Maxfield Creek Large Woody Debris Placement on Private Land/Meadow Restoration
Environmental Assessment and Finding of No Significant Impact

Environmental Assessment Number OR-080-07-15

November 26, 2007

United States Department of the Interior
Bureau of Land Management
Oregon State Office
Salem District
Marys Peak Resource Area

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BLM
Salem District

Abstract: This (EA) environmental assessment discloses the predicted environmental effects of the cutting, removal and placement of approximately 50 pieces of large woody debris for the purposes of restoring meadow and aquatic habitat in the vicinity of Corvallis, Oregon. The actions would occur within AMA (Adaptive Management Area), and RR (Riparian Reserve) LUAs (Land Use Allocations) on BLM managed lands and on private lands.

As the Nation's principal conservation agency, the Department of Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering economic use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

BLM/OR/WA/PT-07/085+1792

FINDING OF NO SIGNIFICANT IMPACT

Introduction

The BLM (Bureau of Land Management) has conducted an environmental analysis (Environmental Assessment Number OR080-07-15) for a proposal to implement a meadow restoration and instream large woody debris placement project as follows: The restoration of approximately 25 acres of existing meadows and the enhancement of 2 miles of a continuous stream segment within Maxfield Creek. Under a cooperative agreement between the Luckiamute Watershed Council, Starker Forests Inc., Rosboro Lumber Co. and the BLM, approximately 50 green trees would be felled from adjacent BLM AMA (Adaptive Management Area) and RR (Riparian Reserve) lands and helicopter transported and placed in Maxfield Creek on private land. The project would occur within the Luckiamute River fifth-field watershed. The project would provide the following:

- Restore oak/woodland/meadow habitat.
- Restore instream and aquatic habitat
- Use whole trees of sufficient size and aggregated in a manner to mimic natural accumulation.
- Follow ODFW guidelines for timing for in-water work (July 1 to August 31).

Implementation of the Proposed Action will conform to management actions and direction contained in the attached Maxfield Creek Large Woody Debris Placement on Private Land/Meadow Restoration EA (*Maxfield Creek LWD Placement on Private Land/Meadow Restoration Environmental Assessment*). The Maxfield Creek LWD Placement on Private Land/Meadow Restoration EA is attached to and incorporated by reference in this FONSI (Finding of No Significant Impact) determination. The analysis in this EA is site-specific and supplements analyses found in the RMP/FEIS (*Salem District Proposed Resource Management Plan/Final Environmental Impact Statement*, September 1994) (EA p.1). The Maxfield Creek LWD Placement on Private Land/Meadow Restoration EA has been designed to conform to the RMP (*Salem District Record of Decision and Resource Management Plan*, May 1995), and related documents which direct and provide the legal framework for management of BLM lands within Marys Peak RA (Resource Area) (EA pg.3). Consultation with the U.S. Fish and Wildlife Service and NOAA (National Oceanic and Atmospheric Administration) NMFS (National Marine Fisheries Service) is described in Section 5.1 of the EA.

The EA and FONSI will be made available for public review at the Salem District office and on the internet at Salem BLM's website, http://www.blm.gov/or/districts/salem/index.htm (under Plans and Project) from November 24, 2007 to December 23, 2007. The notice for public comment will be published in a legal notice by the *Corvallis Gazette Times* newspaper. Comments received by the Marys Peak Resource Area of the Salem District Office, 1717 Fabry Road SE, Salem, Oregon 97306, on or before December 23, 2007 will be considered in making the decisions for this project.

Finding of No Significant Impact

Based upon review of the Maxfield Creek LWD Placement on Private Land/Meadow Restoration EA and supporting documents, I have determined that the Proposed Action is not a major federal action and would not significantly affect the quality of the human environment, individually or cumulatively with other actions in the general area. No site specific environmental effects meet the definition of

significance in context or intensity as defined in 40 CFR 1508.27. Therefore, supplemental or additional information to the analysis done in the RMP/FEIS through a new environmental impact statement is not needed. This finding is based on the following information:

***Context**:* Potential effects resulting from the implementation of the Proposed Action have been analyzed within the Luckiamute River 5th-field watershed and the project area boundaries.

The Proposed Action would occur within approximately 25 acres of AMA and RR LUA land, encompassing less than 0.012% of the forest cover within the affected watershed [40 CFR 1508.27(a)].

Intensity:

1. The *Project* is unlikely to a have any significant adverse impacts on the affected elements of the environment (EA section 3.2 – vegetation, fuels/air quality, wildlife, soils, water, and fisheries/aquatic habitat). The following is a summary of the design features that would reduce the risk of affecting the above resources (EA section 2.2.2).

   With the implementation of the project design features described in EA section 2.2.2, potential effects to the affected elements of the environment are anticipated to be site-specific and/or not measurable (i.e. undetectable over the watershed, downstream, and/or outside of the project areas). The project is designed to meet RMP Standards and Guidelines, modified by subsequent direction (EA section 1.3); and the effects of the project would not exceed those effects described in the RMP/FEIS [40 CFR 1508.27(b) (1), EA sections 3.2].

2. The *Project* would not affect:
   - ✓ Public health or safety [40 CFR 1508.27(b)(2)];
   - ✓ Unique characteristics of the geographic area [40 CFR 1508.27(b)(3)] because there are no historic or cultural resources, parklands, prime farmlands, wild and scenic rivers, wilderness, or ecologically critical areas located within the project areas (EA section 3.1);
   - ✓ Districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places, nor would the Proposed Action cause loss or destruction of significant scientific, cultural, or historical resources [40 CFR 1508.27(b)(8)] (EA section 3.1).

3. The *Project* is not unique or unusual. The BLM has experience implementing similar actions in similar areas without highly controversial [40 CFR 1508.27(b)(4)], highly uncertain, or unique or unknown risks [40 CFR 1508.27(b)(5)].

4. The *Project* does not set a precedent for future actions that may have significant effects, nor do they represent a decision in principle about a future consideration [40 CFR 1508.27(b)(6)]. The BLM has experience implementing similar actions in similar areas without setting a precedent for future actions.

5. The interdisciplinary team evaluated the *Project* in context of past, present and reasonably foreseeable actions [40 CFR 1508.27(b)(7)]. Potential cumulative effects are described in the

attached EA. These effects are not likely to be significant because of the project's scope (effects are likely to be too small to be measurable), scale [project area of 25 acres], encompassing less than 0.012% of the forest cover within the Marys Peak Resource Area (RA), and duration (direct effects would occur over a maximum period of 4-6 years following salvage) (EA section 3.2).

6. The Project is expected to adversely affect Endangered or Threatened Species listed under the Endangered Species Act (ESA) of 1973 [40 CFR 1508.27(b) (9)].

   NOAA (National Oceanic Atmospheric Administration) NMFS (National Marine Fisheries Service)

   Consultation with NOAA NMFS is required for all actions which 'may affect' listed fish species and critical habitat under the ESA (Endangered Species Act of 1973) [40 CFR 1508.27 (b)(9)].

   Proposed actions which 'May Affect' would comply with existing programmatic consultation and relevant design criteria, and no additional consultation would be necessary. Existing programmatic consultations cover log removal and placement for in-stream restoration projects. Log removal and placement for in-stream restoration is covered under NOAA NMFS *Endangered Species Act Section 7 Formal Programmatic Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for Fish Habitat Restoration Activities in Oregon and Washington, CY2007-CY2012*.

   Protection of EFH (Essential Fish Habitat) as described by the Magnuson/Stevens Fisheries Conservation and Management Act and consultation with NOAA NMFS is required for all projects which may adversely affect EFH of Chinook and coho salmon. The proposed actions in the Maxfield Creek LWD Placement on Private Land/Meadow Restoration EA are not anticipated to adversely affect EFH. This determination is primarily due to the distance of EFH from treatment areas.

   U. .S. Fish and Wildlife Service

   The Maxfield Creek LWD Placement on Private Land/Meadow Restoration project is a modification of the Maxfield Creek Density Management\Woodland Restoration\Upland Habitat Restoration\Aquatic Habitat Restoration BA which was submitted for Formal Consultation with the U.S. Fish and Wildlife Service (USFWS) as required in Section 7 of the Endangered Species Act (ESA) of 1973 (16U.S.C. 1536 (a)(2) and (a)(4) as amended). Consultation was completed on March 27, 2006 (Biological Opinion (BO) Reference number 1-7-06-F-0080). As a result of consultation, the USFWS concluded that the Maxfield Creek Density Management\Woodland Restoration\Upland Habitat Restoration\Aquatic Habitat Restoration Project is not likely to jeopardize the continued existence of the spotted owl and marbled murrelet.

   The project design features for this modification are consistent with the existing Biological Assessment. The taking of recently girdled trees along the meadow's edge and additional green trees from stands surrounding the meadows for stream and fish habitat enhancement

would have no new or additional effect to listed species or critical habitat that was not considered in the associated Biological Opinion.

7. The *Project* does not violate any known Federal, State, or local law or requirement imposed for the protection of the environment [40 CFR 1508.27(b)(10)].

Prepared by: Hugh Snook — 11/19/2007
Hugh Snook, Team Lead — Date

Reviewed by: Gary L Humbard — 11/19/2007
Gary Humbard, NEPA — Date

Approved by: Trish Wilson — 11/20/2007
Trish Wilson, Field Manager — Date
Marys Peak Resource Area

Glossary: Abbreviations, Acronyms, and Terms

Glossary Item	Definition
ACS	Aquatic Conservation Strategy. A set of objectives developed to restore and maintain the ecological health and aquatic habitat of watersheds
Alternative	Proposed project (plan, option, choice)
Anadromous fish	Species that migrate to oceans and return to freshwater to reproduce
BLM	Bureau of Land Management. Federal agency within the Department of Interior responsible for the management of 275 million acres
BMP	Best Management Practice(s). Design features and mitigation measures to minimize environmental effects
CEQ	Council of Environmental Quality, established by the National Environmental Policy Act of 1969
CEQ Regulations	Regulations that tell how to implement NEPA
Cumulative effects	Past, present, and reasonably foreseeable effects added together (regardless of who or what has caused, is causing, and might cause those effects)
CWD	Coarse Woody Debris refers to a tree (or portion of a tree) that has fallen or been cut and left in the woods. Usually refers to pieces at least 20 inches in diameter as described in Northwest Forest Plan
EA	Environmental Assessment
ESA	Endangered Species Act. Federal legislation that ensures federal actions would not jeopardize or elevate the status of living plants and animals
FEIS	Final Environmental Impact Statement
FLPMA	Federal Land Policy Management Act
FONSI	Finding of No Significant Impact
Invasive Plant	Any vascular plant that 1) are not part of (if exotic), or are a minor component of (if native), the original plant community or communities; 2) have the potential to become a dominant or co-dominant species on the site if their future establishment and growth is not actively controlled by management and growth is not actively controlled by management interventions; or 3) are classified as exotic or noxious plants under state of federal law. Species that become dominant for only one to several years (eg. short-term response to drought or wildfire) are not invasive plants
Landing	Any designated place where logs are laid after being yarded and are awaiting subsequent handling, loading and hauling
LSRA	Late Successional Reserve Assessment for Oregon's Northern Coast Range Adaptive Management Area, USDA Forest Service, USDI BLM 1998)

Glossary Item	Definition
LUA	Land Use Allocation. NWFP designated lands to be managed for specific objectives
LWD	Large Woody Debris. Woody material found within the bankfull width of the stream channel and is specifically of a size 23.6 inches diameter by 33 feet length (per ODFW - Key Pieces)
NEPA	National Environmental Policy Act (1969)
NMFS	National Marine Fisheries Service. Federal agency within NOAA which is responsible for the regulation of anadromous fisheries in the U. S.
NOAA	National Oceanic Atmospheric Administration. Agency within the Department of Commerce responsible for regulating migratory fisheries
Non-native plant	Any species that historically does not occur in a particular ecosystem or were introduced
Non-Point	No specific site
Noxious weed	A plant species designated by federal or state law as generally possessing one or more of the following characteristics: aggressive and difficult to manage; parasitic; a carrier or host of serious insects or diseases; or non-native, new, or not common to the United States
NWFP	Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl and Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Related Species within the Range of the Northern Spotted Owl (1994) (Northwest Forest Plan)
ODEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish and Wildlife. Oregon State Agency responsible for the management and protection of fish and wildlife
Oregon Smoke Management Plan	The State of Oregon's plan for implementing the National Clean Air Act in regards to burning of forest fuels
RMP	Salem District Record of Decision and Resource Management Plan (1995)
RMP/FEIS	Salem District Proposed Resource Management Plan / Final Environmental Impact Statement (1994)
ROD	Record of Decision. Document that approves decisions to the analyses presented in the FEIS
RR	Riparian Reserves (NWFP land use allocation). Lands on either side of streams or other water feature designated to maintain or restore aquatic habitat
Rural Interface	BLM lands within ½ mile of private lands zoned for 1 to 20 acre lots. Areas zoned for 40 acres and larger with homes adjacent to or near BLM lands

Glossary Item	Definition
Seral	One stage of a series of plant communities that succeed one another.
Snag	A dead standing tree lacking live needles or leaves
SPZ	Stream Protection Zone is a buffer along streams where no material would be removed and heavy machinery would not be allowed. The minimum distance is 50 feet
Turbidity	Multiple environmental sources which causes water to change conditions
USDI	United States Department of the Interior
USEPA	United States Environmental Protection Agency
VRM	Visual Resource Management, all lands are classified from 1 to 4 based on visual quality ratings

Maxfield Creek LWD Placement on Private Land/Meadow Restoration
ENVIRONMENTAL ASSESSMENT

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1.0 INTRODUCTION

1.1 Project Covered in this EA

One project will be analyzed in this EA. Maxfield Creek LWD Placement on Private Land/Meadow Enhancement is a proposal to restore meadow habitat by conifer management on approximately 25 acres. In addition, the proposal would place large woody debris within Maxfield Creek located on private land to improve watershed health.

1.2 Project Area Location

The project area is located approximately 6 air miles northwest of Corvallis, Oregon, in Benton County on forested land managed by the Marys Peak Resource Area, Salem District of the Bureau of Land Management (BLM), Rosboro Lumber Co. and Starker Forests Inc. The project area lies within the Luckiamute River Watershed and is within Township 10 South, Range 5 West, Section 19, and Township 10 South, Range 6 West, Sections 23 and 24 Willamette Meridian.

The proposed project is within the AMA (Adaptive Management Area) and RR (Riparian Reserve) LUAs (land use allocations) in the Marys Peak Resource Area of the Salem District and on private lands.

Table 1: Current project area watershed analysis, special designation and % of BLM managed land

5th Field Watershed	Watershed Analysis	Special Designations	% of Land Managed by BLM
Luckiamute River	*Rowell Cr./Mill Cr./Rickreall Cr./Luckiamute River* September/1998 *Luckiamute/Ash Creek/American Bottom Watershed Assessment* (*LAAWA*, June, 2004).	NA	4%

1.3 Conformance with Land Use Plans, Policies, and Programs

The Maxfield Creek LWD Placement on Private Land/Meadow Restoration project has been designed to conform to the following documents, which direct and provide the legal framework for management of BLM lands within the Salem District: 1/ RMP (*Salem District Record of Decision and Resource Management Plan*, May 1995); 2/ NWFP (the Northwest Forest Plan or *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl and Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl*, April 1994); 3/ SSSP ROD (*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*, March 2004).

The analysis in the Maxfield Creek LWD Placement on Private Land/Meadow Restoration EA is site-specific and supplements analyses found in the RMP/FEIS (*Salem District Proposed Resource Management Plan/Final Environmental Impact Statement*, September 1994). The RMP/FEIS includes the analysis from the NWFP/FSEIS (*Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl*, February 1994). The RMP/FEIS is amended by the *Final Supplemental Environmental Impact Statement For Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (S&M FSEIS) November 2000.

The Proposed Action is not located within the coastal zone as defined by the Oregon Coastal Management Program.

The following documents provided additional direction in the development of the Maxfield Creek LWD Placement on Private Land/Meadow Restoration project: 1/ NCAMA LSRA (*Late Successional Reserve Assessment for Oregon's Northern Coast Range Adaptive Management Area*, USDA Forest Service, USDI BLM 1998); 2/ *Mill Creek, Rickreall Creek, Rowell Creek and Luckiamute River Watershed Analysis* (*MEGA WA*, September, 1998); *Luckiamute/Ash Creek/American Bottom Watershed Assessment* (*LAAWA*, June, 2004).

These documents are available for review in the Salem District Office. Additional information about the proposed project is available in the Maxfield Creek LWD Placement on Private Land/Meadow Restoration Project EA Analysis File (NEPA file), also available at the Salem District Office.

Survey and Manage Review

The Bureau of Land Management (BLM) is aware of the August 1, 2005, U.S. District Court order in Northwest Ecosystem Alliance et al. v. Rey et al. which found portions of the *Final Supplemental Environmental Impact Statement to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines* (January, 2004) (EIS) inadequate. Subsequently in that case, on January 9, 2006, the Court ordered:

- set aside the 2004 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* , (March, 2004) (2004 ROD) and
- reinstate the 2001 *Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measure Standards and Guidelines*, January, 2001), including any amendments or modifications in effect as of March 21, 2004.

The BLM is also aware of the November 6, 2006, Ninth Circuit Court opinion in Klamath-Siskiyou Wildlands Center et al. v. Boody et al., No. 06-35214 (CV 03-3124, District of Oregon). The court held that the 2001 and 2003 ASRs (Annual Species Reviews) regarding the red tree vole are invalid under FLPMA (the Federal Land Policy and Management Act) and NEPA (National Environmental Policy Act) and concluded that the BLM's Cow Catcher and Cotton Snake timber sales violate federal law.

This court opinion is specifically directed toward the two sales challenged in this lawsuit. The BLM anticipates the case to be remanded to the District Court for an order granting relief in regard to those two sales. At this time, the ASR process itself has not been invalidated, nor have all the changes made

by the 2001-2003 ASR processes been vacated or withdrawn, nor have species been reinstated to the Survey and Manage program, except for the red tree vole. The Court has not yet specified what relief, such as an injunction, will be ordered in regard to the Ninth Circuit Court opinion. Injunctions for NEPA violations are common but not automatic.

We do not expect that the litigation over the Annual Species Review process in Klamath-Siskiyou Wildlands Center et al. v. Boody et al will affect Maxfield Creek LWD Placement on Private Land/Meadow Restoration Project because the development and design of the project exempt it from the Survey and Manage program. In Northwest Ecosystem Alliance et al. v. Rey et al the U.S. District Court modified its order on October 11, 2006, amending paragraph three of the January 9, 2006 injunction. This most recent order directs:

> "Defendants shall not authorize, allow, or permit to continue any logging or other ground-disturbing activities on projects to which the 2004 ROD applied unless such activities are in compliance with the 2001 ROD (as the 2001 ROD was amended or modified as of March 21, 2004), except that this order will not apply to:
>
> a. Thinning projects in stands younger than 80 years old;
> b. Replacing culverts on roads that are in use and part of the road system, and removing culverts if the road is temporary or to be decommissioned;
> c. Riparian and stream improvement projects where the riparian work is riparian planting, obtaining material for placing in-stream, and road or trail decommissioning; and where the stream improvement work is the placement large wood, channel and floodplain reconstruction, or removal of channel diversions; and
> d. The portions of project involving hazardous fuel treatments where prescribed fire is applied. Any portion of a hazardous fuel treatment project involving commercial logging will remain subject to the survey and management requirements except for thinning of stands younger than 80 years old under subparagraph a. of this paragraph."

The Bureau of Land Management has reexamined the objectives of Maxfield Creek LWD Placement on Private Land/Meadow Restoration Project as described in the Maxfield Creek LWD Placement on Private Land/Meadow Restoration Project EA. The project consists of stream improvement work through the obtainment and placement of large wood.

"On July 25, 2007, the Under Secretary of the Department of Interior signed a new Record of Decision To Remove the Survey and Manage Mitigation Measure Standards and Guidelines from Forest Service Land and Resource Management Plans Within the Range of the Northern Spotted Owl that removed the survey and manage requirements from all of the BLM resource management plans (RMPs) within the range of the northern spotted owl. "In any case, this project falls within at least one of the exceptions (exception c) listed in the modified October 11, 2006 injunction."

Compliance with the Aquatic Conservation Strategy

On March 30, 2007, the District Court, Western District of Washington, ruled adverse to the USFWS (US Fish and Wildlife Service), NOAA-Fisheries (National Oceanic and Atmospheric Administration) and USFS and BLM (Agencies) in *Pacific Coast Fed. of Fishermen's Assn. et al v. Natl. Marine Fisheries Service, et al and American Forest Resource Council,* Civ. No. 04-1299RSM (W.D. Wash)

(PCFFA IV). Based on violations of ESA (the Endangered Species Act) and NEPA (the National Environmental Policy Act), the Court set aside:

- the USFWS Biological Opinion (March 18, 2004),
- the NOAA-Fisheries Biological Opinion for the ACS Amendment (March 19, 2004),
- the ACS Amendment Final Supplemental Environmental Impact Statement (FSEIS) (October 2003), and
- the ACS Amendment adopted by the Record of Decision dated March 22, 2004.

Previously, in *Pacific Coast Fed. Of Fishermen's Assn. v. Natl. Marine Fisheries Service,* 265 F.3d 1028 (9th Cir. 2001)(PCFFA II), the United States Court of Appeals for the Ninth Circuit ruled that because the evaluation of a project's consistency with the long-term, watershed level ACS objectives could overlook short-term, site-scale effects that could have serious consequences to a listed species, these short-term, site-scale effects must be considered. The following discussion shows how the Maxfield Creek LWD Placement on Private Land/Meadow Restoration Project meets the Aquatic Conservation Strategy in the context of PCFFA IV and PCFFA II.

1.4 Purpose of and Need for Action

The BLM proposes forest management activities on approximately 25 acres and within 2 miles of anadromous fish bearing streams. These activities would include timber removal and in-stream log placement. The land use allocations for these activities are Adaptive Management Area and Riparian Reserves and on private land.

The following describe the purpose for the action:

- **To provide short term habitat until natural processes can supply the materials needed to recover good stream habitat.**
  - ✓ Log structures would help to rehabilitate the stream and enhance natural populations of anadromous and resident fish by improving spawning and rearing habitat (RMP p.27).
  - ✓ Approximately 96 percent of streams surveyed for LWD key pieces were categorized as undesirable for in-stream aquatic habitat within the Upper Luckiamute River watershed. For the streams surveyed, in-stream structure is lacking.

- **To restore in dry grand fir/meadow habitat types the structure and species composition of oak-conifer woodland, oak savanna and meadow habitat to conditions believed to have existed during a regime of frequent, low-intensity fire so that:**
  - ✓ Silvicultural prescriptions can be used to manage special habitats such as oak woodlands, prairies, meadows, marshes and grassy balds to prevent encroachment of dense underbrush, shade-tolerant conifers and other species not naturally found in these plant communities under more natural fire conditions (NWFP Appendix B1).
  - ✓ Special habitats can be identified and relevant values determined for protection or management and that management practices can be used to obtain desired vegetation conditions in special habitats (RMP p.26) and special habitats can be restored within riparian reserves where they formerly existed.

- ✓ Diversity can be maintained by managing special habitats for non-late-successional species and natural processes can be maintained (e.g. fire) (*Late Successional Reserve Assessment for Oregon's Northern Coast Range Adaptive Management Area*, USDA, USDI, 1998 p.49). (Note: the project area is not in a Late-successional Reserve, but special habitats direction established in the LSRA applies to the broader landscape).
- ✓ The abundance and distribution of Oregon white oak is increased and competition removed to allow growth of open-crowned oak trees and open-crowned conifer appropriate to a woodland or savanna structure.
- ✓ The diversity, abundance and distribution of native plant and animal species are increased, and habitat improvements allow potential re-introduction of endangered native species.

Oregon white oak, woodland and meadow habitat have decreased in the foothills of the Oregon Coast Range. Conifer succession (due to fire exclusion and other factors) has greatly reduced these habitat types from the past. The Maxfield Creek area contains viable remnants of these habitats that could be maintained and/or restored to meet habitat management objectives. To restore habitat on areas formerly characterized by very low conifer density, removal of conifer trees is needed. There is also a need to manage fuels to meet habitat objectives.

Maxfield Creek supports populations of winter steelhead trout and resident cutthroat trout. The stream channel currently is deficient in large woody debris needed for structural habitat diversity. Logging operations (e.g. yarding/skid trails, conifer removal from RR), road construction, and log jam removal/stream cleaning have combined to produce stream habitat that lacks large woody debris and quality pools. There is a need to:

- Cut and remove by helicopter approximately 50 trees adjacent to existing meadows.
- Place instream LWD (50 trees described above) within 2 miles of anadromous fish bearing stream located on private land.
- Treat resulting fuels.

The project would be implemented within a 3 year time period that could commence in March 2008.

1.5 Decision to be made

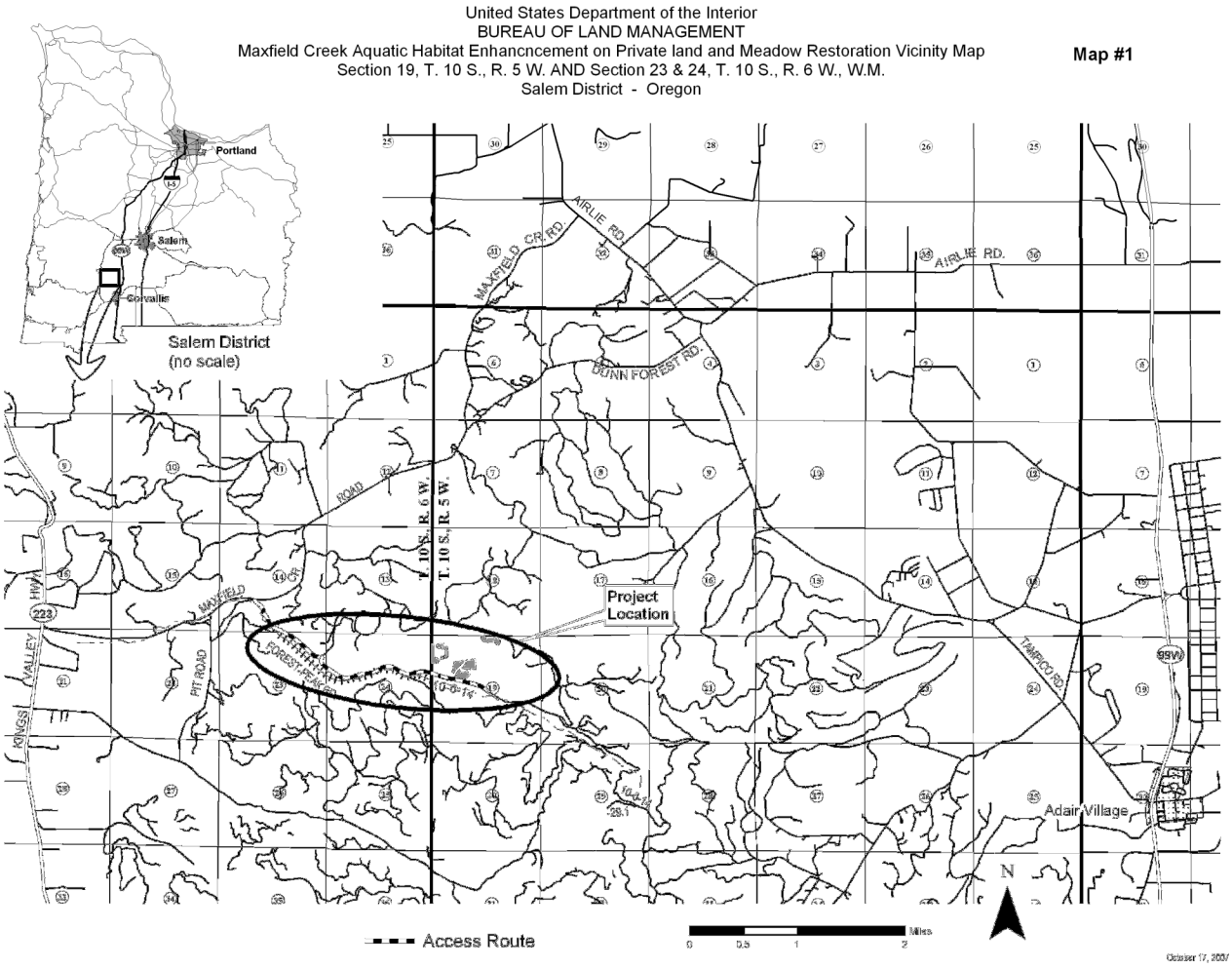
1.5.1 Decision Criteria/Project Objectives

The Marys Peak Resource Area Field Manager will use the following criteria/objectives in selecting the alternative to be implemented. The field manager would select the alternative that would best meet these criteria. The selected action would:

- Meet the purpose and need of the project (EA section 1.4)
- Comply with the *Salem District Record of Decision and Resource Management Plan*, May 1995 (RMP) and related documents which direct and provide the legal framework for management of BLM lands within the Salem District (EA section 1.3)
- Would not have significant impact on the affected elements of the environment beyond those already anticipated and addressed in the RMP EIS.
- Reduce fuel hazard and risk.
- Not contribute to the expansion of invasive/nonnative weed populations.
- Provide in-stream structures to meet aquatic habitat restoration needs.

1.6 Results of Scoping

A scoping letter, dated June 7, 2007, was sent to 16 potentially affected and/or interested individuals, groups, and agencies. No responses were received during the scoping period.



2.0 ALTERNATIVE DEVELOPMENT

Pursuant to Section 102 (2) (E) of the National Environmental Policy Act of 1969, as amended (NEPA), Federal agencies shall "Study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." No unresolved conflicts were identified. Therefore, this EA will analyze the effects of the Alternative 1 (No Action) and Alternative 2 (Proposed Action).

2.1 Alternative 1 (No Action)

The BLM would not implement the proposed action at this time. Under this alternative, the natural processes would proceed without intervention of any management action. This alternative serves to set the environmental baseline for comparing effects to the action alternative.

2.2 Alternative 2 (Proposed Action)

Approximately 50 conifer trees scattered over 25 acres affecting meadow habitat or competing with oak trees that are greater than 24" DBHOB would be felled and utilized for in-stream aquatic habitat enhancement work. The project would include the placement of approximately 50 pieces of large woody debris (LWD) in Maxfield Creek using selected trees from upland treatment areas and transported to the stream via helicopter (Map #2).

2.2.1 Connected Actions

Fuel Treatments: Fuel treatment strategies would be implemented on portions (within upland areas) of the project areas. Strategies would include a reduction of the amount and continuity of surface fuels in order to reduce both the intensity and severity of potential wildfires. Fuel reduction may be accomplished for heavier concentrations by hand piling, covering and burning. In order to mitigate fire risk, the areas would be monitored for the need to close or restrict access during periods of high fire danger.

2.2.2 Project Design Features

The following is a summary of the design features that reduce the risk to the affected elements of the environment described in EA section 3.2.

General

All logging activities would utilize the BMPs (Best Management Practices) required by the Federal Clean Water Act (as amended by the Water Quality Act of 1987) (RMP Appendix C pp. C-1 through C-10).

Table 2: Season of Allowable Operation/Operating Conditions

Season of Operation or Operating Conditions	Applies to Operation	Objective
July 1 to September 30	In-stream work (LWD placement)	Minimize soil erosion/stream sedimentation
August 1 to February 28 (Conditional to active nesting within ¼ mile radius of nest site)	All operations capable of disturbing nest site	Minimize disturbance

Project Design Features by RMP Objectives

To minimize soil erosion as a source of sedimentation to streams and to minimize soil productivity loss from soil compaction, loss of slope stability or loss of soil duff layer:

- In areas where mineral soil is exposed and considered to be at risk for the establishment of non-native species would be sown with Oregon Certified (blue tagged) red fescue (*Festuca rubra*), and/or sown with a native seed mix and applied at a rate equal to 40 pounds per acre or sown/planted with other native species as approved by the resource area botanist.
- Helicopter logging could occur year-round.
- One existing helicopter service landing would be used during log placement (see Map #2).

To protect and enhance fisheries habitat components (EFH and ESA designated Critical Habitat):

- Logs would be placed for in-stream habitat with crowns intact to the extent practicable, following guidelines established by Oregon Department of Fish and Wildlife.

To meet the objectives of the Aquatic Conservation Strategy Component #1 (Riparian Reserves):

- Stream protection zones [(SPZs) where no cutting or yarding is permitted] would be established for all streams and identified wet areas with a distance of at least 50 feet or to slope break, which ever is greater. They would average approximately 60 to 75 feet (range is 50 to 100 feet).
- To protect water quality, trees would be felled away from all SPZs. Where a cut tree does fall within a SPZ, the portion of the tree within the SPZ would remain in place. No yarding would be permitted in or through any SPZ.

To protect and enhance stand diversity and wildlife habitat components:

- Tree selection would be based on the following marking guidelines: Trees would be selected that are Douglas-fir or grand fir 24" DBHOB (diameter breast height outside bark) or greater, do not have active wildlife use, are not within a SPZ or Maxfield Creek Timber Sale unit, and are not the largest trees on site. Trees would be selected where their removal would increase growing space for Oregon white oak, remove shade to meadow edge or interior, or reduce stocking to approximate a woodland density where it is currently above about 40% canopy, but less than closed canopy (70% or greater).
- The nest of a red-tailed hawk (see Map #2) would be protected during the active nesting season by suspending all operations capable of disturbing nesting red-tail hawks to reduce disturbance

within a ¼ mile radius around the nest. The beginning and ending of the active nesting period would be determined by a wildlife biologist, but generally occurs from March 1 to July 31. If nesting is not found by May 21, or once juveniles have fledged, operations could proceed.

- Implement in-stream activities during Oregon Department of Fish and Wildlife (2000) In-water Work Timing (Table 2).
- All existing snags and CWD (coarse woody debris) would be reserved, except where they pose a safety risk or affect access and operability. Any snags felled or moved for these purposes would remain on site within the project area.
- Trees would be retained that have evidence of wildlife use or that were established well before recent conifer encroachment.

To reduce fire hazard risk and protect air quality:

- Where slash accumulations are heavy, slash would be piled, covered and burned.
- During the late summer, before the onset of fall rains, all hand piles to be burned, would be covered at least 80% with 4 mil polyethylene plastic.
- All burning would occur under favorable smoke dispersal conditions in the fall, in compliance with the State Smoke Management Plan (RMP pp. 22, 65).

To protect Threatened and Endangered and Bureau Special Status Plants and Animals:

- Site management of any Federal or Oregon State Threatened and Endangered (T&E) or Bureau Special Status (SS) botanical and fungal species found as a result of additional inventories would be accomplished in accordance with, BLM Manual 6840- *Special Status Species Management* and the *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 (March 2004).*
- The Resource Area Biologist and/or Botanist would be notified if any Threatened and Endangered and Bureau Special Status Plants and Animal species are found occupying stands proposed for treatment during project activities. All of the known sites would be withdrawn from any timber harvesting activity.

To protect Cultural Resources:

The project area occurs in the Oregon Coast Range. Survey techniques are based on those described in Appendix D of the *Protocol for Managing Cultural Resource on Lands Administered by the Bureau of Land Management in Oregon*. Post-project survey would be conducted according to standards based on slope defined in the Protocol appendix. Ground disturbing work would be suspended if cultural material is discovered during project work until an archaeologist can assess the significance of the discovery.

2.2.3 Comparison of Alternatives With Regard to Purpose and Need

Table 3: Comparison of Alternatives with Regard to Purpose and Need

Purpose and Need (EA section 1.4)	Alternative 1 (No Action)	Alternative 2 (Proposed Action)
To restore in dry grand fir/meadow habitat types the structure and species composition of oak-conifer woodland, oak savanna and meadow habitat to conditions believed to have existed during a regime of frequent, low-intensity fire. There is a need to cut and remove by helicopter approximately 50 trees adjacent to existing meadows and treat resulting fuels.	Some existing oak trees would eventually be overtopped by conifers and die. The extent of meadow habitat would be constrained by large conifer. Woodland habitat would not be restored from closed conifer conditions.	Releases existing oak from conifer shade. Conifer removal would help restore woodland and meadow structure and establish native species.
To provide short term habitat until natural processes can supply the materials needed to recover good stream habitat. There is a need to place in-stream LWD (50 trees described above) within 2 miles of anadromous fish bearing stream located on private land.	Recruitment of LWD to the stream channel would be delayed, potentially for decades, until natural recruitment occurs from mature and decadent stands.	The helicopter placement of large wood debris is expected to increase habitat complexity and provide key elements necessary to maintain that habitat in the future. LWD placement would be beneficial to the habitat and fish populations would respond to the improved habitat.

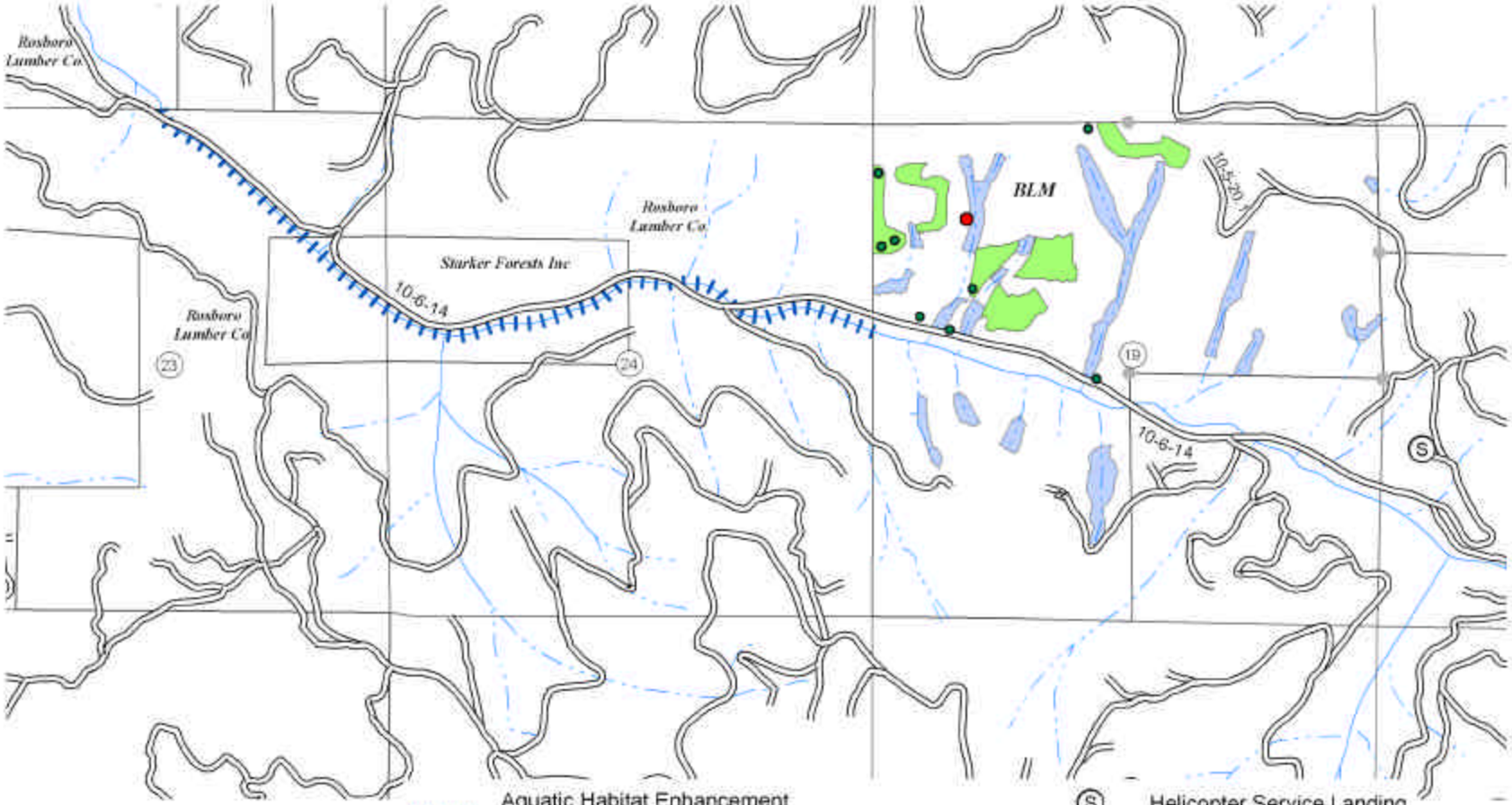
October 17, 2007

United States Department of the Interior
BUREAU OF LAND MANAGEMENT

Map #2

MAXFIELD CREEK AQUATIC HABITAT ENHANCEMENT ON PRIVATE LAND AND MEADOW RESTORATION EA MAP

T. 10 S., R.6 W., Sections 23 & 24 and T. 10 S., R. 5. W., Section 19, W. M. - SALEM DISTRICT - OREGON



Aquatic Habitat Enhancement (Large Woody Debris Placement)

Meadow Restoration - 25 acres (Tree Removal for Large Woody Debris Placement)

False Brome (known site)

Red-Tailed Hawk Nest

Stream_Protection_Zone

Helicopter Service Landing

Existing Road

Impassable Road

Fishbearing Stream

Non-Fishbearing Stream

Found Corner

N

1,000 500 0 1,000 feet

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, orcompleteness of these data for individual use or aggregate use with other data. Original data was compiled from multiple source data and may not meet U.S.National Mapping Accuracy Standard of the Office of Management and Budget.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS - COMMON TO ALL PROJECT LOCATIONS

3.1 Identification of Affected Elements of the Environment

The interdisciplinary team reviewed the elements of the human environment, required by law, regulation, Executive Order and policy, to determine if they would be affected by the Proposed Action. Table 5 ("Critical Elements of the Human Environment") and Table 6 (Other Elements of the Environment) summarize the results of that review. Affected elements are **bold**. All entries apply to the Proposed Action, unless otherwise noted.

Table 4: Review of "Critical Elements of the Human Environment" (BLM H-1790-1, Appendix 5) for All Project Locations

"Critical Elements Of The Human Environment"	Status: (i.e., Not Present , Not Affected, or Affected)	Does this project contribute to cumulative effects? Yes/No	Remarks
Air Quality (Clean Air Act)	**Affected**	**No**	**Addressed in text (EA section 3.2.2)**
Areas of Critical Environmental Concern	Not Present	No	
Cultural Resources	Not Affected	No	Cultural resource sites in the Oregon Coast Range, both historic and prehistoric, occur rarely. The probability of site occurrence is low because the majority of BLM managed Oregon Coast Range land is located on steep upland mountainous terrain that lack concentrated resources humans would use. Post-disturbance inventory would be completed on slopes less than 10%.
Energy (Executive Order 13212)	Not Affected	No	There are no known energy resources located in the project areas. The Proposed Action would have no effect on energy development, production, supply and/or distribution.
Environmental Justice (Executive Order 12898)	Not Affected	No	The Proposed Action is not anticipated to have disproportionately high and/or adverse human health or environmental effects on minority populations and/or low-income populations.
Prime or Unique Farm Lands	Not Present	No	
Flood Plains (Executive Order 11988)	Not Affected	No	The Proposed Action does not involve occupancy or modification of floodplains, and would not increase the risk of flood loss.
Hazardous or Solid Wastes	Not Present	No	

"Critical Elements Of The Human Environment"		Status: (i.e., Not Present , Not Affected, or Affected)	Does this project contribute to cumulative effects? Yes/No	Remarks
Invasive, Nonnative Species (plants) (Executive Order 13112)		**Affected**	**No**	**Addressed in text (EA section 3.2.1).**
Native American Religious Concerns		Not Affected	No	No Native American religious concerns were identified during the public scoping period.
Threatened or Endangered (T/E) Species or Habitat	**Fish**	**Affected**	**No**	**Addressed in text (EA section 3.2.6).**
	Plant	**Affected**	**No**	**Addressed in text (EA section 3.2.3)**
	Wildlife (including designated Critical Habitat)	**Affected**	**No**	**Addressed in text (EA section 3.2.3).**
Water Quality (Surface and Ground)		**Affected**	**No**	**Addressed in text (EA section 3.2.5).**
Wetlands (Executive Order 11990)		Not Affected	No	Wetlands (i.e., near stream areas with actual riparian vegetation or characteristics) would be designated as SPZs and buffered out of the treatment areas.
Wild and Scenic Rivers		Not Present	No	
Wilderness		Not Present	No	

Table 5: Review of Other Elements of the Environment for All Project Locations

Other Elements of the Environment	Status: (i.e., Not Present , Not Affected, or Affected)	Does this project contribute to cumulative effects? Yes/No	Remarks
Fire Hazard/Risk	**Affected**	**No**	**Addressed in text (EA section 3.2.2).**
Other Fish Species with Bureau Status and EFH	**Affected**	**No**	**Addressed in text (EA section 3.2.6).**
Land Uses (right-of-ways, permits, etc)	Not Present	No	
Late Successional and Old Growth Habitat	**Affected**	**No**	**Addressed in text (EA section 3.2.1).**
Mineral Resources	Not Present	No	
Recreation	Not Affected	No	Project area is closed to public access except during general hunting season.

Other Elements of the Environment		Status: (i.e., Not Present , Not Affected, or Affected)	Does this project contribute to cumulative effects? Yes/No	Remarks
Rural Interface Areas		Not Affected	No	No identified rural interface areas are in close proximity to project area.
Soils		**Affected**	**No**	**Addressed in text (EA section 3.2.4).**
Special Areas outside ACECs (Within or Adjacent) (RMP pp. 33-35)		Not Present	No	
Other Special Status Species / Habitat	Plants	Not Affected	No	There are no known sites of any bureau special status species nor were there any found during subsequent surveys.
	Wildlife	**Affected**	**No**	**Addressed in text at (EA section 3.2.3) & (Biological Evaluation pp. 1-13).**
Visual Resources		Not Affected	No	Project is located within VRM Class IV land. Changes to the landscape character are expected to be low and comply with VRM guidelines.
Water Resources – Other(303d listed streams, DEQ 319 assessment, Downstream Beneficial Uses; water quantity, Key watershed, Municipal and Domestic)		**Affected**	**No**	**Addressed in text (EA section 3.2.5).**
Wildlife Structural or Habitat Components - Other (Snags/CWD/ Special Habitats, road densities)		**Affected**	**No**	**Addressed in text (EA section 3.2.3).**

3.2 Affected Environment and Environmental Effects

Those elements of the human environment that were determined to be affected are *vegetation, fuels/air quality, wildlife, soils, water, and fisheries/aquatic habitat*. This section describes the current condition and trend of those affected elements, and the environmental effects of the alternatives on those elements.

3.2.1 Vegetation

(IDT Reports incorporated by reference: Vegetation and Ecology Abstract pp. 1-20, Maxfield Creek vegetation and Ecology Report pp. 1-50, Maxfield Creek Botanical Abstract pp.1-7, and Maxfield Creek Botanical Report pp.1-16)

Affected Environment

The project area, like much of the foothills bordering the Willamette Valley, has transformed from open woodland to closed forest. A widespread conversion to conifer forest occurred shortly after

settlement and the control of periodic fire that had previously maintained early-seral habitats of meadow, oak savanna and woodland.

The project area occurs within the interface of three distinct habitat types; 1) meadow, 2) Oregon white oak and 3) coniferous forest. The meadow type is dominated by grasses and forbs and is mostly void of woody vegetation. The perimeter of the meadows is surrounded by a fringe of Oregon white oaks and often with a shrub layer of poison oak. Immediately adjacent and often mixed within the Oregon oak habitat type is the coniferous forest type. The coniferous forest is of two age classes, one of 45-55 years old, and one approximately 120 years old and both consist mainly of Douglas-fir and grand fir. The coniferous forest habitat type is the dominant type within the Maxfield Creek drainage with the meadow and Oregon oak types restricted to mainly upper slopes and ridges on south or southwest facing slopes. Over the past few decades conifers growing adjacent to the Oregon white oaks have become taller than the oaks. The conifers are overtopping the oaks, reducing available direct sunlight and the oaks are in decline and/or dying.

Understory vegetation consists of oceanspray, snowberry, California hazel, dwarf Oregon-grape, poison oak, sword fern, star-flower, pathfinder, vanilla leaf, wild strawberry, and Columbia brome. Remnant meadow and groves of Oregon white oak are found on south slopes in the area and total about 52 acres. Conifer saplings are present along the meadow edges as conifer encroachment continues. Oregon white oaks occupy fringes around meadows, and form dense groves adjacent to the largest meadows. The meadows and oak groves contain a wide variety of native and introduced species. The establishment of conifer continues to diminish meadow habitat.

The LWD placement sites are on private land and in general are moist hardwood (red alder and big-leaf maple) dominated riparian plant associations.

Other than the Oregon white oak and meadow plant associations, there are no “unique” habitat areas (caves, cliffs, wet meadows, waterfalls, ponds, lakes) within the project area.

Threatened/Endangered and Special Status Botanical and Fungal Species

Inventory of the project area for Federal and Oregon State threatened and endangered and Bureau special status vascular plant, lichen, bryophyte and fungal species were accomplished through intuitive controlled surveys, in accordance with survey protocols for the specific groups of species.

There are no “known sites” of any T&E or Bureau special status vascular plant, lichen, bryophyte or fungi species within the BLM managed land in the project area, nor were any found during subsequent surveys.

Noxious Weeds

The following State-listed noxious weeds are known from within or adjacent to the project area: Tansy ragwort (*Senecio jacobaea*), bull and Canadian thistles (*Cirsium vulgare* and *C. arvense*), St. John’s wort (*Hypericum perforatum*), and Scot’s broom (*Cytisus scoparius*) are quite widespread in the project area. Himalayan blackberry and evergreen blackberry (*Rubus discolor* and R. *laciniatus*, respectively), false brome (*Brachypodium sylvaticum*), and Meadow knapweed (*Centaurea pretense*) are limited to a few infestations.

Environmental Effects

3.2.1.1 Alternative 1 (No Action)

The reduction of meadow, oak and woodland habitat resulting from 50 relatively large trees, scattered over 25 acres of these habitats, would remain unchanged. The current rate of conifer encroachment into meadows would continue. Future reduction of these habitats would result from the slight increase in crown radius of the existing trees, and the recruitment of additional conifer trees resulting from their reproduction and favorable microclimate conditions. Vegetation conditions would develop even further from historic conditions, making future restoration efforts more difficult.

Oregon white oak abundance and distribution would continue to decrease, as competition from a portion of the 50 large trees that overtop oak trees would remain. Overtopped oak trees would decrease in vigor, crown width, and wildlife habitat value.

3.2.1.2 Alternative 2 (Proposed Action)

Removal of 50 trees each with an estimated crown radius of 20 feet represents approximately 1.4 acres of shaded area, about 6% of the 25 acre LWD source area. Removal of these trees nearby viable Oregon white oak trees would increase vigor, growth and size of the oak trees. Removal of these trees in conifer stands would create an open woodland structure and create more growing space for remaining trees. The resulting structure would consist of an open tree canopy, containing a greater component of Oregon white oak that allows enough sunlight to support abundant understory vegetation and allow additional oak establishment.

Conifer removal would help return meadow habitat to the approximate extent that existed 40-60 years ago. Because many of the 50 trees are immediately adjacent to or within meadow habitat, their removal directly increases the extent of meadow habitat. After conifer removal, additional growing space would be available in meadow and woodland for grasses, forbs, and shrubs and formerly shaded areas would fill with ground vegetation within 1-2 years.

Large woody debris in-stream placement would minimally disturb existing vegetation. As the debris is incorporated into the channel, affects to water flow, sediment deposition and channel complexity would increase, potentially creating more habitat for riparian-associated vegetation.

<u>Threatened/Endangered and Special Status Botanical and Fungal Species:</u>
This project would not directly affect any T&E or Bureau special status vascular plant, lichen, bryophyte or fungi species since there are no known sites within the project area or adjacent to the project.

<u>Noxious Weeds:</u>
Any ground disturbing activity may lead to an increase in the noxious weeds known from within the project area. However, operations such as this proposal generally disrupt very small areas of organic material and expose mineral soil. Non-native species may become established in any

exposed mineral soil areas. These non-native species often persist for several years but soon decline as native vegetation increases within the project areas.

Any adverse effects from non-native plant infestations within or near the project area are not anticipated and the risk rating for the long-term establishment of noxious weed species and consequences of adverse effects on this project area is low because; 1) the implementation of the Marys Peak integrated non-native plant management plan allows for early detection and rapid response of invasive non-native plant species, 2) the known noxious weeds in the project area are regionally abundant and control methods are generally limited to bio-control, and 3) the implementation of this project would minimize ground disturbance by utilizing a helicopter to transport the conifer logs. In addition, project areas would be monitored for non-native species. Monitoring maintained roads provides for early detection and allows for a rapid response to remove any non-native species of concern.

3.2.1.3 Cumulative Effects

There would be no cumulative effects to the vegetation, as the effects from the project would be local, and there would be no other uses affecting this resource.

3.2.2 Fuels/Air Quality

(IDT Reports incorporated by reference: Maxfield Creek Vegetation and Ecology Report)

Affected Environment

The total dead fuel load estimate for the meadows ranges from approximately 150 lbs. per acre on the thin soil areas with light grass, up to approximately 1,200 lbs. per acre where the soils are deeper resulting in the grass being taller and more densely stocked. Estimated total dead fuel loading in the timber stands varies from 7-14 tons per acre.

Environmental Effects

3.2.2.1 Alternative 1 (No Action)

With a No Action Alternative, there would be no change from the current conditions for the fuels resource. Conditions would remain as they are at present. No changes in aerial extent of disturbed fuel loadings would occur.

3.2.2.2 Alternative 2 (Proposed Action)

<u>Fuels</u>

The fire hazard created by the log removal slash would be mitigated within a few months of the log removal by piling, covering and burning of the slash.

<u>Air Quality</u>

Prescribed burning of piled slash would be done in the fall under good atmospheric mixing conditions when the threat of impacting air quality in designated areas would be very low. The estimated additional fuel loading resulting from the piled slash is expected to be less than 5 tons since the logs would be removed with limbs attached. Residual smoke should be of short duration and occur during a period of the year when there is less outdoor activity. Smoke produced from burning should have little impact on people.

3.2.2.3 Cumulative Effects (Proposed Action)

Fuels

There would be few cumulative effects, as the effects from the project would be local, and there would be no other uses affecting this resource. Although there would be a slight increase in fuel loading and resultant fire hazard in the short term, the increase would be mitigated within a few months when the slash is burned.

Air Quality

There would be few cumulative effects, as the effects from the project would be local, and there would be no other uses affecting this resource. Burning of slash would be guided by the Oregon State Smoke Management Plan which serves to coordinate all forest burning activities on a regional scale to protect local and regional air sheds. Based on past experience with pile burning in this area, there are no expected cumulative effects on air quality from the planned fuels treatments under this proposal.

3.2.3 Wildlife

(IDT Reports incorporated by reference: Biological Evaluation Maxfield Creek pp. 1-13)

Affected Environment

Wildlife Structural or Habitat Components: Under pre-settlement conditions, the fire regime that favored open forest, meadow and Oregon white oak stands on dry sites would have supported little habitat for species associated with late successional conifer forest, such as spotted owls and marbled murrelet. Any habitat that occurred would likely have been quite isolated from larger habitat blocks further west in the Oregon Coast Range.

Conversely, species associated with Willamette Valley ecosystems (meadows, oak woodland, and a more open mixed conifer-hardwood forest) may have been more common in the area during pre-settlement conditions.

Current habitat conditions at the Maxfield Creek parcels, in addition to the meadow and oak habitat patches (52 acres), include approximately 250 acres of late-seral (80-199 years) conifer forest habitat, 178 acres of mid-seral conifer forest (40-79 years), 204 acres of early-seral (0-39 years) conifer forest, and 84 acres of hardwood dominated forest

Special Habitats/Special Habitat components (snags, down logs, remnant old-growth trees): Current CWD levels are low, averaging approximately 500 cubic feet per acre of conifer snags and downed wood. Oak woodlands surveyed on the Eugene District BLM were found to have low levels of snags (Chiller, et al, 2000), and under the frequent fire regime that historically occurred in oak woodlands (Agee, 1993), CWD would have been uncommon.

Threatened, Endangered, and Special Status Species or Habitats

Fender's Blue Butterfly & Kincaid's Lupine (Lupinus sulphureus kincaidii)

Fender's Blue butterfly is a federally listed Endangered species and Kincaid's lupine is federally listed as Threatened. Extensive plant surveys have been completed within the meadow and oak habitats at Maxfield Creek and no Kincaid's lupine has been found. Since the host plant for the Fender's blue butterfly larvae is absent from the site it is assumed that the adult butterfly is also currently not using the meadow patches at Maxfield Creek. However, the lupine and butterfly are present on the nearby McDonald-Dunn Forest in similar habitat and at the same elevation as the Maxfield meadows. The lupine and butterfly may have been present in the past when fire disturbance was more common.

Northern Spotted Owl
The project area is not within owl critical habitat and the closest known owl site is 4.5 miles to the south on the McDonald-Dunn South Zone Forest in the Oak Creek subwatershed. The closest known nesting habitat is 1.5 miles to the east and occurs as four small patches of old-growth on the McDonald-Dunn North Zone Forest; these stands are surrounded by intensively managed forest and have been surveyed for owls on an annual basis with no detections.

Marbled Murrelet
The project area is not within murrelet critical habitat and the treatment stand is over 35 miles from the Oregon coast. The closest known murrelet site is 12 miles to the northwest. The closest known nesting habitat is 1.5 miles to the east and occurs as four small patches of old-growth on the McDonald-Dunn North Zone Forest; Oregon State University is not required, in an agreement with the USFWS, to survey for marbled murrelets so its use status is unknown. The high level of edge habitat associated with the shape and size of the stands in the project area greatly decrease their quality as murrelet nesting habitat. The treatment stand was surveyed to protocol during the 2005 and 2006 breeding seasons with no detections.

<u>Other Special Status Species (SSS)</u>:
The meadow and oak patches within the project area may provide nesting and/or foraging habitat for the following Special Status Species: Siskiyou Short-horned Grasshopper, Taylor's Checkerspot Butterfly, Common Nighthawk, Yellow-breasted Chat, Lewis's Woodpecker, Oregon Vesper Sparrow and Purple Martin. Refer to Biological Evaluation for a list of all the SSS in the Marys Peak Resource Area and impact analysis to SSS.

Red-tailed Hawk
In the spring of 2005, an active red-tail hawk nest was discovered within the proposed project area (see Map #2).

Red Tree Vole
Suitable habitat for the red tree vole occurs in the north half of section 19. The area was surveyed in 2004 and no active red tree vole nests were found.

Environmental Effects

3.2.3.1 Alternative 1 (No Action)

Species which depend on conifer forest would probably continue to increase in richness and abundance while species which depend on meadow and oak habitats would probably decrease. Over geologic time most forest meadows are converted to forest as the soils and other site conditions become more favorable to tree establishment and growth. If no action is taken to restore and maintain the meadow and oak habitats by mimicking periodic natural disturbance caused by fire, Douglas-fir would continue to overtop these non-forest patches and eventually they would be converted to closed-canopy conifer forest matrix. There is no shortage of closed-canopy conifer habitat in western Oregon. The affected watershed would lose historic meadow and/or oak woodland/savanna habitat decreasing both its floral and faunal biodiversity. Several Special Status Species may be negatively impacted as these patches become smaller and smaller in size and further separated in space.

3.2.3.2 Alternative 2 (Proposed Action)

Effects to Wildlife Habitats

The removal of approximately 50 trees scattered along the edge of meadows would serve to further restore the extent of meadow, but the effect would be small, as removed trees would be scattered over an area of about 25 acres. Selected trees to be felled would come from the edges of older forest patches that could provide habitat for federally listed species. Removal of large conifer trees adjacent to meadows would be considered a "may affect, likely to adversely affect" to northern spotted owls and marbled murrelets. Trees would be widely spaced along meadows and clearcut edges and none of the selected trees would contain suitable nest structure for listed species.
In general, species which require meadow, oak and woodland habitat would benefit from the restoration and maintenance of the existing patches at the Maxfield Creek site since the treatments would mimic natural disturbance processes.

Placing 50 pieces of large woody debris into Maxfield Creek would create a diversity of pool habitat and structure which is required by many species of aquatic and semi-aquatic wildlife.

Effects to Special Status, Federal Threatened or Endangered Species or Habitat

Fender's Blue Butterfly & Kincaid's Lupine (Lupinus sulphureus kincaidii)
If a seed bank is still present in the meadow soils the proposed treatments may trigger a re-establishment of the lupine. If this does not occur, it is proposed to introduce (or re-introduce) Kincaid's lupine to the meadow sites in hopes that it would become established, stabilized, and productive enough to attract and maintain a population of Fender's blue butterfly.

Northern Spotted Owl
The BLM parcels to be treated are too fragmented, too small and too isolated from other federal natural resource lands to provide enough suitable habitat for one viable home range for the northern

spotted owl. Since the BLM parcels are surrounded by private and State lands (which are intensively managed for timber production) the total amount of suitable habitat within the home range would never rise above 600 acres. The owl is not expected to be present in the project area since the site does not have a long history of functioning as late-seral forest habitat (the 110 year old stand is primary growth forest with little nesting structure), the stands are too small and have too much edge, and the area around the BLM parcels has a long history of extensive timber harvesting use. The area provides low quality owl habitat so the impacts are expected to be insignificant.

Marbled Murrelet
The environmental effects of the proposed action on the marbled murrelet and its designated suitable habitat are expected to be insignificant. The murrelet is not expected to be present in the project area because of the poor quality of the designated suitable habitat present. The quality of the habitat is considered poor for the following reasons: the stands are more than 35 miles from the ocean; these relatively young (110 yrs) late-seral stands are primary growth forest so there are very few potential nest platforms; the area around the BLM parcels has a long history of extensive timber harvesting use; the stands are too small and have too much edge; and the suitable habitat is very isolated from existing occupied murrelet sites and other suitable habitat.

Other Special Status Species (SSS):

The following SSS and species of concern are expected to respond favorably to the restoration and maintenance treatments: Siskiyou Short-horned Grasshopper, Taylor's Checkerspot Butterfly, Common Nighthawk, Yellow-breasted Chat, Lewis's Woodpecker, Oregon Vesper Sparrow, Purple Martin, Western Bluebird, Acorn Woodpecker and White-breasted Nuthatch.

Red-tailed Hawk: No effect to the existing hawk nest, and to future nesting habitat is expected from the proposed action. A proposed design feature would prevent breeding disturbance if the nest is active. The existing nest tree would be left, and nearly all similar trees within the project area would be retained, therefore habitat quality would be unaffected.

Red Tree Vole
The project area was surveyed in 2004 and no active red tree vole nests were found. Since no active red tree vole nests were found, the proposed action is expected to have no effect on red tree voles.

3.2.3.3 Cumulative Effects

The cumulative effects of this meadow and oak restoration and maintenance project is expected to have a positive effect on the health of the watershed by maintaining or increasing plant and animal diversity, especially since several Special Status Species may benefit from an increase in oak woodland and meadow habitat.

3.2.4 Soils

(IDT Reports incorporated by reference: Maxfield Creek Environmental Assessment Soils/Hydro Report pp. 1-25)

Affected Environment

A recent study conducted in the Oregon Cascades measured soil properties along transects from high mountain meadows through transition zones into mature forest (Griffiths 2005). The study found that meadow soil rapidly assumes forest soil characteristics as forests invade meadows. These changes were presumed to be driven by qualitative differences in grass and tree litter resulting in differences in the biogeochemical properties of microbial decomposers. The changes to the meadow soils as the trees encroach, appears to alter these soils so that they are more likely to support trees than grass (thus supporting continued encroachment).

Environmental Effects

3.2.4.1 Alternative 1 (No Action)

Soil conditions would change from meadow type soils to forest soils over a greater area. Short-term impacts to soils would be avoided.

3.2.4.2 Alternative 2 (Proposed Action)

<u>Site Productivity</u>

Helicopter yarding would not result in any measurable impacts to project area soils, including reductions in site productivity. No negative effects on soils are expected from helicopter yarding since logs are lifted free of the ground for transport to the landing.

Observations over 3 decades of burning piled slash in this area of the Oregon Coast Range has shown no reduction in site productivity and in some cases an increase in tree growth on areas where piled slash has been burned. Based on this local experience, no reduction in site productivity is expected from this proposed activity.

Cutting and piling conifer slash to restore oak habitat would cause little disturbance to soils. Hand piling and burning conifer slash to provide oak habitat, could produce small patches of soil with altered surface properties that restrict infiltration. However, erodibility rates would be expected to return to original levels a year or two after the burn, as soil and vegetation recover. A slight mineralization of nitrogen under the piles burned could occur, which would enhance plant growth at the spot. However, pile burning is not expected to result in overall long-term losses to soil structure or productivity.

Minor impacts to soil resources could occur during helicopter placement of LWD in Maxfield Creek. Some soil displacement and compaction would be expected if trees are placed onto stream banks, floodplains, or terraces. However, these impacts would be minimal and localized.

3.2.4.3 Cumulative Effects

Because the effects of the proposed action on soils are expected to be short-term and localized, cumulative effects are not anticipated. The combined effect of the proposed action is not expected to exceed those described above for each individual action.

3.2.5 Water

(IDT Reports incorporated by reference: Maxfield Creek Environmental Assessment Soils/Hydrology Report, Cumulative Effects Analysis for Maxfield Creek)

Affected Environment

The project area contains headwater tributaries of Maxfield Creek, a tributary of the Luckiamute River. The Luckiamute River Watershed is not a key watershed nor identified as a municipal watershed.

Stream channels in the meadow restoration areas are primarily small, intermittent 1st and 2nd order headwater streams. These streams are generally narrow, steep (gradient 8 percent or greater), with low sinuosity and moderate to high entrenchment. Due to shallow soil conditions, most flow travels as near-surface runoff, which may or may not coalesce into surface flow down slope. Most of the tributaries retreat subsurface along a steep terrace before reaching Maxfield Creek.

The largest stream flowing through the project area is Maxfield Creek. Channel morphology is dominated by beaver activity (the creation of dams and backwater pools). Through the BLM parcel, beaver and large wood/debris structures have widened the main channel, creating a small floodplain and marsh. In several places, Maxfield Creek is undercutting the stream bank and threatening to undermine the adjacent roadway, especially at the inlets of undersized culverts.

During field review of stream channels in the project area, channels were observed to be mostly stable and functional with sediment supplies in the range expected for these stream types. Sedimentation upstream of beaver impoundments, as well as an increase in bank scour, may be raising fine sediment loads above “reference” conditions. However, no quantitative turbidity data was located for this analysis.

Stream Temperature
Two northern tributaries in Section 19 have been identified as being at a “high” risk for temperature increases (*LAAWA*). These same reaches were also identified as “riparian areas without shade” (*LAAWA*, Map 15). The headwaters of these tributaries flow through current or historic meadows and pastures, where they can be exposed to direct solar radiation, especially during the summer. In addition, throughout the entire project area, there are periodic gaps in the stream-side riparian canopy where stream reaches are directly exposed to the sun. However, riparian openings are a natural feature in these areas.

The mainstem channel of Maxfield Creek has been widened substantially by beaver activity; the beaver presence has further reduced canopy cover over the stream channel. It is presumed that the

mainstem of Maxfield Creek may be warmer than if no beaver dams/ponds where present due to reduced shading, channel widening, and reduced flow velocities.

Oregon Department of Environmental Quality (DEQ) Standards
The Oregon Department of Environmental Quality's (DEQ) 1998 303d List of Water Quality Limited Streams is a compilation of streams which do not meet the state's water quality standards. Maxfield Creek and its tributaries are not listed in the 2002 303d report. The Luckiamute River is listed from river mile 0 to 31.7 for exceeding standards for fecal coliform during the winter/spring/fall.

The DEQ also published an assessment, the 319 Report, which identifies streams with potential non-point source water pollution problems. The Luckiamute River is also listed in the 319 report for having "severe" water quality conditions, with substantiating data, as well as "moderate" water quality conditions affecting aquatic habitat, by observation.

Beneficial Uses
There are no known domestic or municipal water rights in the project area. Closest proximity rights to the project include: domestic irrigation (lawn & garden), approximately 2 miles downstream of the BLM lands in Section 19 and an irrigation water right approximately 2.8 miles downstream of Section 29. The nearest domestic water rights are over 5 miles downstream from the Maxfield Creek project areas (WRIS 2004). Additional recognized beneficial uses of the stream-flow in the project area include anadromous fish, resident fish, recreation, and esthetic value.

Environmental Effects

3.2.5.1 Alternative 1 (No Action)

The no action alternative would result in a continuation of the condition and trends as described in the *MEGA WA* (September, 1998), *LAAWA*, and the Affected Environment section of this report.

3.2.5.2 Alternative 2 (Proposed Action)

Measurable effects to hydrologic processes, channel conditions, and water quality due to the proposed action are unlikely. Alterations in the capture, infiltration and routing (both surface and subsurface) of precipitation may occur as a consequence of the removal of trees and reductions in stand density. This effect from the proposed action would be difficult to measure and unlikely to alter stream channel conditions or water quality.

The proposed project would affect approximately 0.012 percent of the forest cover in the Luckiamute River watershed. Because of the small percentage of forest cover being affected by this project, increases to stream flow (mean annual yield & summer base flow) caused by this action alone are unlikely to be measurable. Because the project area lies at elevations below the rain-on-snow or snow precipitation zones, it is also not at a high risk for increases to peak flows from rapid snow melt (Cumulative Effects Analysis of Maxfield Creek, 2005).

Increases in stream temperature as a result of this action are also unlikely; the SPZs along all surface waters should maintain adequate shading, where it exists.

In-Stream Large Woody Debris Placement:
The proposed action is to place 50 pieces of LWD into Maxfield Creek (see Map#2). Logs may be placed individually, in clusters/combinations, or in structure complexes, depending on the local channel conditions. The placing of LWD in Maxfield Creek is likely to impact water quality and channel morphology over both the short and long term. Larger structure complexes would have a greater influence on hydrologic conditions, than individually placed logs. By changing channel geometry, the placement of LWD may alter low flow or peak flow events, increase bank erosion, alter the sediment transport regime and alter summer stream temperatures and\or levels of dissolved oxygen from the current regime. The extent of these effects is anticipated to meet or exceed Aquatic Conservation Strategy objectives and to lead to an overall improvement in channel and water quality conditions for aquatic species.

During project implementation, increased suspended sediment and turbidity in Maxfield Creek, in association with minor bank scour, is expected. This increase would likely be short-term (days) and localized (not expected to extend far into the Luckiamute River mainstem). Increases in surface erosion and fine sediment inputs to the channel, from disturbed surfaces adjacent to the channel, would be unlikely.

Logging:
It is unlikely that the proposed projects would lead to measurable increases in sediment delivery to streams, stream turbidity, the alteration of stream substrate composition, or sediment transport regime. Stream protection zones would eliminate disturbance of streamside vegetation (no trees would be cut from the stream bank or where roots are stabilizing the stream bank).

Burning hand piles could produce patches of soil with altered surface properties that restrict infiltration. However, these surfaces would be surrounded by larger areas that could absorb runoff or sediment that reach them. In addition, piles would be burned outside of SPZs (buffers) and away from standing or running surface water.

Since the proposed action is unlikely to result in any measurable increase in stream temperature or sedimentation and would not place large amounts of fine organic material in the stream or alter stream reaeration, it is unlikely that it would have any measurable effect on dissolved oxygen or nutrient levels.

3.2.5.3 Cumulative Effects

The effect of this action would allow Maxfield Creek to more naturally evolve over time. Because of the small amount of land affected by the proposed action and because the anticipated effects of the proposed action on hydrology would be short-term and localized, the proposed action is not likely to have substantial cumulative effects in the watershed.

The proposed action, when combined with other proposed actions in the Luckiamute Watershed, is unlikely to have detrimental cumulative effects on the hydrologic regime.

This watershed was initially analyzed for land ownership, vegetation type, age class, and extent of transient snow zone. Using these parameters and the methodology of the *Salem District Watershed Cumulative Effects Analysis Procedure 1994*, a risk factor ("rfactor") was calculated to determine the relative risk or sensitivity of areas to increases in runoff and consequently peak stream flows. Currently, the average rfactor value in this watershed is "2", which is considered moderate (on a scale of 0-3, with 3 = high risk of increases to peak flows).

The Assessment Manual indicates a low risk of peak flow enhancement for watersheds that are more than 75 percent within the rain zone; this watershed has more than 99 percent of its land in this zone. Therefore, the statistics given above indicate that the risk of peak-flow enhancement in this watershed is "low".

Due to the small amount of federal land in this watershed, cumulative impacts to the Upper Luckiamute River/Maxfield Creek, sub-watersheds are likely to continue to be dominated by actions on private lands. Current and likely future management actions on public lands in the watershed include: stand density management through timber sales, road maintenance (drainage improvements, renovations, decommissioning), and riparian treatments. Likely future private actions include: timber management and associated road construction in the highlands and continued settlement and agricultural development in the lowlands.

3.2.6 Fisheries/Aquatic Habitat

(IDT Reports incorporated by reference: Maxfield Creek Fisheries Report - pp. 1-3, Maxfield Creek Restoration Project Environmental Assessment Abstract - Fisheries)

Affected Environment

Two historic dams have been documented downstream of the project area, in Maxfield Creek and the Luckiamute River (Streamnet 2005). Current condition of these structures to act as barriers to migration is unknown.

Field review of Maxfield Creek was conducted on March 10, 2005 from section 29 through section 19. Stream channel characteristics, including channel incision and widened floodplains suggest a long history of beaver utilization of Maxfield Creek. The amount of CWD varied throughout the length of Maxfield Creek and was dependent on beaver presence. In areas where beavers were active there was an abundant quantity of CWD in the stream channel affecting stream function. The stream segments through BLM administered land in section 19 and below appeared to have less beaver activity and lower quantities of CWD. In general, large woody debris (pieces greater than 24 inches in diameter and longer than 50 feet) was low along the full length of Maxfield Creek.

Surveys for fish presence were conducted in the spring of 2005, and confirmed the presence of resident cutthroat trout (*Oncorhynchus clarki*) in the mainstem of Maxfield Creek through the project area. No tributaries to Maxfield Creek were found to support fish populations in or near the project area. Other native species of fish are known, or suspected, to occupy aquatic habitat within the project area. Project effects to trout are anticipated to affect these other species similarly.

Federal Threatened or Endangered Species or Habitat:
The Upper Willamette River steelhead trout (*O. mykiss*) is listed as threatened under the Endangered Species Act and is likely present in the project area. The proposed actions (specifically instream LWD placement) would result in an ESA affects determination of May Affect –Likely to Adversely Affect steelhead trout and proposed critical habitat.

Chinook salmon (*O. tshawytscha*) occur between 8.3 to 32 miles downstream from the project area. Spring Chinook salmon in the Upper Willamette River Evolutionarily Significant Unit (ESU) are threatened under the Endangered Species Act. Oregon chub is listed as endangered under the Endangered Species Act. Currently there are no known chub populations residing in the Luckiamute River watershed.

Environmental Effects

3.2.6.1 Alternative 1 (No Action)

No in-stream enhancements would occur associated with this alternative. Recruitment of LWD to the stream channel would be delayed, potentially for decades, until natural recruitment occurs from mature and decadent stands. Stream reaches and drainages noted as being deficient in LWD would continue under existing conditions. Logs in RR's but away from stream channels would remain on site, slowly degrade and would contribute to local woody debris values. These logs would not directly benefit fish habitat. On federal lands, LWD conditions would be expected to move toward recovered condition but at a protracted rate compared to the proposed action.

3.2.6.2 Alternative 2 (Proposed Action)

Meadow Restoration: No impacts are expected to occur to fisheries resources downstream since no changes to peak/base flow or stream temperatures are predicted. The proposed design features including SPZs and the use of helicopter yarding is expected to prevent/minimize sediment or temperature impacts from affecting the aquatic habitats due to logging activities.

Implementation of hand pile slash burning with the use of applicable project design features are not anticipated to negatively effect the aquatic environment.

In-stream Large Woody Debris Placement: The proposed action would have short term negative affects to aquatic habitat. These affects would be localized and not anticipated to reach the Luckiamute River. Seasonally restricting placement of large woody debris to July through September would aid in minimizing sediment reaching the stream channel.

The placement of LWD in Maxfield Creek using a helicopter is expected to increase habitat complexity and provide the key elements necessary to maintain that habitat in the future. In-stream work of this type is considered to be beneficial to both the habitat and fish populations as they respond to the improved habitat, however, some indirect short term negative impacts to fish and aquatic habitat would occur. The placement of the wood could mobilize fine sediments locally as a result of local hydraulic changes altering bed and bank scour and deposition. With the use of project design features, effects are anticipated to occur only at the site and within a short distance

downstream. Sediment movement would be expected to return to background levels within the first winter after project implementation.

The indirect beneficial effects of the action are anticipated to include improved sorting and routing processes, an increase in the amount of pool habitat, increased access of the stream to its floodplain and greater summer and winter rearing potential for juvenile salmonids within the stream segment.

3.2.6.3 Cumulative Effects

The proposed upland treatments are not expected to alter large woody debris (LWD) recruitment, stream bank stability, and sediment supply to channels at the 5th field watershed scale in the short term or long term with the implementation of stream-side no entry zones. The proposed LWD placement project would be providing site level beneficial effects to LWD function; however, the small scale of the project would be unlikely to affect fish habitat beyond the treatment reach. Similar site level beneficial effects from additional LWD placement in Section 19, addressed in the Maxfield Creek Restoration EA # OR080-04-19, would occur concurrent with impacts noted here. Due to the small stream reach affected by the combined LWD projects, the proposed actions are unlikely to measurably affect fish populations at the fifth field scale.

Based on the hydrology analysis, the proposed upland treatments are not likely to measurably affect hydrologic processes, channel conditions, and water quality (LaForge 2005). The proposed upland treatments are not anticipated to cause site level effects to sediment or flows and they would be highly unlikely to result in any cumulative effects to fish habitat or populations.

The proposed LWD project, and LWD placement addressed in Maxfield Creek Restoration EA # OR080-04-19, may result in small site level disturbances to the stream bed and result in short term increases in sediment movement and turbidity. Impacts are not anticipated to result in increase sediment transport rates downstream and would not combine with any other sediment disturbing activities to create additive impacts to aquatic habitats. Therefore the cumulative LWD placement actions are anticipated to have no more than small scale local effects to aquatic habitat, and are not anticipated to contribute to cumulative effects to fish populations at the fifth field level.

Cumulative impacts to fishery resources could occur if proposed actions result in alterations in runoff contributing to changes in flows where fish reside. Based on the Hydrology Report (2005) "Cumulative Effects Analysis for Maxfield Creek" the probability of the proposed action altering peak flows in the project area was considered low, and would be highly unlikely to contribute to cumulative effects, subsequently no cumulative effects are anticipated on aquatic resources.

The Hydrology report indicated that the proposed project was considered unlikely to have detectable effects on stream temperatures and not expected to result in any cumulative effects to temperature (LaForge 2005). No cumulative effects are anticipated for peak flows, streambanks, and instream structure which could also affect temperature. Since no cumulative effects were anticipated for temperature, streambank conditions, and peak flows, these issues would not result in cumulative effects for fisheries resources.

4.0 Compliance with the Aquatic Conservation Strategy

Existing Watershed Conditions

The Maxfield Creek LWD Placement on Private Land/Meadow Restoration Project area is located within the Luckiamute River 5th-field watershed (tributary of the Willamette River). The Luckiamute River Watershed is not a key watershed.

Four percent of the watershed is managed by BLM and 96% is managed by other landowners. The *Luckiamute\Ash Creek\American Bottom Watershed Assessment Appendix I* (2004) describes the events that contributed to the current condition such as timber harvest, wildfire, and road building.

Late seral and/or old growth (greater than 80 years old) forests comprise 35% of the BLM managed lands in the watershed. We can infer then, that commercial harvest or stand replacement fire has occurred on 65% of the BLM managed lands in the watershed. The earliest harvests on BLM managed lands have been regenerated and are progressing towards providing mature forest structure. Most of the private industrial lands have been and will continue to be moved from mid condition class to the early condition class.

Review of Aquatic Conservation Strategy Compliance:

The Marys Peak Field Manager has reviewed this analysis and has determined that the project complies with the ACS on the project (site) scale.

The project would comply with:

Component 1 – Riparian Reserves: Maintaining canopy cover along all streams and the wetlands would protect stream bank stability and water temperature. Riparian Reserve boundaries would be established consistent with direction from the *Salem District Resource Management Plan.*

Component 2 – Key Watershed: establishing the Maxfield Creek LWD Placement on Private Land/Meadow Restoration Project is not within a key watershed.

Component 3 –Watershed Analysis: The *Luckiamute/Ash Creek/American Bottom Watershed Assessment Appendix I* was completed in 2004. The following are watershed assessment findings that apply to or are components of this project:

- The Maxfield parcels are different from most of the BLM lands analyzed in the 1998 BLM Watershed Analysis (*Rowell Creek/Mill Creek/Rickreall Creek/Luckiamute River Watershed Analysis*) because they contain a large component of meadow and Oregon white oak habitats comprising about 52 ac (7%) of the area. The Maxfield Creek meadows are of the dry type and several of the meadows are surrounded by Oregon white oak (Quercus garryana) woodland or savanna (p.3).

- The condition most specific to the Maxfield parcels is the elimination of frequent, low-intensity fire that maintained meadow and Oregon white oak habitat and associated plant communities, and affected the structure of conifer forests on dry sites. The abundance of Oregon white oak and meadow habitat has greatly decreased from the past as a result of fire exclusion and loss to agriculture and development (p.6).

- Consistent with Adaptive Management Area and Aquatic Conservation Strategy objectives, approximately 156 acres is available for conifer woodland, meadow, and oak restoration, most within this decade and of which 52 acres (see first paragraph) is currently within meadow and oak habitat (p.8).

- Action planning should focus on improving in-stream habitat quality by reconnecting floodplains and adding structural complexity to the streams. Short-term management planning may involve placing wood in streams to increase in-stream complexity that has been removed or degraded while not adding to the major debris jams that are known from some areas (p.11*)*.

- Restore and maintain selected meadow and oak habitats within the Maxfield parcels to provide historic habitat for associated floral and faunal biodiversity. Several Special Status Species may benefit if these patches are prevented from becoming too small and too fragmented. Restore meadows to the greatest spatial extent possible to maximize the time between future release treatments (p.14).

- A potential negative effect to CWD recruitment was noted as approximately 96 percent of streams surveyed for LWD key pieces were categorized as undesirable for in-stream aquatic habitat within the Upper Luckiamute River watershed. For the streams surveyed, in-stream structure is lacking. The restoration strategy should include riparian plantings as well as supplying wood from some other sources. Several of the watersheds have stream reaches that meet desirable benchmarks for the number of pieces and large wood volume, but over all the majority of habitat surveyed falls into the undesirable category. (pp. 274, 281, 285*)*

Component 4 – Watershed Restoration: The placement of LWD within Maxfield Creek would be expected to result in short-term restoration until natural processes can supply the materials needed to recover good stream habitat.

The restoration and maintenance of selected meadow and oak habitats within the Maxfield parcels would provide historic habitat for associated floral and faunal biodiversity. Several Special Status Species may benefit if these patches are prevented from becoming too small and too fragmented.

In addition, the Marys Peak Field Manager has reviewed this project against the ACS objectives at the project or site scale with the following results: The no action alternative does not retard or prevent the attainment of any of the nine ACS objectives because this alternative would maintain current conditions. The proposed action does not retard or prevent the attainment of any of the nine ACS objectives.

Table 7: Project's Consistency with the Nine Aquatic Conservation Strategy Objectives

Aquatic Conservation Strategy Objectives (ACSOs)	Maxfield Creek LWD Placement on Private Land/Meadow Restoration Project
1. Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features.	Does not prevent the attainment of ***ACSO 1***. LWD placement would increase aquatic habitat complexity and diversity. Enhancing meadow habitats, would help restore the distribution and complexity of landscape features in the watershed. Management recommendations to maintain and restore oak, meadow and woodland habitat in conifer stands is consistent with this objective and would not prevent attainment of ACS objectives.
2. Maintain and restore spatial and temporal connectivity within and between watersheds.	Does not prevent the attainment of ***ACSO 2***. Long term connectivity of terrestrial watershed features would be improved by increasing the availability and proximity of functioning riparian habitat.
3. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.	Does not prevent the attainment of ***ACSO 3***. Placing LWD in Maxfield Creek would encourage the formation of pools/riffles, meanders, and other complex channel morphological features. Within meadow restoration areas, no-treatment buffers adjacent to all surface water would maintain the physical integrity of the aquatic system.
4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems.	Does not prevent the attainment of ***ACSO 4***. Although some short-term effects to water quality may occur (primarily increased fine sediment loads during LWD placement, the proposed project would help restore water quality over the long-term by restoring more natural channel conditions.
5. Maintain and restore the sediment regime under which aquatic ecosystems evolved.	Does not prevent the attainment of ***ACSO 5***. Large woody debris placement would help restore the historical sediment regime of the aquatic ecosystem. Based on similar work this increase in sediment is expected to last less than 2 days before pre-project conditions re-establish themselves at the site.
6. Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing.	Does not prevent the attainment of ***ACSO 6***. Large woody debris placement would not affect the volume of stream flow. However, it would help to restore the routing of instream flows. The proposed timber cutting would affect only 0.012% of the current forest cover in the watershed.
7. Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.	Does not prevent the attainment of ***ACSO 7***. Large woody debris instream placement would help restore floodplain function by increasing the stream's ability to access its floodplain. The project would be unlikely to affect water table elevations. Project design features, such as no-treatment buffers, coupled with the small % of vegetation proposed to be removed, would maintain groundwater levels and floodplain inundation rates. Recommendations to restore and maintain meadow habitat are consistent with this objective and would not prevent attainment of any ACS objective.
8. Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands.	Does not prevent the attainment of ***ACSO 8***. Within the LWD instream placement project area, current species composition and diversity of plant communities would be maintained. Within riparian zones and wetlands, current species composition would be maintained, except as necessary to restore meadow, oak savanna, and oak woodland habitats that occurred there under reference conditions.
9. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate and vertebrate riparian-dependent species.	Does not prevent the attainment of ***ACSO 9***. Large woody debris placement would increase habitat connectivity for riparian-dependent species, in-channel habitat diversity, and riparian functions (floodplain inundation, CWD, increasing nutrients for primary producers, etc.). Vegetation management would help restore habitat by increasing species diversity and enhancing meadows.

5.0 LIST OF PREPARERS

Table 8: List of Preparers

Resource	Name	Initial	Date
Cultural Resources	Dave Calver		
Hydrology/Water Quality/Soils	Steve Wegner		
Silviculture/Riparian Ecology	Hugh Snook	HWS	11/19/07
Botany TES and Special Status Plant Species	Ron Exeter	RE	Nov 19, 2007
Wildlife TES and Special Status Animal Species	Gary Licata	gal	11/19/07
Fuels/Air Quality	Tom Tomczyk	TST	11/19/07
Fisheries	Scott Snedaker		
Recreation/Rural Interface/Visuals	Traci Meredith	TMM	11/16/07
NEPA	Gary Humbard	GLH	11/16/07

CONTACTS AND CONSULTATION

6.1 Agencies, Organizations, and Persons Consulted (ESA Section 7 Consultation)

U. S. Fish and Wildlife Service

To address concerns for potential effects to spotted owl critical habitat, the proposed action was consulted upon with the U.S. Fish and Wildlife Service, as required under Section 7 of the ESA. A biological assessment describing the impacts to all ESA listed species was submitted to the U.S. Fish and Wildlife Service in the winter of 2005-2006. The proposed action is a may affect, likely to adversely affect the northern spotted owl and its habitat. The habitat is fragmented, too small and too isolated from other federal lands to provide enough suitable habitat for one viable home range for the northern spotted owl. The proposed action is a may affect, likely to adversely affect the marbled murrelet and its habitat. The high level of edge habitat associated with the shape and size of the stands greatly decrease their quality as murrelet nesting habitat. The Taylor's checkerspot butterfly is a Federal Candidate species and is considered a listed species according to BLM policy. The proposed action would have a positive effect on the Taylor's checkerspot butterfly because the action would restore, improve, and maintain meadow habitat used by the butterfly. The Fender's blue butterfly is a Federal Endangered species and Kincaid's Lupine is a Federal Threatened species. The proposed action (restoration of existing meadow habitat) would have a positive effect on both the Fender's blue butterfly and Kincaid's lupine because the action may restore, improve, and maintain habitat for the lupine and butterfly, and would be considered a May Effect, Not Likely to Adversely Affect determination. The proposed action would have no affect on the bald eagle or its habitat since it does not occur in or adjacent to the proposed project area and potential nesting and foraging habitat is not being modified. Oregon chub is listed as endangered under the Endangered Species Act. Currently there are no known

chub populations residing in the Luckiamute watershed. No effects are anticipated to Oregon chub historic habitat.

NOAA NMFS
A preliminary determination has been made that the proposed Maxfield Creek LWD Placement on Private Land/Meadow Restoration project includes 'May Affect' action areas to ESA listed threatened UWR (Upper Willamette River) steelhead trout. These determinations were primarily derived from the distance of listed fish and critical habitat from treatment areas. Proposed actions which 'May Affect' UWR steelhead trout would comply with existing programmatic consultation and relevant design criteria. Existing programmatic consultation covers log removal for in-stream restoration projects. Log removal for in-stream restoration is covered under NOAA NMFS *Endangered Species Act Section 7 Formal Programmatic Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for Fish Habitat Restoration Activities in Oregon and Washington, CY2007-CY2012*.

Protection of EFH as described by the Magnuson/Stevens Fisheries Conservation and Management Act and consultation with NOAA NMFS is required for all projects which may adversely affect EFH of Chinook and coho salmon. The proposed actions in the Maxfield Creek LWD Placement on Private Land/Meadow Restoration EA are not anticipated to adversely affect EFH. This determination is primarily due to the distance of EFH from treatment areas.

6.2 Cultural Resources - Section 106 Consultation and Consultation with State Historical Preservation Office

The project area occurs in the Oregon Coast Range. Survey techniques are based on those described in Appendix D of the *Protocol for Managing Cultural Resource on Lands Administered by the Bureau of Land Management in Oregon*. Post-project survey would be conducted according to standards based on slope defined in the Protocol appendix. Ground disturbing work would be suspended if cultural material is discovered during project work until an archaeologist can assess the significance of the discovery.

6.3 Public Scoping and Notification-Tribal Governments, Adjacent Landowners, General Public, and State County and local government offices

- A scoping letter, dated June 7, 2007, was sent to 16 potentially affected and/or interested individuals, groups, and agencies. No response(s) was received during the scoping period.
- A description of the project was included in the June and September 2007 project update to solicit comments on the proposed project.

6.3.1 EA public comment period

- The EA and FONSI will be made available for public review November 24, 2007 to December 23, 2007. The notice for public comment will be published in a legal notice by the *Gazette Times* newspaper. Comments received by the Marys Peak Resource Area of the Salem District Office, 1717 Fabry Road SE, Salem, Oregon 97306, on or before December 23, 2007 will be considered in making the final decisions for these projects.

7.0 MAJOR SOURCES

7.1 Interdisciplinary Team Reports

Garono, R., Anderson, B., Harma K., Buhl, C., 2004. *Luckiamute/AshCreek/American Bottom Watershed Assessment*. Corvallis, OR.

Exeter, R. 2005. Marys Peak Resource Area Botanical Report.. Marys Peak Resource Area, Salem District, Bureau of Land Management. Salem, OR. *Botanical Report* NEPA File.

La Forge, A. 2005. *Maxfield Creek Environmental Assessment Soils/Hydro Report*. Marys Peak Resource Area, Salem District, Bureau of Land Management. Salem, OR.

La Forge, A. 2005. *Cumulative Effects Analysis for Maxfield Creek*. Mary Peak Resource Area, Salem District, Bureau of Land Management Salem, OR.

Licata, G. 2005. *Biological Evaluation for Terrestrial Wildlife, Maxfield Creek Meadow/Oak Restoration and Density Management Project*. Marys Peak Resource Area, Salem District, Bureau of Land Management. Salem, OR.

Meredith, T 2005. *Recreation/Rural Interface/VRM Report*. Marys Peak Resource Area, Salem District, Bureau of Land Management. Salem, OR.

Snedaker, S. 2005. *Maxfield Creek Fisheries Report*. Marys Peak Resource Area, Salem District, Bureau of Land Management. Salem, OR. Prepared for Maxfield Creek LWD Placement on Private Land/Meadow Restoration NEPA File.

Snook, H. 2005. *Maxfield Creek Vegetation and Ecology Report*. Marys Peak Resource Area, Salem District, Bureau of Land Management. Salem, OR

Snook, H. 2005. *Maxfield Creek Silviculture and Riparian Reserve Prescription Report*. Marys Peak Resource Area, Salem District, Bureau of Land Management. Salem, OR.

Tomczyk, T. 2005. *Maxfield Creek Projects and Timber Sale Proposal Fuels Report*. Marys Peak Resource Area, Salem District, Bureau of Land Management. Salem, OR.

7.2 Additional References

USDA. Forest Service, USDI. Bureau of Land Management. 1994. Final Supplemental Environmental Impact Statement Management of Habitat for Late Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl. Portland, OR.

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