Upper Warnicke Timber Sale

Final Decision and Decision Rationale

Upper Siletz River Watershed Enhancement Environmental Assessment
DOI-BLM-OR-S050-2009-0002

April 2013

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

Township 7 South, Range 8 West, Sections 14 and 15, Willamette Meridian
Polk County, Oregon

Responsible Agency:	USDI – Bureau of Land Management
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BLM
Salem District

BLM/OR/WA/AE-10/093+1792

1.0 Introduction

The Bureau of Land Management (BLM) conducted an environmental analysis for the Upper Warnicke Timber Sale, which is documented in the *Upper Siletz River Watershed Enhancement Environmental Assessment* (Upper Siletz River EA) (EA# DOI-BLM-OR-S050-2009-0002) and the associated project file. This EA analyzed the effects of three timber sales: Potter Elk, Fanno Lookout, and Upper Warnicke[1]. The decision maker made the EA and the draft Finding of No Significant Impact (FONSI) available for public review from August 9, 2010 to September 7, 2010. The decision maker signed the Finding of No Significant Impact (FONSI) on March 8, 2012. The decision documented in this Decision Record (DR) is based on the analysis documented in the Upper Siletz River EA. This decision authorizes the implementation of only those activities directly related to and included within the Upper Warnicke Timber Sale.

2.0 Decision

I have decided to implement the Upper Warnicke Timber Sale as described in the Proposed Action (EA pp. 11 to 12), hereafter referred to as the "selected action." The selected action is shown on the maps included within this DR. This decision is based on site-specific analysis in the Upper Siletz River EA, the supporting project record, management recommendations contained in the *Upper Siletz River Watershed Analysis* (1996), as well as the management direction contained in the *Salem District Resource Management Plan* (RMP) (May 1995), which are incorporated by reference in the EA.

Refinements to the Proposed Action since the EA was Published

The interdisciplinary team (IDT) identified the Sandstone Quarry, located approximately 2.6 miles west of the Upper Warnicke Timber Sale on the Blackrock Mainline (8-7-23), as a source of rock for the temporary road construction included in the sale. The IDT analyzed the site in the context of the proposed rock extraction and determined that no significant adverse effects would occur. The BLM utilizes standard design features and Best Management Practices (BMPs) for quarry use to minimize adverse impacts to resources and has incorporated such features into the contract.

Decision Summary

The following is a summary of this decision:

Density Management

- Variable density thinning on approximately 214 acres of 50 to 57 year old forest stands[2] within AMR and RR.
- Approximately 6,125 MBF of timber will be harvested.

Timber Harvest

- Ground-Based yarding – 161 acres
- Skyline yarding – 53 acres

Fuels

[1] Potter Elk Timber Sale and Fanno Lookout Timber Sale sold in June 2012 and November 2012, respectively.
[2] Ages in 2013. Stands naturally regenerated after harvest in the 1950s and 1960s.

- Post-harvest fuel hazard surveys and recommend treatments to reduce fuel loading

Roads

- Construction of three temporary roads totaling approximately 0.7 miles. Following harvest all of the construction will be decommissioned.
- Renovation of approximately 3.2 miles. Renovation includes placing a 6-inch lift of aggregate on approximately 1.3 miles of existing road, as well as spot rocking at culvert replacement sites. Twenty-two aged and failing culverts will also be replaced.
- Log haul will be seasonally restricted on all roads within the sale area.

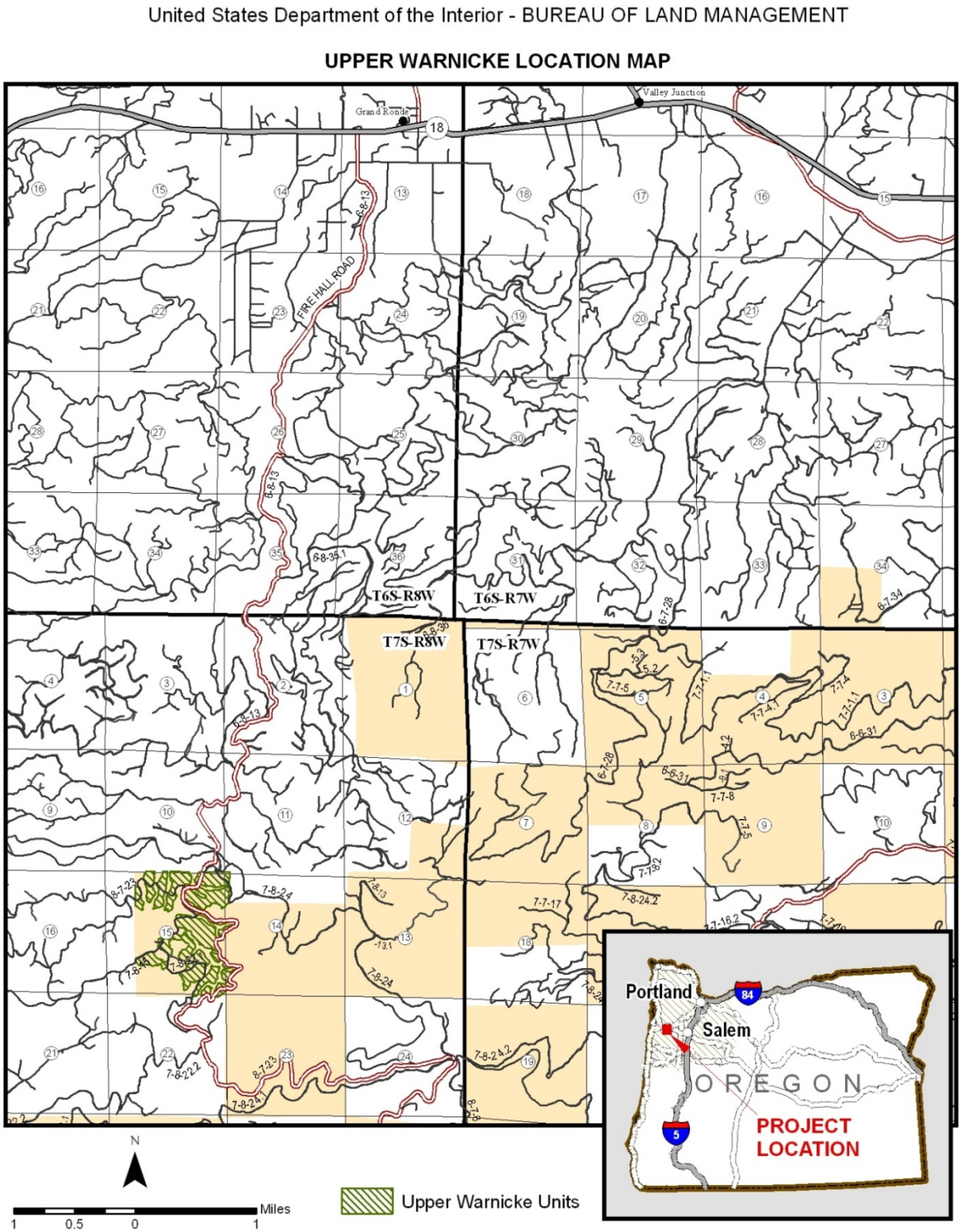
Project Design Features

- All design features, BMPs, and mitigation measures described in the EA (pp. 14-18) will be incorporated into the timber sale contract.

Location and Selected Action maps appear on the following pages.

3.0 Location and Selected Action Maps

Map 1. Location Map



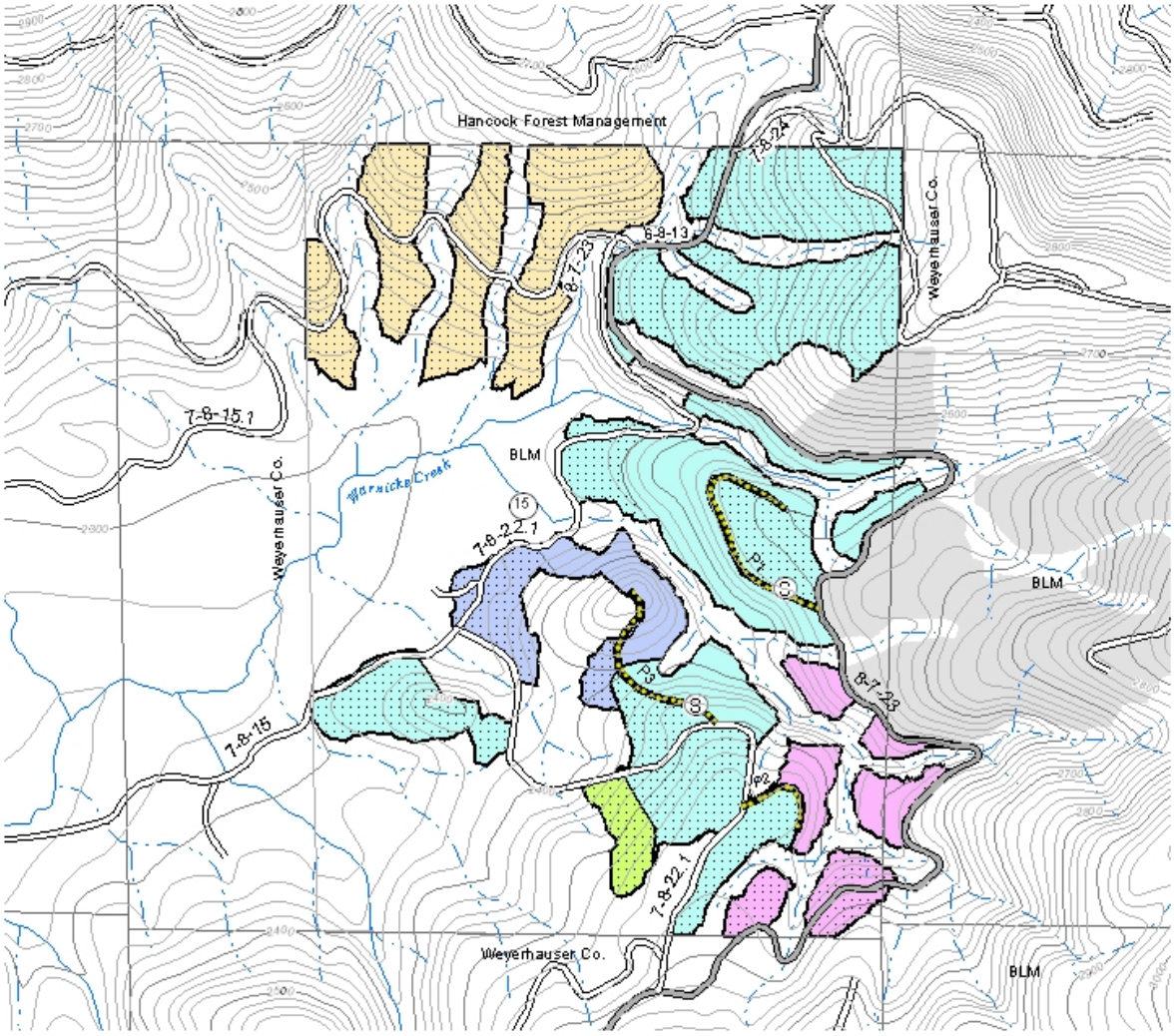
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

Map 2. Selected Action Map

United States Department of the Interior - BUREAU OF LAND MANAGEMENT

UPPER WARNICKE SELECTED ACTION

T. 7 S., R. 8 W., Section 15, W.M. - SALEM DISTRICT - OREGON



Contour interval: 20 ft.

- Unit 15A - 127 acres
- Unit 15B - 20 acres
- Unit 15C - 45 acres
- Unit 15D - 5 acres
- Unit 15 E - 17 acres
- Ground-Based Yarding
- Skyline Yarding
- Road to be constructed and decommissioned
- Major Access Road
- Other Road
- Fishbearing stream
- Non Fishbearing stream
- Previous Sale Area (Condenser, sold 2007)

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

N

1,000 500 0 1,000 Feet

4.0 Alternatives Considered

The EA analyzed the effects of the No Action, Proposed Action, and Limited New Road Construction alternatives. No unresolved conflicts concerning alternative uses of available resources (section 102(2)(E) of NEPA) were identified. Complete descriptions of the three alternatives are contained in the EA, pp. 35 to 87.

5.0 Decision Rationale

Considering public comment, the content of the EA and supporting project record, the management recommendations contained in the *Upper Siletz River Watershed Analysis* and the management direction contained in the RMP, I have decided to implement Alternative 2, the selected action, as described in section 2.0 of this DR. The following is my rationale for this decision.

1. The Selected Action:
   - Best meets the purpose and need of the project (EA section 1.6), as shown in *Table 1*.
   - Complies with the Salem District's Record of Decision and Resource Management Plan (1995 ROD/RMP)
   - Will not have significant impact on the affected elements of the environment (2012 FONSI) beyond those already anticipated and addressed in the RMP FEIS.
   - Is economically viable. This sale will produce revenue for the Federal Government and provide jobs for Oregonians.
   - Meets Aquatic Conservation Strategy Objectives (EA, pp. 88-91).
   - Has been adequately analyzed.

2. The No Action alternative was not selected because it does not meet the Purpose and Need directly, or delays the achievement of the Purpose and Need as shown in *Table 1* on the following page.

3. Alternative 3 was not selected because it treats fewer acres than the Proposed Action. I reviewed the effects related to both Alternatives 2 and 3. I believe the minimal effects related to the road building[3] are a reasonable trade-off for the additional acres that are treated in Alternative 2.

[3] Alternative 2 includes 0.7 miles of new road building. Alternative 3 does not include any new road building.

Table 1. Comparison of the Alternatives with Regard to the Purpose of and Need for Action

Purpose and Need (EA Section 1.6)	Alternative 1 No Action	Alternative 2 Proposed Action	Alternative 3 Limited New Road Construction
Restore and maintain late-successional forest conditions which serve as habitat for late-successional forest species, which can be consistent with marbled murrelet guidelines (RMP p. 19).	Understory regeneration, shrubs etc. would be lacking. The current pattern of habitat use by wildlife species within these project areas would be expected to continue unchanged. Dispersal habitat conditions for spotted owls would remain unchanged. No timber harvest would occur consequently no spatial and structural diversity would occur.	In the short-term, increases horizontal spatial variability within treated stands (gaps and clumps); minor reduction and disturbance to existing CWD material (snags and down logs) resulting from felling, yarding, and road construction. Reduced recruitment rate of small sized CWD would be partially offset by immediate creation of larger CWD of desirable size, and augmentation of decadence processes; retention of hardwood tree and shrub diversity. In the long-term, the gradual transition in structural characteristics of the treated stands would more closely resemble late-seral forest (larger diameter trees and limbs, sub-canopy development, greater tree species diversity, greater volume and size of hard CWD, canopy gaps); and extends persistence of hardwood tree and shrub cover diversity.	Same as in Alternative 2 except fewer acres would receive treatment through mid-seral enhancement in the AMR.
Accelerate growth of trees to restore large conifers to RR (RMP p. 7).	Without treatment, stand structure would remain relatively uniform, except for gaps created by disturbance.	The proposed action would retain trees which would reach larger diameters earlier compared to the no treatment option, creating natural opportunities for higher quality LWD recruitment in the long-term.	Similar to Alternative 2, but would occur on fewer acres of Riparian Reserve.

Enhance or restore habitat (e.g. CWD, snag habitat, instream large wood) for populations of native riparian-dependent plants, invertebrates, and vertebrate species can be (RMP p. 7).	Does not meet purpose and need. Maintains existing forest conditions which are lacking CWD and snags, particularly in decay class 1 and 2.	Increases snags and CWD; providing habitat for amphibians, small mammals, invertebrates, bryophytes and fungi.	Same as in Alternative 2 except fewer acres would acquire desired vegetation characteristics.
Provide appropriate access for timber harvest and silvicultural practices used to meet the objectives above.	No change. Maintains existing road densities.	Constructs 0.7 mile of new roads and renovates 3.2 miles of existing roads. Following harvest, the new construction would be decommissioned. Renovations would improve drainage and road surface conditions, resulting in less road surface erosion into streams.	Constructs no new road. Renovations would be comparable to Alternative 2. Renovations improve drainage and road surface conditions, resulting in less road surface erosion into streams.

6.0 Compliance with Direction

The Upper Warnicke Timber Sale has been designed to conform to the following documents, which direct and provide the legal framework for management of BLM-managed lands within the Salem District:

- *Salem District Record of Decision and Resource Management Plan* (RMP), May 1995: The RMP has been reviewed and it has been determined that the Upper Warnicke Timber Sale conforms to the land use plan terms and conditions (i.e.: complies with management goals, objectives, direction, standards and guidelines) as required by 43 CFR 1610.5 (BLM Handbook H1790-1). Implementing the RMP is the reason for doing this project (RMP p.1-3);
- *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* (the Northwest Forest Plan, or NWFP), April 1994;
- *Record of Decision and Standards and Guidelines for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (S&M ROD, January 2001).

The analysis in the Upper Siletz River EA is site-specific and supplements analyses found in the *Salem District Proposed Resource Management Plan/Final Environmental Impact Statement* (RMP/FEIS), September 1994. The RMP/FEIS includes the analysis from the *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* (NWFP/FSEIS), February 1994. In addition, the EA is tiered to 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).

Survey and Manage Review

The Upper Warnicke Timber Sale is consistent with court orders relating to the Survey and Manage mitigation measure of the Northwest Forest Plan, as incorporated into the Salem District RMP.

On December 17, 2009, the U.S. District Court for the Western District of Washington issued an order in *Conservation Northwest, et al. v. Sherman, et al.*, No. 08-1067-JCC (W.D. Wash.), granting Plaintiffs' motion for partial summary judgment and finding NEPA violations in the *Final Supplemental to the 2004 Supplemental Environmental Impact Statement to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines* (USDA and USDI, June 2007). In response, parties entered into settlement negotiations in April 2010, and the Court filed approval of the resulting Settlement Agreement on July 6, 2011. Projects that are within the range of the northern spotted owl are subject to the survey and management standards and guidelines in the 2001 ROD, as modified by the 2011 Settlement Agreement.

The Upper Warnicke Timber Sale is consistent with the Salem District RMP/Forest Land and Resource Management Plan as amended by the 2001 *Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (2001 ROD), as modified by the 2011 Settlement Agreement.

The Upper Warnicke Timber Sale applies a 2006 Exemption from a stipulation entered by the court in litigation regarding Survey and Manage species and the 2004 Record of Decision related to Survey and Manage Mitigation Measure in *Northwest Ecosystem Alliance v. Rey*, No. 04-844-MJP (W.D. Wash., Oct. 10, 2006). Previously, in 2006, the District Court (Judge Pechman) invalidated the agencies' 2004 RODS eliminating Survey and Manage due to NEPA violations. Following the District Court's 2006 ruling, parties to the litigation entered into a stipulation exempting certain categories of activities from the Survey and Manage standards and guidelines, including both pre-disturbance surveys and known site management. Also known as the Pechman Exemptions, the Court's Order from October 11, 2006 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 of large wood, channel and floodplain reconstruction, or removal of channel diversions; and*
> *D. The portions of projects 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."*

Per the 2011 Settlement Agreement, the 2006 Pechman Exemptions remain in force:

> *"The provisions stipulated to by the parties and ordered by the court in Northwest Ecosystem Alliance v. Rey, No. 04-844-MJP (W.D. Wash. Oct. 10, 2006), shall remain in force. None of the following terms or conditions in this Settlement Agreement modifies in any way the October 2006 provisions stipulated to by the parties and ordered by the court in Northwest Ecosystem Alliance v. Rey, No. 04-844-MJP (W.D. Wash. Oct. 10, 2006)."*

The Upper Warnicke Timber Sale meets Pechman Exemption A, because it entails no regeneration harvest and entails thinning only in stands less than 80 years old (EA, pp. 6, 11).

Compliance with the Aquatic Conservation Strategy

This BLM reviewed the Proposed Action and No Action alternatives against the ACS objectives at the project scale. 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 (EA, pp. 88-91). The Proposed Actions do not retard or prevent the attainment of any of the nine ACS objectives.

Over the long-term, this project would aid in meeting ACS objectives by speeding the development of older forest characteristics in the Riparian Reserves, including increased large wood recruitment for

stream channels. In addition, more open stands would allow for the growth of important riparian species in the understory. The Upper Warnicke Timber Sale promotes stand diversity, provides more light to accelerate growth of conifers, and promotes species diversity. The creation of snags and CWD will restore watershed conditions by providing a gradual transition in structural characteristics of the treated stands that more closely resembles a late-seral forest (EA, pp. 88-91).

7.0 Public Involvement, Consultation, and Coordination

Public Scoping

A scoping letter, dated September 23, 2009, was sent to 22 potentially affected or interested individuals, groups, and agencies. Three responses were received during the scoping period. The BLM responded to scoping comments in section 8.2 of the EA.

EA and FONSI Comment Period and Comments

The BLM made the EA and FONSI available for public review from August 9, 2010 to September 7, 2010. One response was received during the EA comment period. Responses to the substantive public comments can be found in Appendix A of this Decision Record. The scoping and EA comment letters and emails are available for review at the Salem District BLM Office, 1717 Fabry Rd SE, Salem, Oregon.

Consultation and Coordination

Wildlife: United States Fish and Wildlife Service (USFWS)

To address concerns for potential effects to listed wildlife species, the proposed action was consulted upon with the USFWS, as required under Section 7 of the Endangered Species Act. Consultation for this proposed action was facilitated by its inclusion within a programmatic Biological Assessment (BA) that analyzed all projects that may modify the habitat of listed wildlife species on federal lands within the Northern Oregon Coast Range during fiscal years 2013 and 2014. The proposed action has been designed to incorporate all appropriate design standards set forth in the BA. This action was considered a “may affect, not likely to adversely affect” northern spotted owl dispersal habitat and northern spotted owl and marbled murrelet critical habitats. In the resulting Letter of Concurrence (FWS Reference Number 01EOFW00-2012-I-0124), after reviewing the effects of the proposed action on the spotted owl and marbled murrelet, the USFWS concurred with BLM that the activities, as proposed, are not likely to adversely affect spotted owls or marbled murrelets. This project area lies outside of the newly revised Critical Habitat that has recently been designated for the spotted owl (Federal Register, vol. 77, 71875-72068).

Fish: National Marine Fisheries Service (NMFS)

Consultation with National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) is required for all actions which ‘may affect’ ESA listed fish species and critical habitat. The area where the timber sale is located contains tributaries to streams and rivers where Upper Willamette River (UWR) steelhead trout, UWR Chinook salmon and Oregon

Coastal coho salmon are listed as threatened under the Endangered Species Act.

A determination has been made that the Upper Warnicke Timber Sale "may affect, but is not likely to adversely affect" (NLAA) UWR steelhead trout and its designated critical habitat. The determination is primarily due to the proposed actions timber hauling that is expected to have immeasurable negative effects on several habitat indicators. Informal consultation was therefore initiated with NMFS. The NMFS returned a Letter of Concurrence (LOC) on February 27, 2012 indicating that the proposed action is not likely to adversely affect listed fish. The receipt of the LOC from NMFS completed the consultation process. The LOC is on file at the Salem District office.

A determination has been made that this proposed project will have "no effect" to Spring Chinook salmon and Oregon chub. Generally, the "no effect" determination is based on the distance upstream of project activities (approximately 65 miles) from ESA listed Chinook critical habitat and historic habitat for Oregon chub.

Oregon Coast (OC) coho salmon do not migrate past Siletz Falls, approximately 12 miles downstream from the project area (ODFW 1997). No effects are anticipated to OC coho salmon habitat due to distance to occupied habitat.

Protection of Essential Fish Habitat (EFH) as described by the Magnuson/Stevens Fisheries Conservation and Management Act and consultation with NMFS is required for all projects which may adversely affect EFH of Chinook and coho salmon. The proposed project is not expected to adversely affect EFH due to distance of all activities associated with the project from occupied habitat. Consultation with NMFS on EFH is not required for this project.

8.0 Conclusion

Review of Finding of No Significant Impact

I have determined that change to the Finding of No Significant Impact (FONSI, March 2012) for the Upper Warnicke Timber Sale is not necessary because I have considered and concur with information in the EA and FONSI. I reviewed the comments on the EA and no information was provided in the comments that lead me to believe the analysis, data, or conclusions are in error or that the selected action needs to be altered. There are no significant new circumstances or facts relevant to the selected action or associated environmental effects that were not addressed in the EA.

Administrative Review Opportunities

The decision described in this document is a forest management decision and is subject to protest by the public. In accordance with Forest Management Regulations at 43 CFR 5003, protests of this decision may be made within 15 days of the publication of a notice of decision in a newspaper of general circulation. The notice of decision will be published in the Polk County Itemizer-Observer newspaper on April 24, 2013.

To protest this decision a person must submit a written protest to Rich Hatfield, Marys Peak Field Manager, 1717 Fabry Rd SE, Salem, Oregon 97306 by the close of business (4:30 p.m.) on May 8,

2013. A written protest electronically transmitted (e.g., email, facsimile, or social media) will not be accepted as a protest. A written protest must be on paper.

The protest must clearly and concisely state the reasons why the decision is believed to be in error. Any objection to the project design or my decision to go forward with this project must be filed at this time in accordance with the protest process outlined above. If a timely protest is received, this decision will be reconsidered in light of the statements of reasons for the protest and other pertinent information available and the BLM shall serve a decision in writing on the protesting party (43 CFR 5003.3).

Implementation

If no protest is received within 15 days after publication of this Decision Record (Upper Warnicke Timber Sale) this decision will become final. The planned sale date is May 22, 2013. For additional information, contact Stefanie Larew (503) 375-5601, Marys Peak Resource Area, Salem BLM, 1717 Fabry Road SE, Salem, Oregon 97306.

Approved by: Rich Hatfield — 4/22/13

Rich Hatfield
Marys Peak Field Manager

Date

Appendix A: Response to Public Comments Received on the Upper Siletz River Watershed Enhancement (EA# DOI-BLM-OR-S050-2009-0002)

The BLM received one comment letter during the comment period for the Upper Siletz River EA. These comments have been addressed in the Potter Elk and Fanno Lookout Decision Records, which the BLM issued in May 2012 and October 2012, respectively. The BLM has modified responses in this Decision Record to be specific to the Upper Warnicke Timber Sale.

On November 8, 2012, the BLM received a letter in response to the Fanno Lookout Timber Sale[4] Decision Record. While many of these comments are similar to those already provided on the Upper Siletz River EA, the BLM will respond to the substantive comments to the extent that they relate to the Upper Warnicke Timber Sale.

In some cases the comments have been quoted directly from commenter's responses and in some cases they have been paraphrased. Comments are in *italics*. The BLM response follows each comment.

Oregon Wild, Doug Heiken
Received September 3, 2010

1. **Comment:** *Avoid road construction because it detracts from habitat restoration objectives and can cause adverse effects on soil, water, weeds, wildlife habitat, and carbon. We prefer Alt 3 that includes less road construction and more untreated skips where many aspects of late successional forests can develop such as snags and dead wood.*

   Response: The IDT analyzed the potential impacts of road construction in the EA. The RMP (p. 62) provides direction to "develop and maintain a transportation system that serves the needs of users in an environmentally sound manner." The IDT analyzed the potential impacts of road construction on resources in the EA to ensure the proposed road construction was consistent with RMP guidance. Roads to be constructed would be located primarily on ridge tops, with no stream crossings, and would be decommissioned after use (EA section 2.3). The EA concluded that the construction and use of roads would be unlikely to negatively impact the aforementioned resources (EA, Chapter 3). The road construction, when completed according to Project Design Features and applicable BMPs, would allow more acres to be treated to meet project objectives under the Proposed Action alternative than under the Limited Road Construction alternative.

   Further, economic feasibility is one of the many factors taken into account when offering a timber sale. Road work costs, yarding costs and other incidental costs versus the acreage and volume taken are calculated and an IDT of specialists come to a consensus on what alternative to pursue for analysis based on potential impacts to all resources.

   The Marys Peak Resource Area interdisciplinary team considered many variables, including the comparison of road work between alternatives. The decision maker determined that Alternative 2 (proposed action) would best meet the purpose and need for the project.

[4] Fanno Lookout Timber Sale was the second of three timber sales analyzed in the Upper Siletz River Watershed Enhancement EA (DOI-BLM-OR-S050-2009-0002-EA). It sold in November 2012.

2. **Comment:** *In regards to dead wood recruitment, BLM must consider more ways of mitigating the adverse effects of logging on dead wood recruitment planning more untreated skips within stands.*

   Response: Thinning dense stands would capture some density-dependent suppression mortality; however, the recruitment of dead wood within treated stands and adjacent untreated habitat (approximately 746 acres of BLM in sections 14 and 15) is an ongoing and age-independent natural process involving biotic and abiotic forces. Biotic mechanisms, in addition to density-dependent suppression mortality, include disease, insects, and animal damage. Abiotic processes include fire, wind, ice glazing, snow loading, flooding, landslides, debris torrents, and crushing (trees falling on trees). Abiotic processes, unrestricted by tree densities, provide a constant supply of dead wood by damaging or destroying individual trees, patches of trees within stands, stands within watersheds, and entire watersheds themselves (Bauhus et al., 2009).

   Damage, the presence of dead wood in live trees, is not uncommon; damage to the bole and/or branches can be found throughout all vertical layers within any stand. Tree mortality, like damage, can be a slow process taking years, or it can happen very quickly. In a study of early-seral conifer stands (14-38 years) in western Oregon, Lutz and Halpern (2006) examined 22 years of tree growth and mortality data and found that density-dependent suppression mortality in Douglas-fir killed more than three times as many trees as abiotic mortality, however, the total mass of dead wood created by abiotic agents was more than four times greater than the total mass of dead fir wood created by density-dependent suppression mortality regardless of stand age. The abiotic process plays a far greater role in dead wood recruitment (both quantity and quality of dead wood) and mitigates the loss of density-dependent dead wood at all landscape levels.

   Further, the Upper Warnicke Timber Sale treats only 214 acres of the 960 BLM-managed acres in sections 14 and 15. As shown on the Selected Action maps, the units are fragmented in a manner that provides several untreated areas within the project area.

3. **Comment:** *Conduct a stand simulation model to show whether the untreated areas are sufficient to recruit snags that will mitigate for the loss of large tree recruitment in the thinned areas and the landscape as a whole will meet DecAID 50-80% tolerance targets. The EA over-emphasizes on the "quality" of future snags and LWD while virtually ignoring the "quantity" of future recruitment.*

   Response: There would not be a significant loss of large tree recruitment in the thinned stands because the great majority of large trees become snags through abiotic processes (see response to Comment 2) and few large snags are the result of density-dependent suppression mortality. All of the 12,215 acres of BLM-managed lands in the Upper Siletz River watershed are being managed for LSOG (late-seral/old-growth) habitat. Once these stands reach 80 (for LSR) or 110 (for AMR) years old they are left to develop naturally, where ongoing biotic and abiotic processes create an abundance of dead wood. There are 2,325 acres of LSOG and an additional 1,886 acres (or 34% of all BLM acres in the watershed) of no-entry riparian buffers (SPZs) that are currently producing large snags through natural processes which would meet the DecAID targets and mitigate for the loss of any future density-dependent suppression mortality snags captured through thinning 214 acres (or less than 2% of all BLM acres in the watershed).

4. **Comment:** *The EA says that "several areas would remain untreated" but the EA never discloses the vegetation condition in those untreated areas or what their future management might be. Thinning to restore late successional habitat characteristics must include a mixed mosaic of treated and untreated areas that provide: in thinned areas (larger trees, vegetation diversity) and in unthinned areas (dense cover and dead wood). By focusing almost exclusively on the thinned part of the equation it is impossible to know if this is a sound restoration effort because it looks like too much of the area is being thinned and not enough left unthinned for dead wood habitat development.*

Response: Of the 960 acres of BLM-managed lands in sections 14 and 15, fewer than 214 acres will be actively managed under the Upper Warnicke Timber Sale. The sections are largely dominated by Douglas-fir stands between 45 and 65 years of age, but there is variability in stocking levels, species mix (some areas had a substantial hardwood component), and site conditions. Areas were removed from consideration for inclusion within conventional timber sales for various reasons. Areas were removed due to logging infeasibility or other resource concerns. No other stand management activities are currently planned for the project area.

As stated above, the Upper Warnicke Timber Sale will treat approximately 214 acres of mid-seral habitat in Sections 14 and 15 and is part of a much larger watershed enhancement action in the Upper Siletz River basin. All three projects within the proposed action are designed to accelerate the development of late-seral forest conditions within existing managed mid-seral forests. The action area consists of the 12,215 acres of BLM-managed lands in the watershed. The current vegetation conditions are described in the table below.

Table. Current acres of terrestrial wildlife habitat type at the landscape level (Upper Siletz River Watershed)

Ownership	Early-seral Habitat (0-39 yrs)	Mid-seral Habitat (40-79 yrs)	Late-seral Habitat (80-199 yrs)	Old-growth Habitat (200+ yrs)	Hardwoods & Nonforest Habitats	Stream Protection Zone[1]	Total
BLM	767	7,049	1,245	1,080	188	1,886	12,215

[1]Represents the acres within a no-entry buffer on both sides of perennial streams; includes all seral/habitat types

The public lands in the Upper Siletz River watershed fall within Late-Successional Reserve (LSR), Adaptive Management Area (AMA), and Riparian Reserve (RR) land use allocations. The Upper Warnicke Timber Sale consists of mid-seral forest stands in the AMR and RR. The primary management goal within these LUAs is to create, restore, and maintain late-seral/old-growth habitat characteristics for all species dependent upon, or associated with, these types of forest conditions. Therefore, any early and mid-seral habitats (7,816 acres) would be treated to enhance future late-seral/old-growth conditions on those lands.

5. **Comment:** *Don't do 5 acre patch-cuts or mini-clearcuts, instead do heavy thinning in 3 acre patches. Be sure to retain structure in big game forage areas. Don't manage for single-resources like big game. Don't "permanently maintain" these early seral patches. Extend the life of the heavily thinned foraging areas by not replanting them with trees. The 5 acres "gaps" should retain far more snags both in the central clearcut and in the surrounding heavily thinned area.*

Response: Such patch cuts will not occur within the Upper Warnicke Timber Sale. Small gaps, less than 0.5 acres, may be created when thinning within areas inflicted with laminated root rot. The silvicultural prescription (p. 10) states: "if treatment creates gaps in the canopy larger than 0.5 acre resistant or tolerant species may be planted in the gaps."

6. **Comment:** *Don't "capture mortality" by logging in riparian reserves which need more wood to meet ACS objectives, not less. BLM needs to carefully explain the rationale for logging in riparian reserves and show that there are aquatic benefits that outweigh these adverse effects of recruitment of dead wood. The adverse effects of logging in riparian reserves can be mitigated by retaining more trees in riparian reserves with wider no-treat buffers and/or prescribing thinning that retains more trees per acre.*

   Response: The no-harvest buffers provide places where competition-related mortality will continue and natural LWD recruitment processes will be maintained. The effects on wood recruitment of thinning adjacent to no-treatment zones and compliance with ACS objectives were discussed in the Upper Siletz River EA (sections 3.1.1, 3.1.5, 5.0). The project area streams are primarily small first and second order streams. Channels widths are typically small for these stream types. The project area channels are buffered with at least 55 to 60 feet no-treatment zones where the existing stand will remain untreated. Wood recruitment studies conducted in the Pacific Northwest have shown the majority of woody debris recruitment occurs within 18 to 20 meters (59 to 65 feet) of the stream edge (McDade et al. 1990, Van Sickle and Gregory 1990, Meleason et al. 2002). The SPZ width, which accounts for at least 85 percent of this woody debris recruitment zone, is anticipated to maintain wood recruitment rates (Upper Siletz River EA, section 3.1.5.2). Larger pieces of coarse wood located further away from the stream (greater than 55 to 60 feet) that may be impacted due to harvest were addressed in the EA and are further discussed below.

   Thinning in the riparian treatment areas is anticipated to increase the average growth of the remaining trees between 52 to 85 percent over 30 years compared to not treating the stands (Snook 2010, Roux 2010). Larger diameter wood would begin to be recruited from farther up the slopes as the treated stands reach greater heights. Thus, wood with a larger range of sizes would potentially be recruited into streams over the long-term in treated stands. As short-term recruitment of the existing CWD is expected to be maintained by SPZs, the proposed actions are not expected to cause short-term changes to fish habitat at the site or downstream. In the long-term, the increase in the size of trees in the RR LUA could benefit LWD recruitment to the stream channel, thus potentially improving the quality and complexity of aquatic habitat adjacent to the treatment areas in the future.

7. **Comment:** *Think not only about existing snags but more importantly about the processes that recruit snags, including: a large pool of green trees from which to recruit snags and the existence of competition and other mortality processes. This is especially critical in previously logged uplands that are already short of snags and in riparian areas where recruitment of large wood is important to stream structure. It is often asserted that thinning grows big trees faster and therefore results in more rapid recruitment of large snags, but FVS and other tools show this NOT to be true.*

   Response: Thinning dense stands would capture and remove some density-dependent

suppression mortality that could be recruited to streams. However, as described in the BLM response above, this impact is largely mitigated by the no-harvest buffers. The effects to recruitment of pool forming wood described by Beechie et al. (2000) should be considered carefully because they did not include a provision for no-harvest buffers in their modeling. Recruitment of wood from the untreated buffers as a result of both biotic and abiotic forces will continue to be an ongoing process.

Density-dependent suppression mortality is just one of the biotic mechanisms that can kill trees. Other biotic mechanisms include disease, insects, and animal damage. Abiotic processes such as fire, wind, ice and snow loading, breakage as a result of falling trees, landslides, and tree fall as a result of channel migration and flooding are density-independent processes that provide a constant supply of wood to streams. While density-dependent mortality is a dominant factor in young stands, abiotic factors become more important agents of mortality as stands mature (Franklin et al. 2002) and fewer large snags are the result of density-dependent suppression mortality. Most wood recruitment models, including Beechie et al. (2000), include only one process, density-dependent suppression mortality, because of the difficulties in modeling stochastic events such as disease, fire, and blowdown. The wood delivery model developed by BLM for its WOPR analysis modeled suppression mortality along with channel migration and landslide processes and incorporated 30 to 60-foot no-harvest buffers along streams. This modeling exercise found little or no difference in the recruitment of either functional wood (as described by Beechie et al., 2000) or large key pieces of wood as a result of thinning in riparian areas adjacent to the no-harvest buffers.

8. **Comment:** *Use projects as an opportunity to learn by conducting monitoring and research on the effects of thinning. There are many information gaps that need filling. Every project should generate useful information to inform future projects.*

   Response: Post-implementation monitoring of project work is an important link in an adaptive management strategy. Specific projects are identified to review how well the implementation occurred and whether the effects were consistent with those identified in the Environmental Assessment. In addition, the Marys Peak Resource Area utilizes information from the Density Management Study conducted by Oregon State University College of Forestry, Pacific Northwest Research Station, public involvement, and other relevant research publications to inform and develop future projects.

9. **Comment:** *Consider NOAA/NMFS July 23, 2010 Position Paper to Support the February 23, 2010 Elevation of Two Northwest Forest Plan Issues to the Regional Executives.*

   Response: We are aware of the referenced document and agree that wood of all sizes is ecologically important for the continued proper functioning of aquatic systems. The BLM, USFS, and NMFS currently disagree on the identification and interpretation of the best available science to guide riparian management and for determining the potential effects of riparian thinning on ESA-listed salmonids. The document was developed at the request of the regional executive leadership consistent with the Streamlined Consultation Procedures for Section 7 of the Endangered Species Act (1999) guidance on dispute resolution. The USFWS, NMFS, FS, and BLM regional leadership is currently working together to develop a process for

reviewing the pertinent science in an effort to reach consensus on the identification and interpretation of the best available science to guide riparian management.

Treatments in Riparian Reserves are designed to improve or maintain aquatic conditions, including those functions provided by wood recruited to the stream channel. As described in the BLM response above (Response to Comment 6, see also EA pp. 64-65), impacts to large wood recruitment have been effectively mitigated by implementing no-harvest buffers. In the short-term, little change is expected in the recruitment of all sizes of LWD to streams in the project area because the majority of the wood recruitment is expected to come from the no-harvest buffers and nearby untreated Riparian Reserves where natural processes will continue to provide wood in a range of sizes. In the long-term, smaller sized wood will continue to be recruited from stands adjacent to the streams and trees within the untreated buffers will continue to grow and provide a source for larger sized pieces of wood. The light to moderate riparian thinning outside of the buffers is designed to promote habitat for a variety of riparian-dependent species, as well as for aquatic species. While thinning will remove some of the density-dependent suppression mortality it will also accelerate the development of larger diameter trees over the following 20-30 years, which will then be available for recruitment to nearby streams when stochastic events occur. The accelerated recruitment of large wood, which is more stable and long lasting than small wood pieces (Spence et al., 1996; Harmon et al., 1986; McHenry et al., 1998; Rosenfeld and Huato, 2003), as a critical need for aquatic ecosystems in the Northwest (FEMAT, 1993).

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10. Comment: *Our primary concern is that BLM is focusing too much on the live tree component of the stands that it manages.*

Response: The BLM designed the Upper Warnicke Timber Sale to meet a wide-range of objectives outlined in the Salem District RMP, watershed analysis, and Late-Successional Reserve Assessment. Characteristics of a functional late-successional forest include large diameter trees and snags, vertical and horizontal diversity, multiple canopy layers, abundant coarse and large woody debris, and species diversity.

The BLM recognizes that meeting LSR objectives requires more than simply managing for large trees. The Purpose and Need for the project (EA, pp. 8-9) and the silvicultural prescription (pp. 9-10) reflect the suite of objectives to be attained from active management at Upper Warnicke. Specific objectives of the project include, but are not limited to:

- Accelerate the development of late-successional characteristics, such as structural and species diversity, a component of large snags and down logs, large conifer trees with large limbs and deep, wide crowns, trees with damage and decay, gaps in the canopy, variable tree densities, and variable levels of understory development.

- Maintain existing variability in stand density by removing a proportion of the basal area, so that areas of lower density will be thinned to a relatively low density, and areas of

higher density will remain above average density. Create variability by leaving a range of residual densities and leaving small gaps and clumps.

- Maintain the growth and wide crown structure of larger, open-grown "wolf" (large, open-grown) trees by removing nearly all competition from around them.

- Accelerate tree growth to restore large conifers in Riparian Reserves and improve habitat for populations of native riparian-associated species.

The EA adequately analyzed the short-term and long-term effects that the project would have on CWD and LWD and found that project design features and no-harvest buffers would be sufficient to provide for continued wood recruitment.

11. Comment: *The Upper Siletz EA failed to acknowledge the adverse effects of tree removal on future recruitment of dead wood…BLM ignores the fact that logging removes trees and results in fewer trees and less total wood volume available for future recruitment. The BLM failed to clearly disclose the trade-off and provide complete information on the volume of wood available for dead wood recruitment with and without logging.*

Response: The BLM adequately analyzed, compared, and disclosed the anticipated impacts of the no action and action alternatives in the EA (pp. 21-23). The BLM found that the proposed action would not adversely affect future recruitment of dead wood. As described in responses to comments above, the no-harvest buffers would be sufficient to provide continued natural processes that contribute CWD and LWD. Further, project design features provide for flexible future management to remedy potential deficiencies of dead and down wood.

The BLM provided in the EA (p. 37) size and quantity metrics of CWD for the Alternatives. Within the No Action alternative, the EA states the "quantity of mortality would be much greater than if the stands were thinned, but dead trees would be smaller in size" (p. 22). The EA acknowledged that thinning would reduce the recruitment rate of small sized CWD, but a trade-off would be immediate creation of CWD of desirable size.

The EA continues (p. 37): "without treatment, natural disturbance agents such as disease, insects, and wind would create stand structural diversity and contribute to late-successional development. The *timing and intensity of these conditions are unknown*" (emphasis added). The No Action alternative does not meet the objectives for speeding development of late-successional forest habitat.

To offset a potential future deficiency in CWD, the BLM will monitor stand conditions and assess the need for future treatments (EA, pp. 16, 49): "If natural processes have not provided at least 2 snags per acre and 2 down trees per acre for CWD within ten years of treatment within thinning treatments, create 4 snags per acres at least 20 inches in diameter by base-girdling leave trees."