will increase tree vigor and growth and reduce tree susceptibility to insect and disease attack. In the remaining area, about 200 acres, regeneration harvesting will occur. These stands are deteriorating due to insects, disease, crown condition, or tree senescence and will be harvested under regeneration guidelines to allow for the planting, establishment, and rapid growth of favored tree species.

Future Actions - On private industrial forest lands, logging plans are unknown. In stands with an average diameter of 8″ DBH and greater, commercial logging is expected within the next 5-10 years. Silvicultural methods (clearcutting and overstory removal) that create early seral stands would most likely be used. In stands less than 8″ DBH, little commercial logging is expected in the next 15-20 years. Within these stands, brush control and precommercial thinning are the two primary management activities most likely to occur, both of which would reduce stand densities and increase conifer growth. Depending on whether the precommercial thinning slash is treated, stand susceptibility

to wildfire may increase or decrease. The number of acres that would be treated over the next 10-15 years is unknown.

No future commercial timber sales are planned by the BLM in the Lost Creek Watershed in the next five years. Noncommercial treatments, such as brushing and precommercial thinning may occur. These treatments would reduce vegetative competition, increase conifer growth, and accelerate stand development toward older, more complex stands. Depending on how much of the precommercial thinning slash is treated, stand susceptibility to wildfire may increase or decrease.

Cumulative Effects - Stand densities on BLM-administered lands would continue to increase, further reducing the vigor and resiliency of forest stands to environmental disturbances. Tree growth and vigor would not be maximized as competition for limited site resources would remain high. On private lands, harvesting would continue and result in the conversion of older stands to early seral stands, with conifers planted to maximize growth and yield. Most private forestlands would be intensively managed with final harvest on commercial economic rotations averaging 60 years (USDI 1994).

No regeneration harvest would occur. Growth rates in these stands would remain low and tree mortality due to insects, disease, or low tree vigor would be at higher than normal levels (USDI 1994, 3-18). The amount of older stands on BLM managed lands in the Lost Creek Watershed would remain the same. In the long-term, without logging or wildfire, a gradual increase of late-successional stands in the watershed would occur as stands less than 80 years old continue to age and develop late-successional characteristics. An increase in late-successional stands would enhance the seral stage mixture toward older, more structurally complex and biologically diverse stands. Healthy, older stands would be more resistant and resilient to environmental disturbances.

This alternative (No Action) would not meet the timber management assumptions and forest condition projections provided for in the Medford District PRMP/EIS.

3.2.3.2 Effects Common to All Action Alternatives on Forest Condition

Direct and Indirect Effects

Stands identified for density management would have smaller and less vigorous trees harvested. The development of larger diameter and taller trees would be accelerated and the characteristics of a mature stand would develop faster (Bennett and Maguire 1995; Duncan 2002; Emmingham and Elwood 2002). Maintaining larger trees with fuller crowns would provide sufficient tree canopies to reduce vegetative competition from brush and hardwoods. Stand vigor and individual tree size would be increased with density levels at full site occupancy.

In the density management stands, the number of trees per acre would be reduced toward levels that the site has water and nutrients to sustain. Forest stand susceptibility to insect attack, disease infection, and fire would be expected to be reduced (Oliver, et al. 1996). Depending on tree size, approximately 50-100 trees per acre would be left. The healthiest large conifers and hardwoods would be maintained by reducing adjacent competing vegetation, insuring the long-term ecological benefits of large trees are present within the landscape for the foreseeable future. An increase in tree growth would occur once the root systems of the residual trees expand (approximately 5 to 10 years) are able to utilize the moisture, nutrients, and additional growing space. Tree crowns would increase in size and photosynthetic area, with stand crown closure increasing approximately 10 percent every 5 years (based upon Organon growth and yield projections, Hann 2003) until full canopy closure is reached. Carbon uptake, pollen production, and the production of viable seeds would also increase as tree vigor increases (DOE 1999; Kramer and Kozlowski 1979).

Treated stands would result in stands and a landscape that would be vigorous, healthy, and resilient to environmental changes.

Canopy closure in density management stands would be decreased from 80-100 percent to approximately 40-60 percent. Conifer and hardwood species diversity would be present with drought-tolerant species favored for retention. Additionally, the potential for a high intensity wildfire would be reduced as average tree size would increase, total vegetative biomass would decrease, and surface fuels would be treated (Graham, et al. 1999; Agee 1996; Pollet and Omi 2002).

In selective cut stands, the number of trees would be reduced toward the carrying capacity of the site (relative density of 35-50 percent). Full site-occupancy would be maintained with tree vigor and growth increased. Stand structure would be multi-layered, with high stand heterogeneity and a low effect on edge and fragmentation (McComb and Hansen 1992). Canopy closure would be decreased from 80-100 percent to approximately 40-60 percent.

In forest stands designated for modified, even-aged; structural retention; and connectivity regeneration harvest, 6 to 25 green trees per acre greater than 20″ DBH would be left (see Section 2.4.1.1, Silviculture Treatments, for a description of treatments). Canopy closure would be reduced to 10-40 percent, depending on the level of green tree retention. The retained overstory trees and down logs would provide for structural and biological legacies (Franklin 1992; Hansen, et al. 1991; Hunter 1995). Herbaceous, shrub, and tree species composition would be shifted towards shade-intolerant and drought-tolerant species. Snags and CWD would remain to provide habitat for wildlife, invertebrate, microbial, and fungal species, as well as provide important ecological functions, such as moisture retention, soil stabilization, and nutrient recycling (Harmon and Hua 1991; Franklin, et al. 1987). Surface fuels created during management activities would be treated to minimize wildfire risk. The species mix and density level of planted trees would trend toward the plant communities and stocking levels historically present. Maximum growth per tree would occur due to low inter-tree competition and high crown ratios. The impact of regeneration harvests would be the loss of large diameter trees, multiple canopy layers, and high canopy closure for a period of about 80 years. After 80 year, these late-successional characteristics would begin to redevelop.

Within the proposed timber sale, all treatments would favor large, healthy sugar and ponderosa pine by reducing competing trees. This reduction in competition would result in increased tree vigor, decreased mortality, and the conservation of a unique genetic and structural stand component (Latham and Tappeiner 2002).

Fuels assessment would be conducted within each unit following harvest activity. This assessment would determine the fuels hazard and fire risk based on aspect, slope, surface fuels loading (tons per acre), access, and location of each unit. Treatment recommendations would be based on post- harvest fuels assessment of the amount of slash created during harvest activities. To determine tons per acre, the Photo Series for Quantifying Forest Residues in the Douglas-fir-stand types will be used (Maxwell and Ward 1976). Post-harvest slash treatments would consist of lop and scatter, excavator piling, hand piling, and burning of the piles created (see Appendix G, Post-harvest Fuels Treatments). Additional thinning of the understory (trees less than 6″ DBH) may be needed, based on the post harvest fuels assessment, to further reduce the ladder fuels hazard with in the density management units. During the post-harvest assessments, if the tons per acre are low (less than 30 tons), the possible recommended treatment would be to lop and scatter. If the tons per acre are moderate to high (greater that 31 tons), the recommended treatment would be to pile the unit (see Appendix G, Post-harvest Fuels Treatments, for example of tons per acre). Piling would be completed by excavator (machine) or by hand. The piling method used would be based on trees per acre left and slope percentage in the unit.

Harvest treatments that target canopy bulk density (the foliage mass contained per unit crown volume), canopy base height, and canopy closure have the potential to reduce the development of all types of crown fires (Cruz, et al. 2002; Rothermel 1991; Scott and Reinhardt 2001). Canopy base heights would increase in regeneration harvest units. Slash treatments would reduce the fuel loadings created.

Treatments designed to reduce canopy fuels through density management and selection harvest, increase and decrease fire activity simultaneously. Slash generated from the thinning of timber stands would create surface fuel loading greater than current levels; however, the stands are assessed post-treatment and the decision is made based on tons per acre which treatment would best be used to treat these units. Reducing the canopy by 40 to 60 percent would decrease the canopy bulk density in density management and selection harvest units. Additional thinning of brush and conifers less that 7″ DBH would raise the canopy base height so transition from a surface fire to a crown fire would only occur in very extreme conditions. Understory thinning, in combination with a reduction to 40-60 percent canopies in late seral stands, would provide the greatest benefit to reduced crown fire activity.

Roads identified for full decommissioning would have the road bed tilled, mulched, and planted to reestablish conifer species. Removal of the compacted surface would increase site productivity and provide suitable growing conditions for planted conifers and the establishment of native vegetation. Canopy cover would slowly form and blend in with adjacent stands. Roads identified for partial decommissioning would not be tilled or planted. Soil compaction would limit the establishment and growth of trees, shrubs, and herbaceous vegetation.

Cumulative Effects

Density reduction treatments would reduce competition-related mortality, increase tree vigor and growth, and maintain preferred species. With these changes, the trend of forest conditions in the treated stands would improve and approach the range of natural variation associated with the plant series, leading to more complex stand structures. With an increase in tree vigor, the treated stands would be less susceptible to insects and disease. This treatment combined with past, present, and future density reduction treatments in the watershed would improve stand and landscape resistance and resiliency to environmental disturbances.

Stands identified for regeneration harvest on BLM-administered lands are at the biological age at which the average annual growth in volume of the stand has peaked. Following regeneration harvest, the growth and vigor of planted trees would be maximized due to low vegetative competition and high crown ratios. The species mix and density levels of planted trees would be within the range of natural conditions for the plant series. On private lands, harvesting would continue and result in the conversion of older stands to early seral stands with conifers planted to maximize growth and yield. Most private forestlands would be intensively managed with final harvest on commercial economic rotations averaging 60 years (USDI 1994). At the watershed scale, regeneration harvests would reduce stand structural components, lower biological diversity, and increase habitat fragmentation. Forest ecosystems that are highly fragmented and have simplified stand structures are less resistant and resilient to environmental stresses such as wildfire, drought, insects, and disease.

3.2.3.3 Effects of Alternative 2 on Forest Condition

Table 3.3. Proposed Silviculture Treatments in Alternative 2

Silvicultural Treatment	Matrix Acres
Density Management	340
Selection Harvest	65
Modified Even-aged Regeneration	12
Structural Retention Regeneration	69
Connectivity Regeneration	17
Total treatment acres	**503**

Direct and Indirect Effects

Within the Lost Creek Watershed, regeneration harvests would convert 98 acres of late-successional stands to early seral stands. No regeneration harvest would occur in the Big Butte Creek Watershed. Regeneration harvesting would decrease canopy closure and stand structure, and change the vegetative composition toward species found in younger, less complex stands. Density reduction treatments would increase the vigor, growth, and structural development in treated stands. Treated stands would be more resistant and resilient to environmental stresses, such as wildfire, drought, insects, and disease.

Refer to Section 3.2.3.2, “Effects Common to All Action Alternatives on Forest Condition, Direct and Indirect Effects” for detailed descriptions of direct and indirect effects of regeneration, density reduction, and post-harvest slash treatments.

Cumulative Effects

Density reduction treatments would occur on 335 acres, or about 1 percent of the Lost Creek Watershed acres. About 70 acres would be treated in the Lower Big Butte Watershed Analysis Unit, or .002 percent of the watershed. At this level, the impacts of density reduction on forest stands within the watershed would be considered minor (see Section 3.2.3.2, “Effects Common to All Action Alternatives on Forest Condition, Cumulative Effects”).

Regeneration harvest would add to past and present actions by further reducing the amount of forest stands 80 years and older in the watershed. Compared to the other alternatives, this alternative would reduce the amount of late-successional stands in the watershed by the greatest amount. In the Lost Creek Watershed, 98 acres would be converted to early seral stands. This is .003 percent of the total acres within the watershed. See Section 3.2.3.2, “Effects Common to All Action Alternatives on Forest Condition, Cumulative Effects” for additional information.

At the larger spatial scale of the planning area (Medford District), it was projected that implementation of the proposed resource management plan would result in an increase from present levels of late-successional stands on BLM-administered lands over the next 10, 20, 30, and 100 years (USDI 1994, 4-26). Regeneration acres would be offset by in-growth of stands into the late-successional classification. In the long-term (100 years), the ratio of older forests to younger forests would increase and more closely approximate the balance of seral stages which is thought to have existed on BLM-administered lands prior to grazing, logging, and fire suppression (USDI 1994, 4-24).

3.2.3.4 Effects of Alternative 3 (Proposed Action) on Forest Condition

Table 3.4. Proposed Silviculture Treatments in Alternative 3

Silvicultural Treatment	Matrix Acres
Density Management	300
Selection Harvest	48
Modified Even-aged Regeneration	6
Total treatment acres	**354**

Direct and Indirect Effects

Within the Lost Creek Watershed, regeneration harvest would convert six acres of late-successional to early seral stands. Regeneration harvesting would cause a decrease in canopy closure from 80-100 percent to 10-15 percent, a change in stand structure from multi-layered to two-storied, and a change in vegetative composition towards species found in younger, less complex stands. In early seral stands, individual conifer tree growth would be maximized with stand density maintained at levels the stand has resources (moisture, nutrients, and sunlight) to support.

The regeneration harvest acres would be less than the levels prescribed for (based upon stand age) and allowed under the NWFP and the Medford District ROD/RMP. The suggested actions from the Lost Creek Watershed Analysis emphasize higher levels of connectivity, stand structure, and canopy closure in treated forest stands. To achieve those conditions, fewer acres of regeneration harvest are proposed.

In the Lost Creek Watershed, selective cut would occur on 48 acres and density management would occur on 230 acres. About 70 acres of density management would occur in the Lower Big Butte Watershed Analysis Unit. These density reduction treatments would increase the vigor, growth, and structural development in treated stands. Stand and landscape resistance and resiliency to environmental disturbances would increase.

Cumulative Effects

Density reduction treatments would occur on 348 acres, or about 1 percent of the watershed acres. About 70 acres of density management, or .002 percent of the total acres, would occur in the Lower Big Butte Watershed Analysis Unit. At this level, the impacts of density reduction on forest stands within the watershed would be considered minor (see Section 3.2.3.2, “Effects Common to All Action Alternatives on Forest Condition, Cumulative Effects”).

This alternative would add to past and present actions in the watershed by further reducing the amount of forest stands 80 years and older by 6 acres. Compared to Alternative 2, this alternative would reduce the amount of late-successional forests in the watershed the least. See Section 3.2.3.2, “Effects Common to All Action Alternatives on Forest Condition, Cumulative Effects” for additional information.

At the larger spatial scale of the planning area, six acres of regeneration harvest would not cause a decrease in the total amount of late-successional stands on BLM-administered lands. The six acres of regeneration harvest would be offset by the in-growth of stands into the late-successional classification.

Implementation of this alternative would not meet the timber management assumptions and forest condition projections detailed in the Medford ROD/RMP. The ROD/RMP modeled harvest levels and projected future stand ages within the planning area based upon the assumption that stands on matrix lands within NGFMA 100 years or older

would be programmed for a regeneration harvest. This alternative does not use stand age as the sole criteria for prescribing regeneration harvests. Stand structure (canopy closure, species diversity, and variability of tree size classes), stand density, and tree condition (crown ratio, form and foliage color) are the principal characteristics used to assess overall stand health. The silvicultural systems were determined based on the condition of these attributes and combined with the recommendations from the watershed analysis.

3.3 Silviculture Treatment within Northern Spotted Owl Designated Critical Habitat Units

3.3.1 Introduction

The Flounce Around Timber Sale project area is located within the Lost Creek and Big Butte Creek 5th field watersheds. Special land designations for northern spotted owls in the Flounce Around Project Area include: northern spotted owl (NSO) activity centers; a late-successional connectivity block (T33S, R1E, Section 1), and designated northern spotted owl critical habitat units (CHU)(OR CHU-34 and OR CHU-36). There are no northern spotted owl CHUs in the Big Butte Creek 5th field watershed.

In the Lost Creek 5th field watershed, which includes the proposed project:

- The BLM administers 12,930 total acres.
- Forested land totals 9,876 acres of BLM-administered land (excluding nonforest, low site, and noncommercial forest).
- A total of 7,249 acres (73 percent) of BLM-administered lands contain forests over 80 years old.

Northern spotted owl habitat suitability is rated by BLM biologists. Suitable habitat meets the spotted owl habitat needs for nesting, roosting and foraging. Dispersal habitat contains adequate canopy cover to allow spotted owls to disperse between areas of suitable habitat and remain for short periods of time, but does not provide habitat with the necessary structure or size to provide for longer term spotted owl nesting, roosting, and foraging.

Known spotted owl sites are monitored annually. If the sites are not occupied, the survey area is expanded to suitable habitat within approximately one mile of the known site.

3.3.2 Affected Environment

Three northern spotted owl sites within the project area have designated activity centers. An activity center is defined as “an area of concentrated activity of either a pair of spotted owls or a territorial single owl” (USDA and USDI 1994, C-10). The activity centers retain “100 acres of the best northern spotted owl habitat as close as possible to a nest site or owl activity center for all known (as of January 1, 1994) northern spotted owl activity centers (USDI 1995, 39; USDA and USDI 1994, C-10).”The activity centers are 100 acres of the best habitat near the center of activity of each pair or resident single site which was known on January 1, 1994 (USDA and USDI 1994, C-10). Two additional spotted owl sites were located after January 1, 1994. These sites do not have designated activity centers; however, the nest locations could be buffered and protected from proposed silviculture treatments. One additional NSO site with a designated activity center is located north of the project area within the provincial radius (1.2 miles for the Cascade Province) of a proposed timber sale unit. These sites have been monitored in the past several years by BLM biologists.

A connectivity block, designated in the Medford District ROD/RMP, is located in T33S, R1E, Section 1. The ROD/RMP recommends maintaining 25 to 30 percent of the connectivity block in late-successional forest (USDI 1995, 40). At this time, harvest has been deferred on 305 acres of the best late-successional habitat in this section.

In 2004, a lawsuit (*Gifford Pinchot Task Force* v. *USFWS*) questioned whether spotted owls were being adequately protected by actions which were allowed to proceed in designated CHU. The assumption was that the actions in CHU were not adequately addressed in the 1998 and 1999 USFWS Biological Opinions.

In 1992, northern spotted owl CHU (CHU OR-34 and OR-36), was designated through Federal Register Notice. Critical habitat was identified as part of the 1992 draft recovery plan for the northern spotted owl. However, prior to completion of the spotted owl recovery plan, the NWFP was adopted and Option 9 was determined by the US Fish and Wildlife Service (USFWS) to provide habitat for the northern spotted owl:

"Critical habitat was identified by the [US]FWS to provide primary constituent elements for the northern spotted owl. These elements include habitat features that support spotted owl nesting, roosting, foraging, and dispersal. The US Forest Service and Bureau of Land Management provided an alternative proposal to provide these important life requirements through LSR, riparian reserves and other land use allocations and activities under the NWFP [Option 9]. The FWS acknowledged this plan adequately provided habitat for northern spotted owl recovery in their biological opinion on the NWFP (1994). All activities within the Action Area are consistent with the NWFP" (USFWS BA 11 July 2003 BA-74).

The NWFP ROD states "*management direction and land allocations of these standards and guidelines of the NWFP are intended to constitute the Forest Service and BLM contribution to the recovery of the northern spotted owl*" (USDA and USDI 1994, A-2). The Medford District ROD/RMP and NWFP provide a network of LSRs, 100-acre activity centers, connecting riparian corridors, connectivity blocks, and 15 percent late-successional forest retention in the 5th field watershed. However, the designation of CHU through the Federal Register has never been resended.

The Elk Creek Late-Successional Reserve (LSR) was established under the NWFP in 1994. At that time, 74 percent of CHU OR-34 was incorporated into the LSR. The remaining 26 percent (4,974 CHU acres) was not included in the LSR and was not carried forward into the NWFP as "critical habitat." This included lands within the Flounce Around project area in Sections 5, 7, and 18 in T34S, R2E and Sections 1, 11, 12, 13, 14, and 15 in T34S, R1E. In their Biological Opinion, USFWS considered Option 9 of the NWFP to adequately provide habitat for northern spotted owl recovery. However, the "critical habitat" designation by USFWS was never officially removed from these lands.

In 2002, the Timbered Rock Fire burned in CHU OR-34. Although the Timbered Rock Fire occurred within the 5th field Elk Creek Watershed, approximately 180 acres burned in the 5th field Lost Creek Watershed. Approximately 10 acres of suitable spotted owl habitat within the Lost Creek-Elk Creek 5th field watershed boundary was burned. The Timbered Rock Fire had a no discernable impact to the spotted owl habitat present in the Lost Creek 5th field watershed.

3.3.3 Environmental Consequences

Table 3.5. Northern Spotted Owl Suitable Habitat Disturbance in CHUs OR-34 and OR-36 by Alternative

Alternative	Suitable CHU habitat		
	Proposed for Entry	Changed to Unsuitable	Changed to Dispersal
No Action	0	0	0
Alternative 2	150 acres	83 acres	67 acres
Alternative 3	0	0	0

3.3.3.1 Effects of Alternative 1 (No Action) on Northern Spotted Owl Designated Critical Habitat Units

Direct and Indirect Effects

The No Action Alternative would have no effect on the NSO. Due to competition for nutrients and light in the dense, overstocked stands in the project area, it would take longer for large overstory trees to develop into good nesting habitat. Under the No Action Alternative, there would be no effect to NSO because no suitable NSO habitat would be removed or altered (see Table 3.5). Also, there would be no change to NSO habitat within designated CHUs.

Cumulative Effects

No change is expected from current trends within the watershed. Nonfederal lands would be harvested and most would remain in early to mid-seral conditions. Within the Lost Creek Watershed, 73 percent of the BLM-administered forest is 80+ years old.

Since 1990, new threats to northern spotted owls, such as barred owls, West Nile virus, and sudden oak death, have emerged and increased the risk to the species. Barred owls, invasive competitors to the northern spotted owl, have been located in the Lost Creek Watershed. Barred owls may be more of a habitat generalist and occupy a wider diversity of habitat types than northern spotted owl. Spotted owl may respond to barred owls by avoidance; however the rate and extent of spotted owl displacement by barred owls is unknown. It is uncertain whether this effect is increased by other issues.

3.3.3.2 Effects of Alternative 2 on Northern Spotted Owl Designated Critical Habitat Units

Direct and Indirect Effects

In Alternative 2, regeneration harvest on 150 acres in CHU OR-34 would remove 83 acres of suitable spotted owl critical habitat; 83 acres would become not suitable for nesting, roosting, and foraging and 67 acres would be changed to dispersal habitat (see Table 3.5).

Silviculture treatment would occur on 503 acres of Matrix land, including 467 acres of suitable northern spotted owl habitat. Proposed regeneration harvest would occur in 98 acres of suitable spotted owl habitat. This treatment would result in the loss of 91 acres of suitable nesting habitat and 7 acres of suitable dispersal habitat. Density management and selective cut, which leave more than 40 percent canopy cover, would downgrade 369 acres of suitable habitat to dispersal only. For purposes of consultation under Section 7 of the Endangered Species Act, harvest under Alternative 2 would be “may affect, likely to adversely affect” for northern spotted owl. Proposed actions are covered under the programmatic *Rogue River/South Coast Biological Opinion for Medford District, Bureau of Land Management, Rogue River and Siskiyou National Forests,* Biological Opinion

(FWS) 1-14-03-F-511, dated 20 October 2003. All proposed silviculture treatments would occur on Matrix lands and would meet the management actions/direction from Medford District ROD/RMP and the standards and guidelines of the NWFP.

A seasonal restriction from March 1 through June 30 (or until two weeks after the fledging period) would be in affect for all activities within ¼ mile of known northern spotted owl sites, or until the sites have been surveyed and nonnesting has been determined (USDI 2003, Appendix A 3).

Alternative 2 would remove habitat within the connectivity block (T33S, R1E, Section 1); 23 acres are proposed for regeneration harvest and 9 acres are proposed for selective cut or density management harvest. The 23 acres of regeneration harvest would no longer be suitable northern spotted owl habitat after harvest. However, since 305 acres of the best late-successional habitat in this section have been deferred from harvest, only 10 percent of the available late-successional habitat in the section would be entered. Late-successional habitat would still be provided in 46 percent of the section. This more than meets the Medford District ROD/RMP requirements to maintain 25 to 30 percent of each block in late-successional forests (USDI 1995, 41). The connectivity block would continue to allow northern spotted owl dispersal across the landscape.

All proposed silviculture treatments would occur on Matrix lands. Approximately 7,000 acres of BLM-administered lands in the 5th field watershed are mature seral stage (101-200 years old) and old-growth (201+ years old). The action would meet all the requirements of the RMP, NWFP, and USFWS. Northern spotted owls would be able to disperse through the 5th field watershed between the 100-acre activity centers and larger LSRs.

Of the 3 designated 100-acre northern spotted owl activity centers in the project area, 1 activity center has not been active since 1998 and the other 2 contain resident pairs of owls. The resident pairs are likely to remain in the 100-acre activity centers after the harvest, although they may not successfully produce young for 10-15 years. Other sites in the Medford District have successfully produced young the year after timber harvest occurred outside the 100-acre activity centers.

Silviculture treatment is proposed within 1.2 miles of two northern spotted owl sites which do not have 100-acre activity centers because they were discovered after 1994. No harvest would occur within the known nest stands of either site. These sites would continue to provide pockets of suitable northern spotted owl habitat (nesting/roosting/foraging and roosting/foraging) within the nest stands.

Thinning would occur on 87 acres immediately adjacent to the nest stand in 1 of the northern spotted owl sites. These acres would be downgraded from suitable nesting/roosting/foraging to dispersal. They would likely return to suitable spotted owl habitat in 10-15 years. Regeneration harvest would occur on 6 acres within ¼ mile of this site. Those acres would no longer provide suitable northern spotted owl habitat. Northern spotted owls have used three different nest trees in this site. Nesting was last confirmed in 1999 and northern spotted owls were last found using the area in 2000. Barred owls were found at the site in 2001. The area has been surveyed for spotted owls each year since the barred owls were found, with negative results. It is unknown if spotted owl remain in the area. The proposed action would remove 93 acres of suitable spotted owl habitat within ¼ mile of known historic spotted owl nest trees locations in this site. No harvest is proposed within the stands where historic nests are present.

Silviculture treatment near the other northern spotted owl site would change 13 acres of suitable spotted owl roosting/ foraging habitat to dispersal. The proposed action is within ¼ mile of the 2003 nest location. The female at this site came from a nearby 100-acre activity center, approximately 1.5 miles to the northeast. The owls were not found to be nesting in 2004.

Due to disturbance and removal of suitable matrix habitat near the two nest sites, the sites will likely not be viable after the proposed action is completed. However, dispersal habitat would still be present after the density management and select cut actions, and the owls could disperse between the LSR and the 100-acre owl cores in the 5th field watershed and into adjacent watersheds.

Cumulative Effects

USFWS identified barred owl as a potential threat to spotted owls (Courtney, et al. 2004, 7-39). There is a perceived threat because barred owls use habitats typical of spotted owl habitat. They may be able to coexist through habitat segregation. Whether this will occur is unclear. The cause of the barred owl invasion is not clear. There is great uncertainty associated with the actual and potential effects of the barred owl on spotted owl.

Habitat loss to timber harvest is often considered to be a major factor in spotted owl decline. However, some areas where spotted owls are in the worst decline, such as Olympic National Park, have never been harvested (Courtney, et al., 2004, 7-35). In the Gifford Pinchot National Forest in Washington, the density and impact of barred owls appears higher in areas without timber harvest (Courtney, et al. 2004, 7-35). Although "barred owls are having a negative impact on spotted owls at least in some areas, the extent of this impact and its ultimate outcome is uncertain" (Courtney, et al. 2004, 7-43).

Since CHU was designated in 1992, 168 acres of forest has been regeneration harvested on BLM-administered land in the Lost Creek Watershed. This includes 98 acres of sold, but unharvested, timber in CHU OR-36. CHU OR-36 is outside the Flounce Around project area, but within the Lost Creek Watershed. Regeneration harvest proposed in six acres of suitable habitat would make that habitat no longer suitable for spotted owls. Suitable habitat on 92 acres would be downgraded to dispersal habitat. The remaining acres harvested since 1991 would provide dispersal and/or suitable roosting/foraging spotted owl habitat. In 1994, CHU OR-36 contained 3,992 acres of suitable habitat. In the Lost Creek Watershed, the current baseline is 3,015 acres, a loss of 977 acres due to timber harvest since 1994 (USFWS 2003, 61). The Flounce Around timber sale would not enter CHU OR-36 for harvest and no future timber harvest is currently planned within OR-36.

The "… proposed actions will not affect the ability of the CHUs to function as intended for northern spotted owl…. The action Agencies expect to harvest less than five percent of the existing suitable habitat in CHUs (Appendix B, Table B-1, [USFWS BO] over the next five years…. Even though wildfires impacted some of the CHUs, Table B-1 [USFWS BO] shows that overall, throughout the Action Area, 90 percent of the suitable habitat remains… CHUs dispersal habitat is well-distributed in the Action Area, and is ample for owl movement…" (USFWS 2003, BA-74).

The USFWS BO, dated 20 October 2003 (p. 81), concludes that given the juxtaposition on the landscape, the current condition of the CHUs, and anticipated nesting/roosting/foraging (NRF) loss within the CHUs, the USFWS does not anticipate the connectivity or NRF goals of the southwest Oregon administrative units' (BLM and USFS) critical habitat network will be impeded by the proposed action. The USFWS bases this conclusion on the amount of spotted owl habitat impacts, the remaining habitat in those impacted CHUs, and the remaining NRF habitat throughout the CHU network within the action area.

The final rule for the designation of critical habitat for the spotted owl stated that adverse modification analysis should be based on impacts to CHUs at the provincial level. While the proposed action would affect the constituent elements of critical habitat, it is unlikely it would appreciably reduce or diminish the survival or recovery of the spotted owl, both at the provincial and the range-wide level.

Because the USFWS anticipates the proposed action may somewhat impair the function of up to three CHUs but will not impede the goals of any individual CHU within the action area from being met, the provincial critical habitat network will continue to function as intended and adverse modification of critical habitat is not anticipated by the USFWS at this time.

All proposed silviculture treatments would be on matrix lands, the action would meet all the requirements of the NWFP and USFWS. Spotted owls would be able to disperse through the 5th field watershed between the 100-acre activity centers and larger LSRs.

Northern spotted owl habitat in OR-34 was also addressed in the Timbered Rock Fire consultation, which was covered under the 2003 BA/BO. The conclusion in the BO was that "*5 percent of suitable habitat for spotted owls was lost [in Elk Creek watershed]. However the remaining 21,022 acres of NRF occurs largely in large blocks in the northern portion of the CHU and there is still extant NRF and spotted owls within the CHU as evidenced by recent surveys by the BLM and Boise Cascade*" (USFWS 2003, 61).

In addition, there is available dispersal habitat within most federal sections of at least 60 percent or better along the northern and western portion of the CHU which should continue to provide dispersal opportunities in a northeast - southwest direction across this CHU and along the Rogue/Umpqua divide. The 2003 USFWS BO (p. 62) states that CHU OR-34 contains 21,022 acres in the current NRF baseline, down 9 percent from the 1994 NRF baseline.

3.3.3.3 Effects of Alternative 3 (Proposed Action) on Northern Spotted Owl Designated Critical Habitat Units

Direct and Indirect Effects

Under Alternative 3, no northern spotted owl designated CHU would be entered so there would be no impact to designated CHU.

Harvest would occur on 353 acres of suitable NSO habitat (see Table 3.5). The action would have no effect on the productivity of the spotted owl 100-acre activity centers located within the proposed action area because no silviculture treatment is proposed within the provincial radius (1.2 miles) of the activity centers.

Silviculture treatments near the sites with no 100-acre activity centers south of Lost Creek Lake would be the same as Alternative 2. Due to disturbance and removal of suitable matrix habitat near the two nest sites, the sites will likely not be viable after the proposed action is completed. However, dispersal habitat would still be present after density management and selective cut actions, and the owls could disperse across the watershed between LSRs. Dispersal would be provided by 100-acre owl cores, Riparian Reserves, and late-successional habitat retention under the NWFP. Currently, 73 percent of the BLM-administered land in the 5th field watershed is 80+ years old (late-successional) forest. This would provide dispersal habitat for spotted owls in the watershed and would allow them to disperse between the larger, regional LSRs in adjacent watersheds which were established to provide late-successional and old-growth forest ecosystems for the northern spotted owl (USDI 1995, 32; USDA and USDI 1994, A-4).

Areas which would be treated for density management and selective cut would leave more than 40 percent canopy cover. These treatment areas would be expected to remain as spotted owl dispersal habitat. They would be expected to provide suitable spotted owl habitat within 10-15 years.

This alternative would have no impact to the connectivity block in T33S, R1E, Section 1 because no harvest is proposed in the connectivity block.

Since all proposed silviculture treatments would be on matrix lands, the action would meet all the requirements of the RMP, NWF, and USFWS. The action would not affect the viability of the 3, 100-acre activity centers near the project area, because it is outside the provincial radius of these sites. However, 2 sites without 100-acre activity centers would have habitat reduced near the known nest trees. The sites would likely no longer have enough suitable habitat acres to support successful nesting. The sites would still provide dispersal habitat and spotted owls could disperse through the areas between the LSRs and 100-acre activity centers in the 5th field watershed and into adjacent watersheds.

Cumulative Effects

A status review of the northern spotted owl was released in September 2004 (Courtney, et al. 2004). This report consists of a critical review and synthesis of recent information on the status of the spotted owl. It was prepared to provide USFWS with information for the 5-year status review. A USFWS 5-year review summary (U. S. Fish and Wildlife Service 2004) concluded that the species continues to warrant the protection of the Endangered Species Act as a threatened species.

The emergence of barred owls as invasive competitors, West Nile virus, and sudden oak death as new threats to northern spotted owls suggests an increase in risk to the species since 1990. Barred owls may be more of a habitat generalist and occupy a wider diversity of habitat types than spotted owl. Spotted owl may respond to barred owls by avoidance. The rate and extent of displacement of spotted owls by barred owls is likely occurring, but the rate and extent of this are unknown, and, further, whether this effect is exacerbated by other confounding issues is uncertain (Courtney, et al. 2004).

These newly identified threats are poorly understood, are likely to be pervasive, and would be difficult to alleviate. These threats are of uncertain magnitude and effect. Silviculture treatments would not have any known additive effect. However, the increased risk from these new threats was not sufficient to change the status of the northern spotted owl (USFWS 2004, 55).

The proposed timber sale would occur on matrix lands and meets the requirements outlined in the NWFP. One hundred-acre activity centers are designated LSR, and would not be entered. These activity centers, Riparian Reserves, and 15 percent late-successional habitat retention were designed to mitigate timber harvest effects by providing for well-distributed patches of late-successional forest that serve for dispersal of mobile species, such as the northern spotted owl.

Range-wide, the northern spotted owl population experienced an average decline of 3.7 percent per year from 1985-2003 (USFWS 2004, 14). However, within the Tyee, Klamath, and South Cascades study areas in southwestern Oregon, the spotted owl populations appear to be stable (USFWS 2004, 13-14). Habitat loss due to timber harvest was identified as the paramount threat in 1990 (USFWS 2004, 54).

The rate of suitable habitat loss due to timber harvest on private, state, and federal forest lands declined between the late 1980s and the early 1990s (USFWS 2004, 24). The harvest rates of suitable habitat on BLM lands in Oregon was 3 percent per year (22,000 acres) in 1990 and dropped to 0.52 percent per year (4,911 acres) by 2003 (USFWS 2004, 28). During this period of declining rates of habitat loss, the spotted owl populations in southwestern Oregon appeared to be stable. The rate of habitat loss due to timber harvest on federal lands is expected to be less than four percent per decade (USDA and USDI 2004, 111).

Since the harvest rate on federal lands in Oregon is expected to remain low for the foreseeable future, it is reasonable to expect that the northern spotted owl population would remain stable in southwestern Oregon. The harvest of less than 100 acres of

suitable habitat and the short-term degradation of approximately 350 acres of suitable roosting and foraging habitat associated with the proposed project are included as part of the BLM timber harvest program in southwestern Oregon. In addition, it is estimated that within the NWFP area, habitat in-growth is occurring at approximately 8 percent per decade (600,000 acres per decade) over the baseline condition established in the NWFP (USFWS 2004, 26).

Private forest lands and federal, nonreserved matrix lands will not develop into suitable spotted owl habitat given the management objectives for those lands. The private lands are managed in compliance with the ESA and were not included in the designation of spotted owl critical habitat. Nonfederal lands continue to be harvested and most would remain in early to mid-seral conditions. This would benefit species that depend on these seral stages, including sharp shinned hawks, neotropical birds, quail, skunks, squirrels, rabbits, and hares.

Approximately 80 percent of federal land within the NWFP area is reserved from regeneration harvest (USDA and USDI 2004, 111) and will develop into suitable owl habitat. Managed, mid-seral stands on federal, nonreserved matrix and on private lands would offer dispersal quality habitat to spotted owls that may be used as connectivity between blocks of late-seral habitat contained within the federal reserves.

Past timber harvest in the watershed has reduced habitat for spotted owls. In the 1920s, 65 percent of the forest stands were classified as large conifer stands. In the 1940s and 1950s, small areas were clearcut (approximately 20 acres) with 1,800 acres harvested in various levels. In the 1960s through the 1980s, timber harvest rates increased as 1,683 acres were clearcut. Data are not available about the amount of this forest that was suitable spotted owl habitat. There are no data available about the number of northern spotted owls present in the watershed on private or Federal lands during these years.

However, the clearcut acres would not provide any habitat for late-successional species, including dispersal for spotted owls. These acres are currently between 25 to 45 years old and may provide some dispersal habitat, but would not provide suitable spotted owl habitat for approximately 20-30 more years. These acres would provide habitat for other mid-seral species, such as sharp-shinned hawks, neotropical birds, and other species.

In the past 10 years, after the Medford District ROD/RMP and the NWFP were adopted, only 2 acres have been clearcut and 168 acres regeneration harvested on BLM-administered lands in the watershed. Since the 1995 ROD/RMP, 1,298 acres were treated with overstory removal and commercial thin. Most of these acres would provide dispersal habitat for spotted owls and meet matrix land requirements under the ROD/RMP and NWFP. There are approximately 98 acres being harvested under current timber sales in the Lost Creek 5th field watershed. No timber sales are currently planned in the watershed for the next five years.

The proposed project would not incrementally affect the stability of the northern spotted owl population in southwestern Oregon since the rate of habitat loss is substantially reduced, there is substantial in-growth of habitat, and newly identified threats are independent to the proposed action.

3.4 Summary of Effects on Other Resources

3.4.1 Introduction

The following resources did not pertain to the issues identified and analyzed in this EA. Possible effects from each alternative were analyzed and the analyses are included in the Appendices. A summary of these effects is included below. See the Appendices for the complete discussion.

3.4.2 Effects of Alternatives on Cultural Resources

Cultural surveys were completed for the project area. There would be no direct environmental consequences to cultural resources from the action alternatives, because all sites would be buffered and protected. One designated crossing of the Historic Military road in T33S, R2E, Sections 8 and 9 would occur. Indirect consequences of the increased activity in the project area could lead the possibility of further looting of some of the sites.

See Appendix A, Cultural, for a full discussion of the effects of the alternatives on cultural resources.

3.4.3 Effects of Alternatives on Botany

The Flounce Around project area is outside the ranges of the Endangered plants *Fritillaria gentneri*, *Lomatium cookii*, and *Limnanthes flocassa* ssp. *grandiflora*. The proposed activities would be **"no effect"** to these three T&E plants.

Surveys for Special Status vascular and nonvascular plants have been completed in all silviculture treatment units. The proposed activities would not impact any sites or trend Special Status vascular or nonvascular plants toward listing. Predisturbance surveys fro Special Status fungi are not practical (USDA and USDI 2004, 122), so it is unknown if Sensitive fungi are present in the units. Because of their rarity, it is unlikely they are present in the harvest units and the risk of impacting them from the proposed activities would be low.

See Appendix B, Botany, for a full discussion of the effects of the alternatives on botany.

3.4.4 Effects of Alternatives on Wildlife

3.4.4.1 T&E Species

No known bald eagle nest trees, perch trees, or roost trees would be cut. By using PDFs, the proposed action would not affect bald eagle nest success and recovery of the species.

See Section3.4, Silviculture Treatment within Northern Spotted Owl Designated Critical Habitat Units, for discussion of effects of proposed actions on northern spotted owls.

3.4.4.2 Other Wildlife

The list of special status species known to be present in the BLM Medford District was updated with the latest information from the Oregon Natural Heritage Program information in 2004 and again in March 2005. The updated special status species list was reviewed and impacts from the proposed Flounce Around Timber Sale actions were analyzed (see Appendix C, Wildlife, Table C-2).

Northern Goshawk: In Alternative 2, no known nest trees would be removed. Dispersal between 5th filed watersheds would not be reduced by the proposed action. The proposed action would not reduce the viability of the goshawk population in the Lost Creek Watershed. In Alternative 3, density management and selective cut treatments would reduce stand density and produce more suitable goshawk habitat and provide better foraging conditions. Application of PDFs would ensure the effect to species persistence is negligible.

Pacific Fisher: The proposed actions would not be expected to reduce the viability of the fisher population in the Lost Creek Watershed.

Cavity Nesters: The proposed actions would potentially disturb a small number of individual cavity-dependent animals during the year of the action, but would not reduce the persistence of cavity nesting species in the Lost Creek Watershed.

Neotropical Migratory Land Birds: The proposed actions would not affect long-term population viability of any Neotropical bird species. The actions would not lead to the need to list any of the species as T&E.

See Appendix C, Wildlife, for a full discussion of effects of proposed actions to wildlife.

3.4.5 Effects of Alternatives on Soil/Hydrology

3.4.5.1 Soil

The effects of soil compaction on the productivity of conifer tree growth in Oregon's forests are well-documented. The effects of different tillage efforts to ameliorate soil compaction are also well-documented (see Appendix D, Soil/Hydrology).

The standard acceptable soil productivity losses (6%) are stated in the ROD/RMP on pages 4-13. This standard was developed primarily from the research of McNabb and Froehlich 1984, OSU and Wert and Thomas, 1981 which indicated that the loss in soil productivity of a given harvest unit was equivalent to approximately ½ the amount of area subjected to compaction. The threshold of approximately 5% soil productivity loss from timber harvest activities, as identified in the ROD/RMP, equates to an allowance of approximately 12% area impacted by tractors. With the implementation of the Best Management Practices identified in the Medford District ROD/RMP (p. 166-167) for proper soil moisture conditions less than 35%. Research shows that proper equipment (winger toothed subsoiling) (Davis 1990) (Froehlich and Miles 1984) and skid trail spacing of 150 feet (Froehlich, Aulerich, and Curtis 1981) would be effective at meeting identified targets for soil productivity. Soil ripping and/or subsoiling does not restore all biological and physical properties that existed prior to disturbance. However, with the implementation of the identified BMPs the anticipate impacts are expected to be within in the range identified in the Medford District ROD/RMP for soil effects.

3.5.5.2 Hydrology

The hydrology analysis area for the proposed project is the portion north and a small area just south of the Lost Creek Reservoir (about 21,400 acres or about ⅓ of the 5th field Lost Creek Watershed Analysis Unit). Of these acres, BLM manages approximately 10,760 aces or 1/6 of this 5th field watershed analysis unit). This analysis area includes the Lost Creek and Flounce Rock subdrainages. This analysis area was chosen because the Lost Creek Dam acts as a barrier to all downstream flows from the project area and the subsequent effects that link these streams.

Transient Snow Zone (TSZ)
Between 12 and 50 acres are proposed for regeneration harvest in the TSZ under this

project. This would increase nonrecovered opening by 1% - 3.5% in this portion of the watershed. However, because the total percentage of TSZ acres (6.5%) is so small within this portion of the watershed, this is not expected to increase the risk for a rain-on-snow runoff event.

Road Densities

Currently, there are approximately 138 miles of all road types in this portion of the watershed. Of these, approximately 34 miles (25%) are under BLM control. The remaining roads are managed by private timber companies, US Army Corps of Engineers, Jackson County, and private land owners. The road density for the analysis area is 4.1 miles per square mile.

No permanent roads would be constructed in the proposed project so road densities would not increase. Peak flows would not increase from increased road densities. Temporary operator spur roads and landing construction is not expected to contribute to increased runoff and associated peak flows because ripping from the decommissioning of the roads and landings would increase infiltration, reduce runoff, and promote revegetation.

Road-Related Sediment

Proposed road improvement and renovation are designed to stabilize road drainage and protect road surfaces from erosion. Initially, areas with surface disturbance from these activities would be subject to erosion. However, the use of Project Design Features would cause these impacts to be minor and short-term (less than 1 year). Long-term (3-5 years) these actions are expected to reduce road-related sediments on the roads proposed for these improvements..

Another major factor in the condition of roads and risk of sediment production is the frequency of proper maintenance. Unpaved logging roads are designed to have annual maintenance to maintain drainage design such as crowned, insloped or outsloped running surfaces; to keep ditchlines clear of debris; to prevent culverts from plugging; and to maintain adequate amounts of rock surfacing. Without this maintenance, sedimentation in nearby streams would increase from erosion in the running surface or from culverts plugging with the possibility of washing out roadways or ditchlines. Road access would decrease if roads become impassable.

The magnitude and frequency of road maintenance on BLM-administered lands has declined in the last 10 years. This has lead to roads becoming degraded and at higher risk for sediment production. On private timberlands, roads are generally not maintained to the same level as BLM-administered roads and also contribute to the current level of road-related sediment.

The total amount of road miles controlled by the BLM (25%) in the project area is relatively small on a landscape scale. Therefore, these actions would have a limited effect on meeting the overall objective of moving sediment levels toward more reduced and less impactive levels.

Water Quality

No streams in the project area are on the Oregon State Department of Environmental Quality 303(d) list as water quality-limited.

See Appendix D, Soil/Hydrology for the full discussion of effects to hydrology.

3.4.6 Effects of Alternatives on Fisheries

Coho salmon are only present in the project area in the Rogue River below Lost Creek Dam and in Little Butte Creek. Most of the proposed silviculture treatments and road work would occur above the Lost Creek Dam. The activities above the dam would have **"no affect"** to coho salmon because all impacts would stop at the Lost Creek Reservoir and would not reach coho. The four harvest units and related road work located below the dam would have little to no impact to coho salmon. One stream is located near a proposed log landing and it is unlikely any sediment would reach the Rogue River with the use of PDFs. Resident trout are the only fish in streams above the dam. Sediment would likely enter these streams from the proposed road work. Anticipated effects to trout include short-term (less than one year) disturbance of feeding behavior and displacement. These effects would not cause physiological harm or affect the trout population in the area (see Appendix F, Fisheries, Aquatic Habitat, and Riparian Reserves, for more details on existing conditions and impacts from the proposed activities).

3.4.7 Effects of Alternatives on Visual Resources

No changes to major rockforms or waterforms would occur under any of the alternatives. One landform change would occur under the action alternatives at a proposed helicopter landing; however this landing is located on Oregon Department of Transportation land. Short-term (one year) visual contrasts to vegetation would occur. Modifications of trees, shrubs, and other woody debris from activities proposed in the action alternatives would not be evident to the casual observer in the long-term (more than one year).

See Appendix I, Visual Resources, for a full discussion of the effects of the alternatives on visual resources.

3.4.8 Effects of Alternatives on Economics

Under Alternative 1 (No Action), no harvesting would occur so there would be no return to the Federal Treasury and no forestry-related jobs would be created.

Under Alternative 2, approximately 3.9 million board feet would be harvested, with a return to the Federal Treasury of $560,000. Direct employment would be 37 jobs resulting in direct income of approximately $ 1.2 million dollars.

Under Alternative 3, approximately 2.2 million board feet would be harvested, with a return to the Federal Treasury of $310,000. Direct employment would be 21 jobs resulting in direct income of approximately $682,000 dollars.

See Appendix J, Economics, for more discussion on the effects of the alternatives on economics.

4.0 List of Preparers

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Randy Bryan, Engineer	Engineering
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Robyn Wicks, Natural Resource Specialist	Document Layout, Visual Resources
Jean Williams, Environmental Coordinator	NEPA Compliance

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