

**ENVIRONMENTAL ASSESSMENT and FINDING OF NO SIGNIFICANT IMPACT**

**B cubed Thinning**

Environmental Assessment Number OR080-04-06  
Tract # 05-501

June 18, 2004

United States Department of the Interior  
Bureau of Land Management, Oregon State Office  
Salem District, Cascades Resource Area  
Clackamas County, Oregon

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Abstract: This environmental assessment discloses the predicted environmental effects of a proposal to thin approximately 700 acres on BLM land located in Township 7 South, Range 3 East, Sections 1, 2, 3 and 15, Willamette Meridian; and within the Molalla Watershed of Clackamas County.

# FINDING OF NO SIGNIFICANT IMPACT

## Introduction

The Bureau of Land Management (BLM) has conducted an environmental analysis (Environmental Assessment Number OR080-04-06) for a proposal to conduct commercial thinning on 85 to 110-year-old stands which include approximately 50 acres of Riparian Reserve land use allocation (EA p. 1). The project area is located on BLM lands within Township 7 South, Range 3 West, Sections 1, 2, 3 & 15, Willamette Meridian.

The B cubed Thinning Environmental Assessment (EA) documents the environmental analysis of the proposed project. The EA is attached to and incorporated by reference in this Finding of No Significant Impact (FONSI) determination. The following documents direct and provide the legal framework for management of BLM lands within the Salem District: **1/ Salem District Record of Decision and Resource Management Plan**, May 1995 (RMP), as amended; **2/ 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 (NWFP); **3/ Molalla River Watershed Analysis**, May 1999 (MRWA); **4/ 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 proposed action is designed to comply with the management goals, objectives, and direction (e.g. standards and guidelines) of the above documents (EA p. 1).

The EA and FONSI will be made available for public review from June 23, 2004 to July 23, 2004. The notice for public comment will be published in a legal notice by the *Molalla Pioneer* newspaper; and posted on the Internet at <http://www.or.blm.gov/salem/html/planning/index.htm> under Environmental Assessments. Comments received by the Cascades Resource Area of the Salem District Office, 1717 Fabry Road SE, Salem, Oregon 97306, on or before July 23, 2004 will be considered in making the final decisions for this project.

## Finding of No Significant Impact

Based upon review of the 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 environmental effects meet the definition of significance in context or intensity as defined in 40 CFR 1508.27. Therefore, an environmental impact statement is not needed. This finding is based on the following discussion:

**Context:** Potential effects resulting from the implementation of the proposed action have been analyzed within the context of the Molalla River 5th-field Watershed and the project area boundaries. The proposed action would occur on approximately 700 acres of BLM land, encompassing less than 0.4 percent of the Molalla River Watershed [40 CFR 1508.27(a)].

***Intensity:***

1. This project is unlikely to have any significant impacts on the affected elements of the environment. The affected elements for this project are Hydrology, Soils, Wildlife, Air Quality/Fuels Management, Botany, Fisheries and Aquatic Habitat, and Recreation and Rural Interface (EA pp. 15, 17). The following is a summary of the design features (EA pp.6- 9) that would reduce the risk of affecting the above resources:
  - Retaining all coarse woody debris and snags, to the greatest extent possible, for wildlife habitat (EA p. 9);
  - Operational restrictions for wildlife (EA p. 7)
  - Restricting ground-based yarding, road construction, and all hauling operations during wet conditions to avoid runoff and sedimentation (EA p. 6 - 7 );
  - The proposed action and associated connected actions would utilize the Best Management Practices (RMP Appendix C, pp. C-1 to C-9) (EA p. 6);
  - Ground-based logging (skidder, harvester/forwarder, shovel, etc.): All multiple pass trails (skid trails) would follow existing skid trails (from logging in the 1970s) (RMP p. C-2). If mechanized harvesting equipment is used, felling trails would be spaced 75 ft. apart, with on-site limbing slash used on the trail to create a slash mat for travel (EA p. 8) to reduce soil compaction; Equipment with lateral yarding capabilities would be used for skyline yarding;
  - In order to prevent road sediment from entering stream channels as a result of hauling, vegetation in roadside ditches would be left intact, and hauling would be suspended when there is an elevated risk from water and sediment flowing in roadside ditches. (EA p. 8);
  - A “No Treatment” buffer would be established on all streams to avoid direct impacts to biotic riparian zones (EA p.4) and to maintain canopy cover, water quality, and channel morphology.

As a result of implementing the project design features (EA pp. 6- 9), any potential effects to the affected resources are anticipated to be site-specific and/or not measurable (i.e. undetectable over the watershed, downstream, and/or outside of the project area) [40 CFR 1508.27(b) (1)], (EA pp. 17 - 29, EA Appendix 1 and 2).
2. This project would not affect:
  - a. Public health or safety [40 CFR 1508.27(b)(2)];
  - b. 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 area (EA p. 15);
  - c. 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 p. 15).
3. This 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. This project does not set a precedent for future actions that may have significant effects, nor does it represent a decision in principle about a future consideration [40 CFR 1508.27(b) (6)].
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) and scale (project area is less than 2% of the total 5th-field watershed

6. This project is not expected to adversely affect endangered or threatened species or habitat under the Endangered Species Act (ESA) of 1973 [40 CFR 1508.27(b) (9)].
  - a. **Wildlife:** There is no northern spotted owl critical habitat in or near the project area. Consultation will be included in the programmatic consultation process on FY 2005 and 2006 habitat modification projects in the Willamette Province. The final *Biological Assessment on Fiscal Year 2005-2006 projects within the Willamette Province which would modify the habitats of the bald eagle and the northern spotted owl* (BA) is scheduled for submission in July 2004. The Biological Opinion associated with these projects is expected in October 2004. According to the effect determination guidelines in the draft BA, these projects "may affect, but are not likely to adversely affect" the spotted owl due to the modification of dispersal habitat.
  - b. **Fish:** A determination has been made that this project would have "no effect" on Upper Willamette River steelhead trout or Upper Willamette River chinook salmon because of dry conditions hauling on non-paved roads, limited harvest activity within the Riparian Reserve LUA (approximately 50 acres), with less than three acres within 100 feet of a stream channel; slopes of less than 35% throughout most of the project area; most of project area is approximately 3 miles upstream of ESA listed fish habitat, except the distance from the stand in section 15 downstream to ESA listed fish habitat is only approximately 0.25 mile, but the only perennial stream channel adjacent to this stand would have a full site potential tree height buffer. In addition, the project is also expected to have 'no effect' on Essential Fish Habitat as defined in the Magnuson-Stevens Act.
  
7. This 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)] (EA p.1-2).

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6-18-04  
Date

Reviewed by: Carolyn Sands  
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6/18/04  
Date

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6/18/04  
Date

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## 1.0 INTRODUCTION/PURPOSE AND NEED

### 1.1 Project Area Location

The project is located approximately 10-15 miles east of Molalla, Oregon, in Clackamas County, Sections 1, 2, 3, &15, Township 7 South, Range 3 East, Willamette Meridian (WM). This environmental assessment discloses the predicted environmental effects of a proposal to thin approximately 700 acres on forested land managed by the Cascades Resource Area, Salem District, Bureau of Land Management (**BLM**). The project area lies along the north ridge above the main stem of the Molalla River (Pinerock, Bear Creek and Horse Creek) with one treatment area (sec. 15) located downslope within a half-mile of the River.

### 1.2 Conformance with Land Use Plan, Statutes, Regulations, and other Plans

This project is subject to the following documents, which direct and provide the legal framework for management of BLM lands within Cascades Resource Area:

1. *Salem District Record of Decision and Resource Management Plan*, May 1995 (RMP)<sup>1</sup>  
This plan has been reviewed and it has been determined that the proposed action conforms with the land use plan terms and conditions (e.g. complies with management goals, objectives, direction, standards and guidelines) as required by 43 CFR 1610.5 (BLM Handbook H1790-1, Illustration 3). Implementing the RMP is the reason for doing this project. The proposed project is located within the General Forest Management Area (**GFMA**) portion of the Matrix land use allocation (**LUA**) and in the Riparian Reserve (**RR**) LUA, as identified on page 8 of the RMP. RMP references for this Environmental Assessment (**EA**) are described in section 6.1 - Table 7: Summary of RMP References.

The project is not within the following land use allocations - Late Successional Reserves, Adaptive Management Areas, Congressionally Reserved Areas, or Administratively Withdrawn Areas, so management direction specific to these allocations do not apply.

In addition, Pages 1-5 of the RMP describe the purpose and need of the RMP, the relationship of the RMP to BLM policies, programs, and other plans; and the vision and strategy of the RMP. All of this information was incorporated into the design of this project.

2. *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 (**NWFP**); The relationship between the NWFP and the RMP is described on page 1 of the RMP and RMP Appendix A-2 p. A-2-1.

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<sup>1</sup> Individual RMP references can be found in the applicable section of this document.

3. *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 (**SSSP**). This document amends that portion of the RMP addressing Survey and Manage species (p. 30-32). Since this project was designed prior to the finalization of this decision, this project follows the direction described on page 9 of the SSSP. The project fully complies with the current Survey and Manage Mitigation Measure Standards and Guidelines and existing Special Status species policies.

This EA incorporates the analysis and tiers, where applicable, to the following documents: 1/ *Salem District Proposed Resource Management Plan/Final Environmental Impact Statement*, September 1994 (**RMP/FEIS**), 2/ *Supplemental Environmental Impact Statement on Management of Habitat of Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl (NWFP/SEIS)*, February 1994; and 3/ *Supplemental Environmental Impact Statement to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines*, January 2004 (**SSSP/SEIS**). The discussion in this EA is site-specific and supplements analyses found in these documents.

In addition, the *Molalla River Watershed Analysis*, May 1999 (**MRWA**) provided additional guidance in the design of this project. Although some of the timber stands have culminated based on their age and recent growth rate, thinning was selected for the following reasons: the MRWA (p. 7) recommends federal lands be managed by creating small and limited openings and conducting selective harvests with thinning from below for the first decade which leaves future options open for forest management.

These documents are available for review in the Salem District Office. Additional information about the proposed B cubed project is available in the B cubed Timber Sale NEPA/EA Analysis File (**B3AF**), also available at the Salem District Office.

### 1.3 Purpose of and Need for Action

For this project, treatment is proposed only for stands that can be harvested using conventional logging systems. The following describe the purpose of and the need for action:

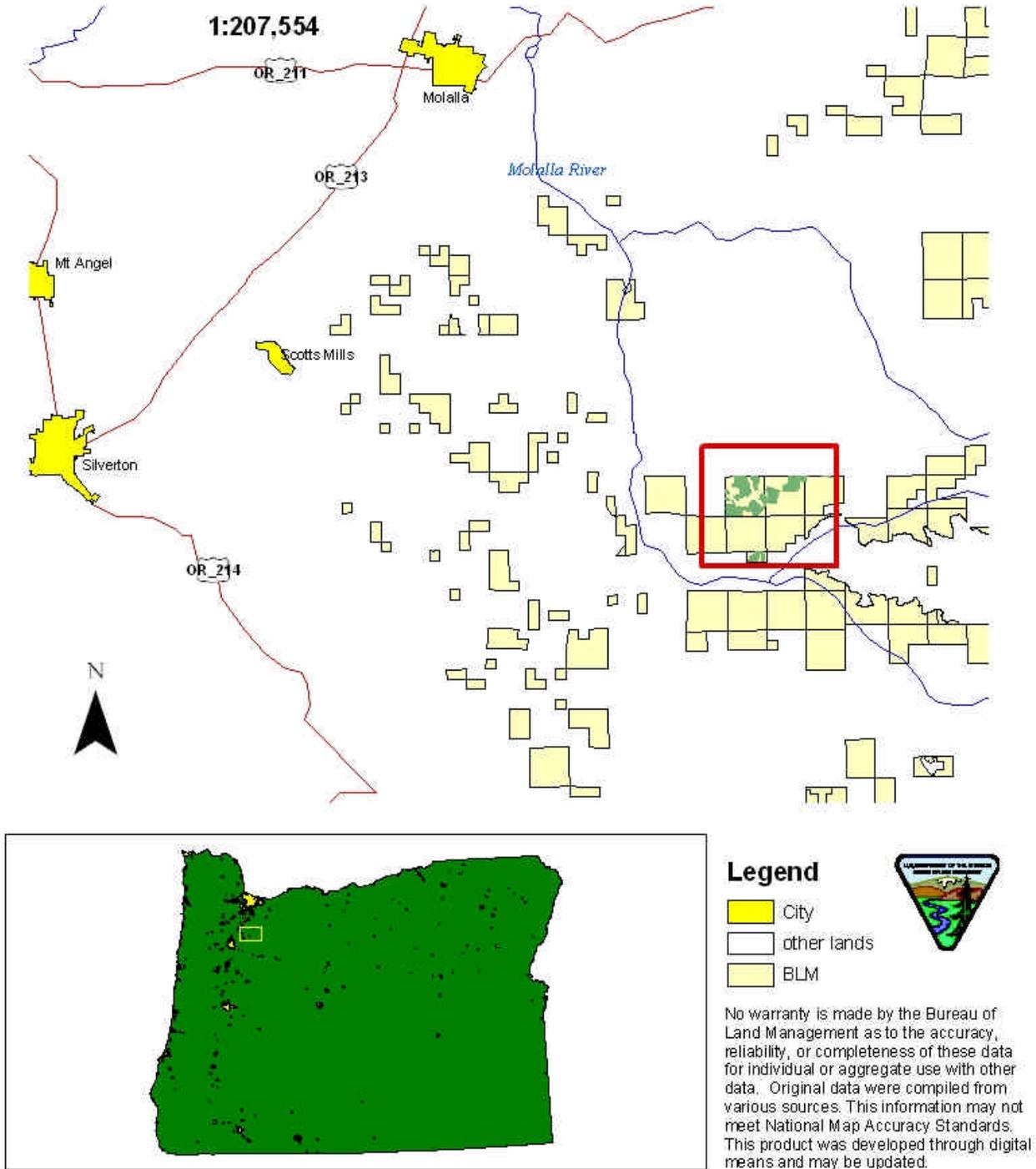
- **Matrix Land Use Allocation (LUA) (RMP pp. 20-22):** To manage developing timber stands in the Matrix LUA so that:
  - A marketable timber sale can be offered that will contribute to a sustainable supply of timber for local, regional, and national economies and contribute to community stability (RMP pp. 20), as reflected in the Salem District allowable sale quantity (ASQ) (RMP, pp. 1, 46, 47).
  - A desirable balance can be achieved between wood volume production, quality of wood, and timber value at harvest (RMP p. D-3);
  - A healthy forest ecosystem can be maintained with habitat to support plant and animal populations and protect riparian areas and water resources (RMP p. 1, 20);

- **Riparian Reserve LUA (RMP pp. 9-15)** To manage some dense sites within the stands of the Riparian Reserve LUA so that:
  - Growth of trees can be accelerated to restore large conifers to Riparian Reserves (RMP p. 7);
  - Habitat (e.g. coarse woody debris, snag habitat, in-stream large wood) for populations of native riparian-dependent plants, invertebrates, and vertebrate species can be enhanced or restored (RMP p. 7);
  - Structural and spatial stand diversity can be improved on a site-specific and landscape level in the long term (RMP p. 11, 26, D-6).
  
- **Roads:** To maintain and develop a safe, efficient and environmentally sound road system (RMP p. 62) that:
  - Provides appropriate access for timber harvest and silvicultural treatments used to meet the objectives above;
  - Reduces maintenance needs associated with the existing roads within the project area by improvements to stream crossings (RMP p. 11).

## **1.4 Decision to be Made**

The Cascades Resource Area Field Manager is the official responsible for deciding whether or not to prepare an environmental impact statement, and whether to approve variable thinning on 700 acres as proposed, not at all, or to some other extent.

# B cubed Project Area Location Map



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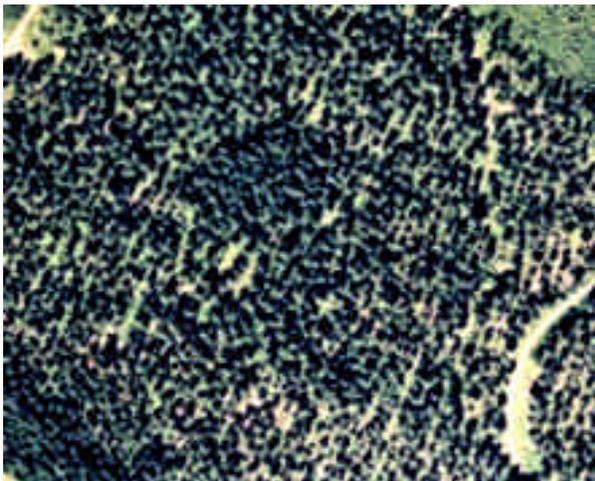
## 2.0 ALTERNATIVES

### 2.1 Alternative Development

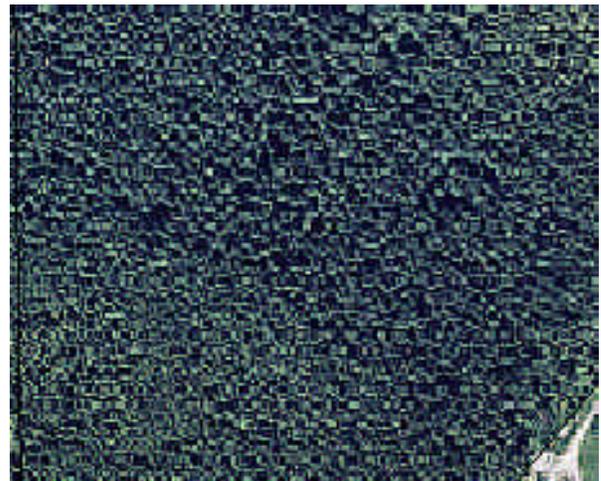
Pursuant to Section 102 (2) (E) of NEPA (National Environmental Policy Act of 1969, as amended), Federal agencies shall “Study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” No unresolved conflicts concerning alternative uses of available resources (section 102(2) (E) of NEPA) were identified. No alternatives were identified that would meet the purpose and need of the project and have meaningful differences in environmental effects from the proposed action. Therefore, this EA will analyze the effects of the “proposed action” and the “no action alternative.”

### 2.2 Proposed Action

The proposed action is to thin 700 acres of previously managed mixed-conifer stands (85 to 110 years old) to variable tree densities within each stand. The proposed action would thin approximately 650 acres within the General Forest Management (GFMA) LUA and 50 acres within the Riparian Reserve (RR) LUA. Within the stands areas would be left unthinned and up to 20 small openings (canopy gaps of one acre or less in size) would be created to enhance the variability. After thinning, the timber stand would retain an average of approximately 50 to 75 trees per acre and an average canopy closure of at least 40 percent.



**Photo 1.** Aerial photo of stand that was thinned to 50 trees per acre.



**Photo 2.** Aerial photo of stand in Section 3.

Timber harvest would be done by utilizing a ground-based logging system on approximately 80 percent of the area and a skyline yarding system on the remaining 20 percent. Areas with rock outcrops; small wet spots that are located during final field verification; and any areas where logging would be infeasible using the design features described below would be excluded.

### **2.2.1 Connected Actions**

#### **1. Road Work:**

- A 500-foot extension of road 7-3E-3 would be constructed.
- Two thousand eight hundred feet of new road would be constructed to access the treatment area in section 15. This road would be left in place and seeded after use.
- Road 7-3E-15.4 would be spot-rocked, and drivable waterbars would be installed to move ditch and rut water off the road before the road enters riparian reserves. The road would be opened and gated prior to the sale and closed again to vehicles after the sale. After the sale, three culverts would be removed, and the crossings would be armored with rock to minimize the need for future maintenance.

#### **2. Fuels Treatments:**

- Slash will be piled and burned on landings. Debris accumulations in the openings created within the stands would be mechanically or manually piled, covered and burned (RMP p. 65).

#### **3. Skid Trail Construction:**

- Although there are numerous existing skid trails which would be re-used to access the stands for ground-based equipment (RMP p. C-2), additional skid trails may be required.

#### **4. Snag/CWD Creation:**

- Up to two snags per acre will be created within both GFMA and Riparian Reserves by top and/or bottom-girdling (RMP p. 21).
- One 24-inch (or greater) tree per acre would be felled if needed to meet coarse woody debris (CWD) requirements (RMP p. 21).

### **2.2.2 Project Design Features**

The following is a summary of the design features that reduce the risk of effects to the affected elements of the environment described in EA section 3.1. The proposed activities would follow the standards and guidelines described in the RMP from the pages specified in Table 6, p. 33. Design features are organized by actions.

#### **1. General**

Thinning treatments would be variable within each stand. This would be accomplished by leaving small areas unthinned and creating up to 20 small openings of one acre or less. In the previously thinned areas (Sections 2 and 3), stands would be thinned to an average of approximately 50 trees per acre. In Sections 1 and 15, previously unthinned stands would be thinned from below to remove suppressed, intermediate, and some co-dominant trees. These

stands would be thinned down to an average of 60 to 70 leave trees per acre. The best formed trees with well-developed crowns would be left.

The proposed action and associated connected actions would utilize the Best Management Practices (BMPs) (RMP Appendix C, pp. C-1 to C-9) required by the Federal Clean Water Act (as amended by the Water Quality Act of 1987) to reduce non-point source pollution to the maximum extent practicable.

**Operational Periods**

- Operations would be restricted during:
  - Nesting season for spotted owls (March 01 - July 15 unless surveys confirm that no owls are present in the affected area). No disturbance-type operations would be allowed. (Wildlife, p. 6, RMP p. 32)
  - The spring growing season, when bark is easily damaged (typically May 01- June 30). No falling or yarding operations which could damage residual trees would be allowed. (Silviculture Report)
  - Wet conditions: Ground based operations (i.e. skidding, road construction, road improvements), would not be allowed when soil moisture is high (generally November through May) since these operations would cause compaction and potentially increase erosion and sedimentation (RMP pp. 23, 24, C-2).

In addition, operations may be shut down or restricted at any time if plant or animal populations that need protection (RMP p.29) are found, or cultural resources that need protection (RMP p. 36), or in response to new legal requirements are implemented or enacted (Standard, required BLM timber sale contract provisions).

**Table 1: Typical seasonal restrictions calendar**

<b>Restriction</b>	<b>Reason</b>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Most logging operations	Owl nesting												
Falling and yarding	Bark slippage												
Fire precautions	Fire danger												
Tractor operations	Soil damage												
Key	Operations generally allowed.	Operations typically dependent on conditions.						Operations generally not allowed.					



**Photo 3. Road Crossing**

## **2. Roads, Landings, and Hauling (RMP pp. 62-64, C-2)**

- A new road will be constructed to access the stand in section 15. This will include a temporary crossing of an ephemeral\* stream (see photo 3) in the stand by using wood chipped on-site or other organic material. This road would be left in place after use and the material used for the crossing removed without soil disturbance. Construction stabilization would include: shaping the road surface for proper drainage to forested slopes outside Riparian Reserves; seeding the

road with native species; and blocking the road to other-than-administrative use.

- Reopened skid trails would be restored upon completion of the project. Restoration would include blocking, re-vegetation with native species, and monitoring and treatments for invasive plants.
- In order to prevent road sediment from entering stream channels as a result of hauling, vegetation in roadside ditches would be left intact, and hauling would be suspended when there is an elevated risk from water and sediment flowing in roadside ditches.

## **3. Falling, Skidding and Yarding (RMP pp. 23, 24, C-2)**

- Directional falling would be used to prevent residual tree damage and to protect existing noble and Pacific silver firs.
- Ground-based logging (skidder, harvester/forwarder, shovel, etc.): All multiple pass trails (skid trails) would follow existing skid trails (from logging in the 1970s) (RMP p. C-2). If mechanized harvesting equipment is used, felling trails would be spaced 75 feet apart, with on-site limbing slash used on the trail to create a slash mat for travel.
- Equipment with lateral yarding capabilities would be used for skyline yarding.
- Skid trails would be left covered with logging slash and debris after the sale and any exposed soil would be seeded with native species.
- Designated genetically superior seed trees would be protected from damage.

## **4. Logging in Riparian Reserve (RR) LUA**

- RR would be thinned to the same prescription as the adjacent GFMA portion of each stand, and would be harvested with the same yarding system as the adjacent upland GFMA portion.

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\* Ephemeral. One that flows only in direct response to storm precipitation and whose channel is at all times above the water table.

- A “No Treatment” buffer would be established on all streams to avoid direct impacts to biotic riparian zones. These buffers would be established on topographic or ecological breaks with a minimum distance of 50 feet from the edge of the channel.
- Cables and other equipment may be attached to trees within the RR. Reserve trees in the RR (outside of the No Treatment buffer) that must be felled for safe operations would be left on site for future CWD.
- Approximately 550 feet of temporary road construction would occur in riparian reserves in section 15. ( see photo 3)

## 5. Fuel Treatment

- Debris from road construction and yarding would be machine-piled, covered with plastic, and burned. Debris accumulations in the openings would be hand piled or excavator piled, covered with plastic and burned (RMP pp. 23, 24).
- All burning would occur under favorable smoke dispersal conditions in the fall, in compliance with the state Smoke Management Plan (RMP pp. 22, 65). The main roads are gated and closed to reduce fire risk.

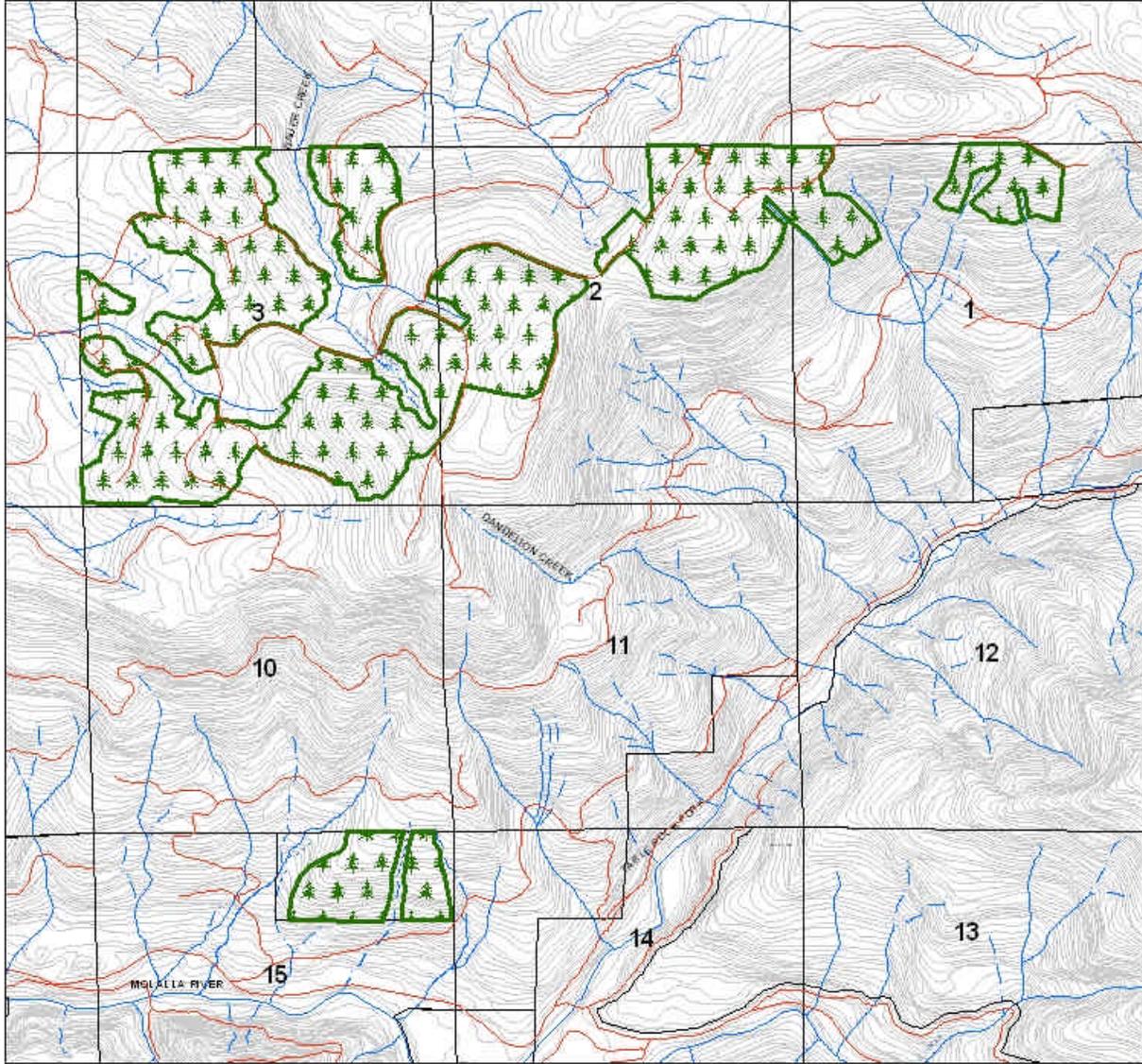
## 6. Vegetation

- Spotted owl dispersal habitat (an average of 40 percent canopy closure) would be maintained after timber harvest.
- All mature noble and Pacific silver firs would be reserved and protected from damage to provide potential habitat for *Bridgeoporous nobilisimus* (a fungus species).
- **Snags:** Unmerchantable snags of all sizes and decay classes would be left standing to the greatest extent possible under standard contractual logging procedures, BMP, and OSHA requirements (RMP p.D-2). Any such snag cut or knocked down, would remain on site.
- **CWD:** CWD already on the ground would be retained and protected to the greatest extent possible from disturbance during treatment (NWFP S&G p. C-40, RMP 21, p.D-2). If CWD needs to be moved, a section of the log would be cut to allow access through, instead of moving the entire log.
- **Invasive Species** (e.g. Noxious weeds) (RMP p. 64). All harvesting and road-building equipment would be cleaned to remove off-site soil, invasive plant parts and seed prior to entering the project area.

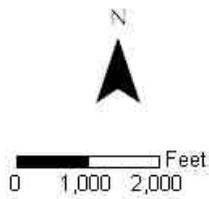
## 2.3 No Action Alternative

The BLM would not implement any of the actions described in the proposed action at this time. This alternative serves to set the environmental baseline for comparing effects to the proposed action.

## B cubed - T7S, R3E Sec. 1, 2, 3, & 15



-  Proposed Thinning Areas
-  Existing Roads
-  Ephemeral
-  Intermittent
-  Perennial

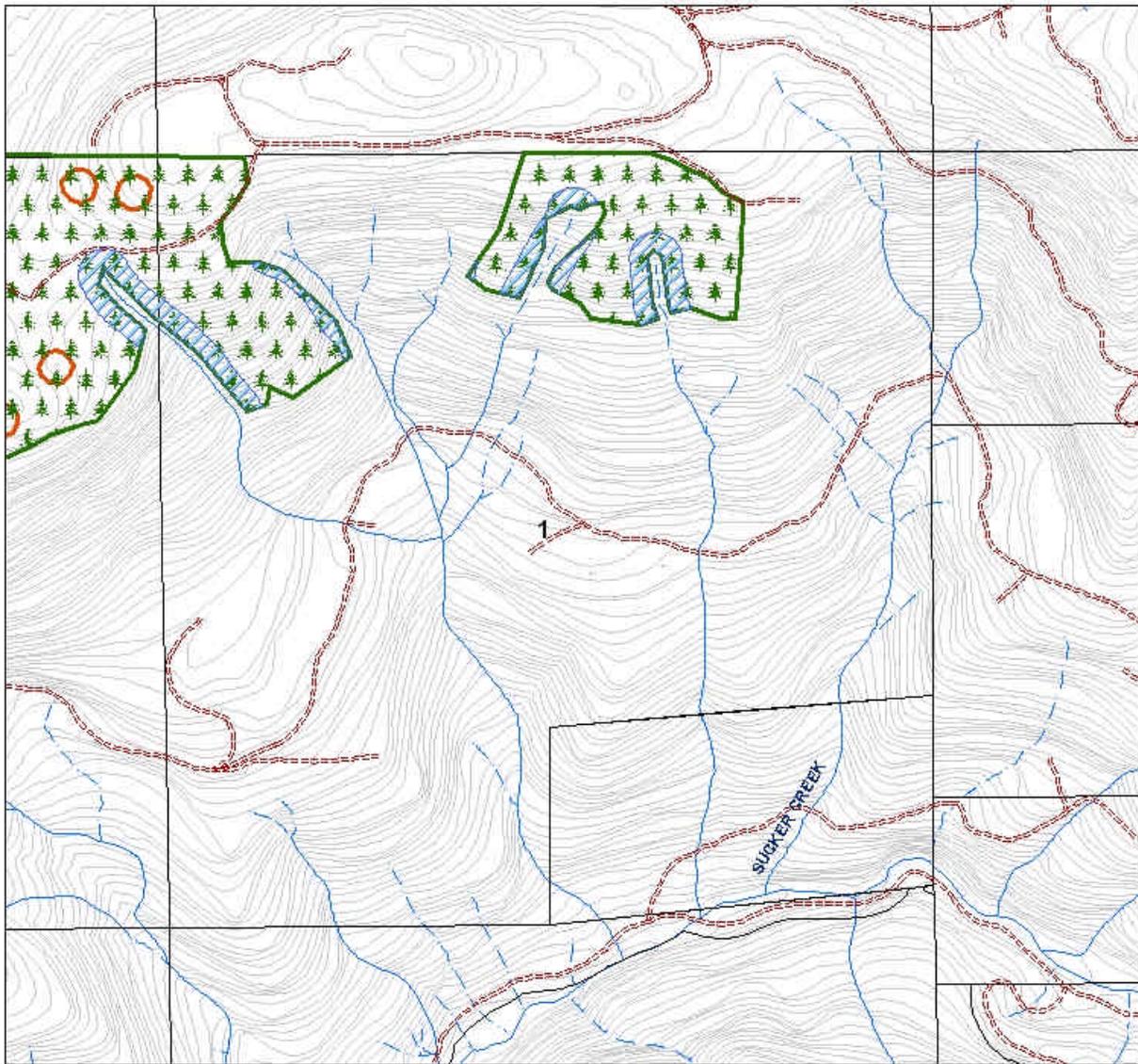


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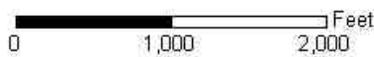


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# B cubed - T7S, R3E Sec. 1



-  Proposed RR Thinning Areas
-  Proposed Thinning Areas
-  Proposed Canopy Gaps
-  Existing Roads
-  Ephemeral
-  Intermittent
-  Perennial

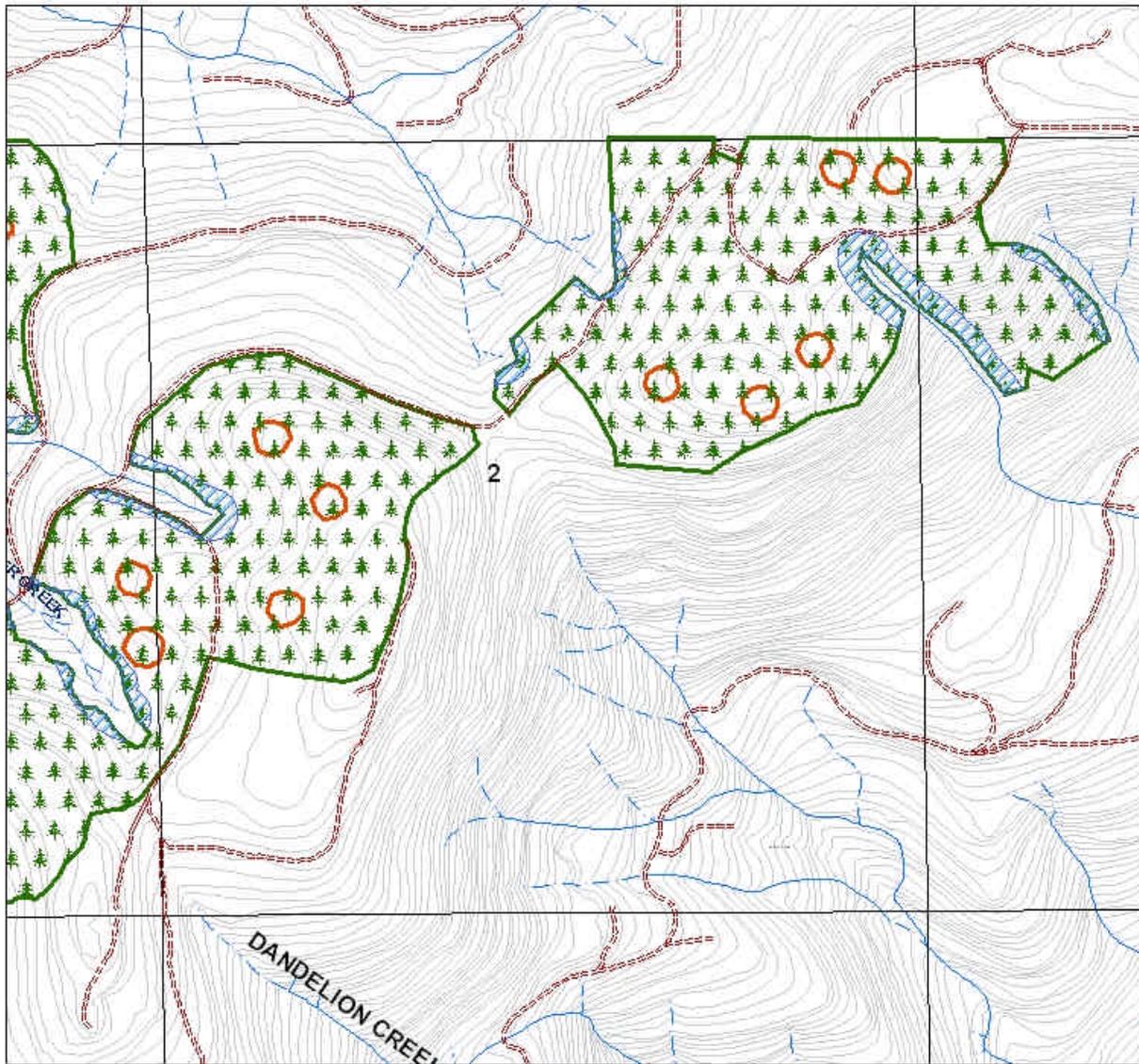


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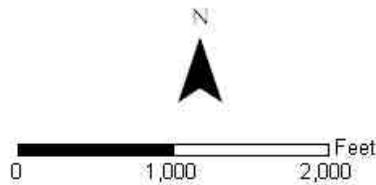


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## B cubed - T7S, R3E Sec. 2



-  Proposed RR Thinning Areas
-  Proposed Thinning Areas
-  Proposed Canopy Gaps
-  Existing Roads
-  Ephemeral
-  Intermittent
-  Perennial

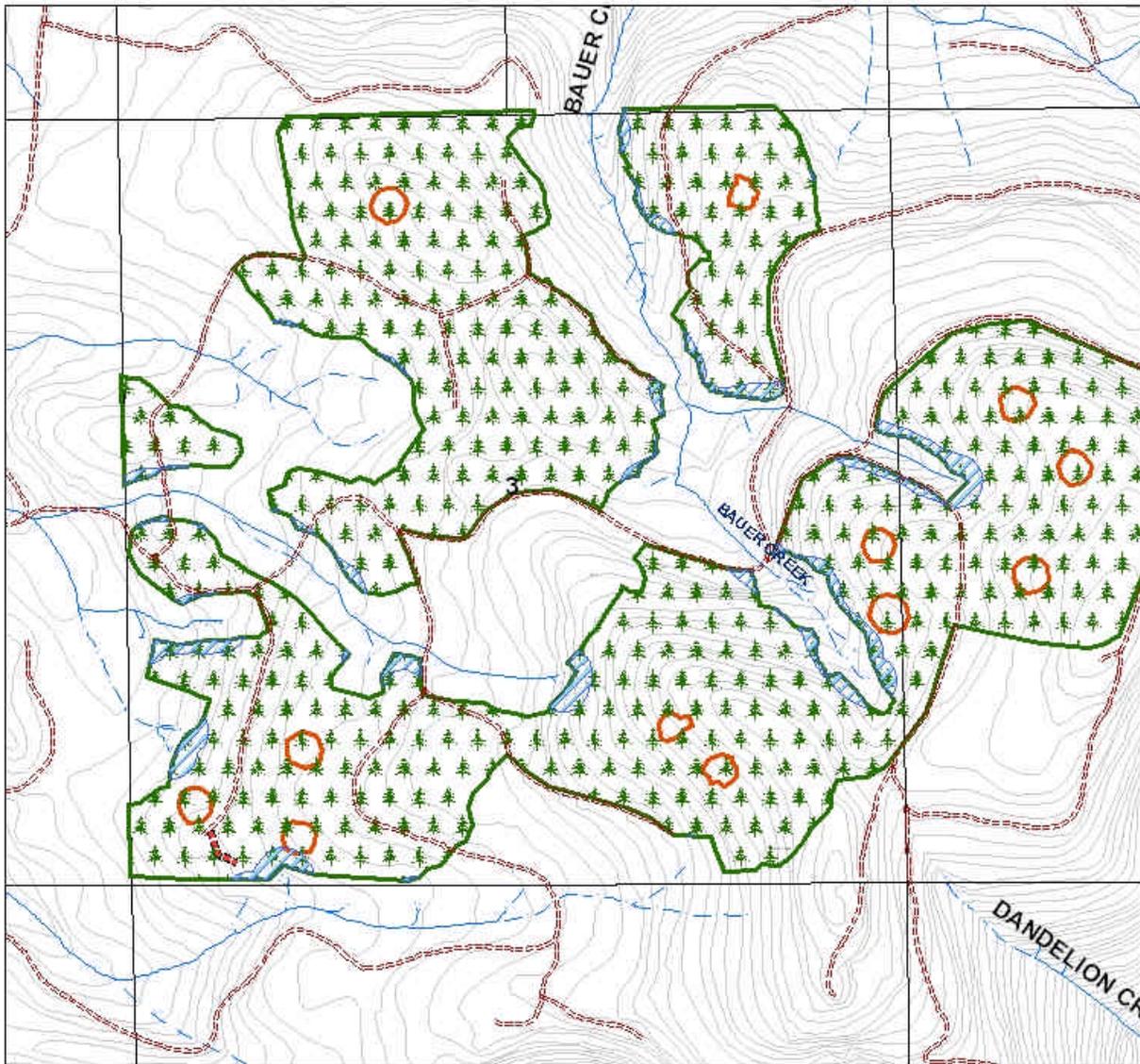


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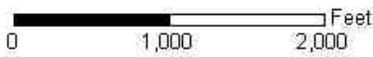
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification. This map product has not been reviewed for conformance with BLM cartographic standards.

### B cubed - T7S, R3E Sec. 3



-  Proposed RR Thinning Areas
-  Proposed Thinning Areas
-  Proposed Canopy Gaps
-  Existing Roads
-  New Construction
-  Ephemeral
-  Intermittent
-  Perennial

N

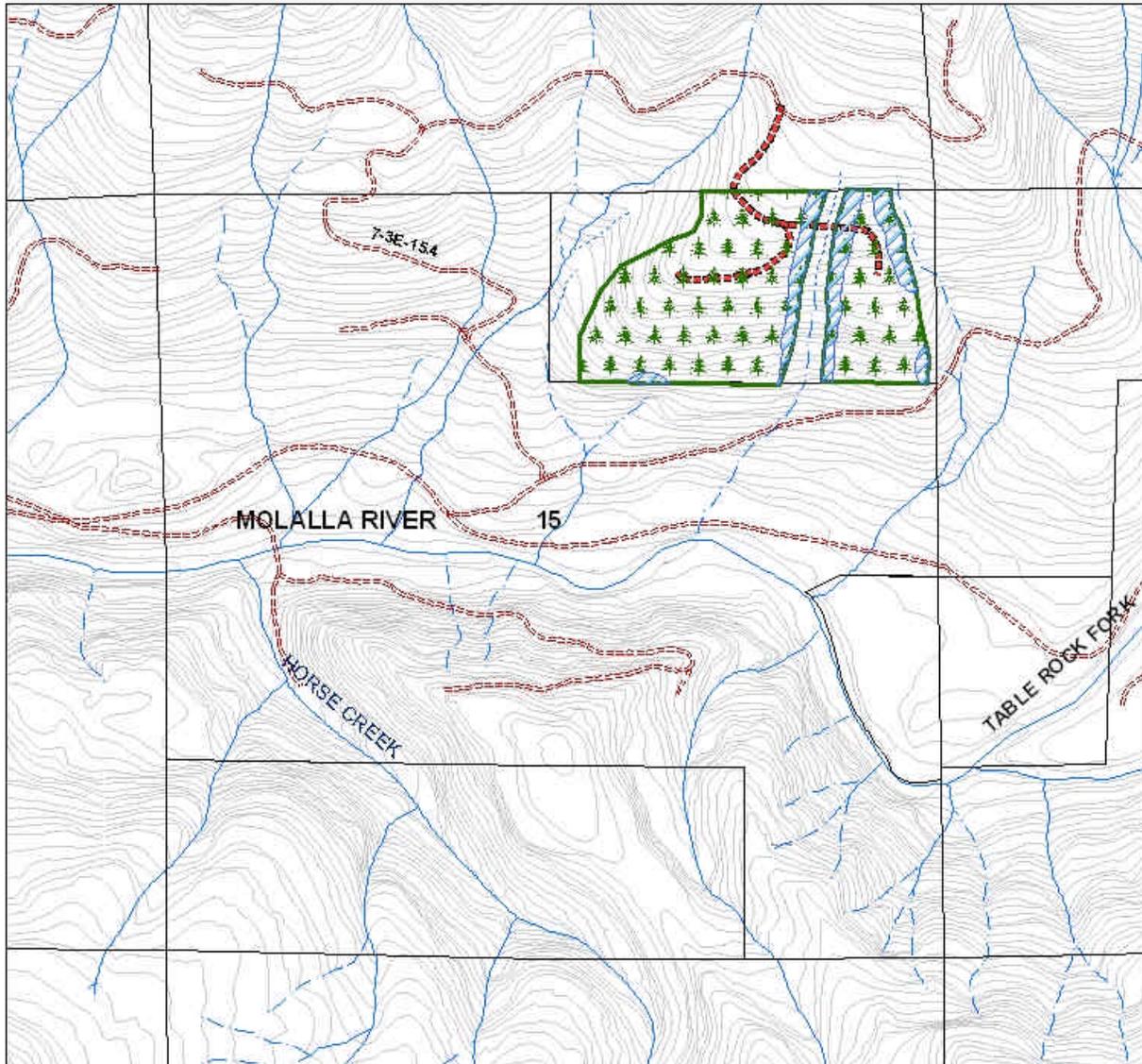


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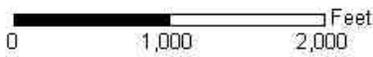


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## B cubed - T7S, R3E Sec. 15



-  Proposed RR Thinning Areas
-  Proposed Thinning Areas
-  Proposed Canopy Gaps
-  Existing Roads
-  New Construction
-  Ephemeral
-  Intermittent
-  Perennial



braible - 62004



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification. This map product has not been reviewed for conformance with BLM cartographic standards.

### 3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

#### 3.1 Identification of Affected Elements of the Environment

The interdisciplinary team reviewed the elements of the human environment, as required by law, regulation, Executive Order and policy, to determine if they would be affected by the proposed action. Table 2 summarizes the results of that review. Critical Elements of the Human Environment (BLM H-1790-1, Appendix 5) are in *italics*. Affected elements are **bold**. All entries apply to the proposed action, unless otherwise noted.

**Table 2: Affected Elements of the Environment**

Elements Of The Human Environment		Status: (i.e., Not Present, Not Affected, or Affected)	Does this project contribute to cumulative effects? Y/N	Remarks If not affected, why?
<i>Adverse Impacts on the National Energy Policy</i>		<i>Not Affected</i>	No	<i>There are no known energy resources located in the project area. The proposed action will have no effect on energy development, production, supply and/or distribution.</i>
<b>Air Quality</b>		<b>Affected</b>		<b>Addressed in text (EA p. 24 )</b>
<i>Areas of Critical Environmental Concern</i>		<i>Not Present</i>	No	<i>There are no ACECs within the subbasins of the project area.</i>
<i>Cultural Resources</i>		<i>Not Affected</i>	No	<i>No cultural resources are known or suspected to be present in the proposed project area.</i>
<i>Environmental Justice (Executive Order 12898)</i>		<i>Not Affected</i>	No	<i>The proposed action is not anticipated to have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.</i>
<i>Prime or Unique Farm Lands</i>		<i>Not Present</i>	No	
<i>Flood Plains</i>		<i>Not Affected</i>	No	<i>The proposed action does not involve occupancy and modification of floodplains, and will not increase the risk of flood loss.</i>
<i>Hazardous or Solid Wastes</i>		<i>Not Present</i>	No	
<b><i>Invasive, Nonnative Species (plants) (Executive Order 13112)</i></b>		<b>Affected</b>	No	<b>Addressed in text (EA p. 25 )</b>
<i>Native American Religious Concerns</i>		<i>Not Affected</i>	No	<i>No Native American religious concerns were identified during the public scoping period.</i>
<i>Threatened or Endangered (T/E) Species or Habitat</i>	<i>Fish</i>	<i>Fish: Not Affected Habitat: Affected</i>	No	<i>A determination has been made that this project would have “no effect” on Upper Willamette River steelhead trout or Upper Willamette River chinook salmon, mainly due to design criteria that include dry conditions hauling on non-paved roads, limited harvest activity within RR (approximately 50 acres), with only about three acres within 100 feet of a stream channel, and slopes of less than 35% throughout most of the project area. See appendix I ESA Determination of Effect to UWR steelhead trout and UWR chinook salmon.</i>
	<i>Plant</i>	<i>Not Present</i>	No	
	<b>Wildlife</b>	<b>Affected</b>	No	<b>Addressed in text (EA p. 22-20 )</b>
<b>Water Quality (Surface and Ground)</b>		<b>Affected</b>	No	<b>Addressed in text (EA p. 18-17 )</b>

<b>Elements Of The Human Environment</b>	<b>Status: (i.e., Not Present , Not Affected, or Affected)</b>	<b>Does this project contribute to cumulative effects? Y/N</b>	<b>Remarks If not affected, why?</b>	
<i>Wetlands/Riparian Zones</i>	<b>Affected</b>	<i>No</i>	<b>Addressed in text (EA p.18-17)</b>	
<i>Wild and Scenic Rivers</i>	Not Present	<i>No</i>		
<i>Wilderness</i>	Not Present	<i>No</i>		
Coastal zone	Not Present	No		
Fire Hazard/Risk	Not Affected	No	Fire Hazard/Risk is reduced through the gate closure.	
other Fish Species with Bureau Status and Essential Fish Habitat	Not Affected	No	No non-ESA listed Special Attention fish species are found in or near the project area. The project would have “no effect” on Essential Fish Habitat as designated under the Magnuson-Stevens Act.	
Land Uses (right-of-ways, permits, etc)	Not Affected	No	Agreements are in place and would not be changed by the proposed project.	
Late Successional and Old Growth Habitat	Not Affected	No	No Late Successional or Old Growth stands are included in the proposed action.	
Mineral Resources	Not Present	No		
<b>Recreation</b>	<b>Affected</b>		<b>Addressed in text (EA p.27)</b>	
Rural Interface Areas	Not Affected	No	Rural Interface Areas are downstream on the Molalla River approximately 12 miles.	
<b>Soils</b>	<b>Affected</b>		<b>Addressed in text (EA p.20)</b>	
Special Areas outside ACECs (Within or Adjacent) (RMP pp. 33-35)	Not Present	No		
Other Special Status Species / Habitat	<b>Plants</b>	<b>Affected</b>	<b>No</b>	<b>Addressed in text (EA p. 25 )</b>
	<b>Wildlife</b>	<b>Affected</b>	<b>No</b>	<b>There would be no anticipated affect to identified special habitats provided that they are posted outside of the proposed thinnings and are adequately buffered. Addressed in text (EA. p. 22-23)</b>
Visual Resources	Not Affected	No	<i>(B cubed Thinning Timber Sale Visual Resources Report pp. 1-2)</i> A forest canopy would still be maintained in all the stands and changes to the landscape character are expected to be low. All the proposed actions would comply with Visual Resource Management Class IV guidelines.  Cumulative Impacts: Because the forest canopy would be maintained and continue to have a relatively natural appearance, no cumulative impacts were identified.	
<b>Water Resources – Other (303d listed streams, DEQ 319 assessment, Downstream Beneficial Uses; water quantity, Key watershed, Municipal and Domestic)</b>	<b>Affected</b>	<b>No</b>	<b>Addressed in text (EA p. 18-17)</b>	
<b>Wildlife Structural or Habitat Components - Other (Snags/CWD/ Special Habitats, road densities)</b>	<b>Affected</b>	<b>No</b>	<b>Addressed in text (EA p. 22-20)</b>	

## 3.2 Affected Environment and Environmental Effects

Those elements of the human environment that were determined to be affected are hydrology, soils, wildlife, air quality/fuels, botany, fisheries and aquatic habitat and recreation and rural interface (EA pp. 15-14). 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 General Setting

The proposed treatment area is a mix of Douglas-fir and western hemlock with scattered Pacific silver and noble fir, most of which is approximately 110 years old. The original stands are natural and regenerated after a stand replacement fire in the 1800s. The shrub understory is dominated by huckleberry and vine maple, and ground cover consists of sword fern, salal, and Oregon grape. Slopes vary from 0 to 60 percent, although 80 percent of the area is on slopes and benches less than 34 percent. Stands in Sections 2 and 3 of T7S R3E were thinned during the 1970s. As a result of thinning treatments, there are very few large standing snags present, and most of the large residual snags that are present are short and in advanced decay classes (soft). Little large down woody debris is present on the forest floor. An 80 year-old Douglas-fir stand located along the north boundary in Section 1 (20 acres) has never been thinned. In this stand, tree diameter ranges from 18 to 22 inches, and stand age ranges from 85 to 110 years old.

No commercial thinning activities have occurred in the stand located in Section 15 of T7S R3E. This naturally-regenerated stand is composed of two average age classes. One is 84 years old and has an average DBH of 18 inches. The other is 96 years old, and has an average DBH of 20 inches. Large diameter tall snags are also very scarce.

### 3.2.2 Hydrology

*(B cubed Thinning Timber Sale Hydro Report pp. 1-26)*

#### Affected Environment

The project area contains several small headwater streams, two of which are perennial, in the Molalla watershed. These streams are in proper functioning condition: they are well shaded, with stable beds and banks, adequate quantities of wood, sediment and a diversity of riparian species. Streamside shading from riparian vegetation is adequate to buffer streams from temperature increases. None of the project area streams are listed on the state's *303d list* or in the *319 Report* for water quality issues (see Hydrology report pp.6-7). However, local streams flow directly into the Molalla River, which is listed for exceeding summer temperature and coliform bacteria standards.

Recognized beneficial uses of in-stream flows include anadromous fish, resident fish, recreation, and esthetic values. The Molalla River is a municipal watershed for the cities of Molalla and Canby. The project is not located in a key watershed.

## Environmental Effects

### 3.2.2.1 Proposed Action

Long-term measurable effects (10 years or more) to watershed hydrology, channel morphology, and water quality as a result of the proposed action are unlikely. This action is unlikely to alter the current condition of the aquatic systems either by affecting its physical integrity, water quality, sediment regime or its in-stream flows.

*Watershed Hydrology (In stream flows):*

- **Base Flow:** It is unlikely the proposal would result in any measurable change to local base flow, because the proposed project will remove less than half the existing forest cover, so that the root systems of the conifers retained would quickly exploit any additional soil moisture availability.
- **Peak flow effects from harvest:** Since portions of the project area are in a zone subject to transient snow accumulations in the winter, it can be assumed that the reduction in stand density may result in some small increase in snow accumulation and melting during rain-on-snow (ROS) events. However, due to the small area considered in this action, this effect is not likely to be measurable.
- **Peak Flow effects from roads:**
  - Most of the roads that would be utilized under this proposal already exist. This proposal will not alter these roads in a way that would likely reduce or increase any existing effect to peak flows attributable to the current road network, and thus, it will maintain the current condition and trends relative to hydrology and stream flow that existing roads contribute to.
  - Improvement and repair of road surfaces would be implemented under the proposed action. Some of these actions would reduce existing road effects on local and watershed hydrology.

**New Road Construction and stream flows:** New road construction under the proposed action would be limited to stable slopes outside of riparian reserves. Slopes in these areas are low to moderate, and would not require extensive full-bench or cut-and-fill construction. One temporary stream crossing would be constructed in section 15. The stream at this location is an ephemeral headwater channel on a flat bench. See photo 3 on page 8. A temporary crossing at this location, constructed of chipped wood or other organic material, would likely have no measurable effect on surface or subsurface hydrology or streamflow because during the season of use no surface flow would be evident and ground water levels would likely be several feet below the surface.

*Stream Channel Morphology (physical integrity):* Under the proposed action, with the exception of the temporary crossing of an ephemeral channel (discussed in the streamflow section above) there would be no direct alteration of any stream channel, wetland or pond morphological feature because all operations, equipment and disturbances would be at least 50 feet from all wetlands and stream channels.

*Water Quality (sediment):* Short-term, localized increases in stream sediment may occur as a result of harvest and road use (see Hydrology report pp. 16-18). However, these are unlikely to be measurable and would likely be insignificant relative to overall sediment yields in the watershed. Private land accessed by these roads will not be ready to harvest for several decades, so no other sources of sediment input are known or forecasted.

Tree removal and road renovation and construction would not occur on steep unstable slopes where the potential for mass wasting adjacent to stream reaches is high. Therefore, increases in sediment delivery to streams due to mass wasting are unlikely to result from this action. In addition, potential impacts resulting from tree harvest and road construction/renovation would be mitigated to reduce the potential for measurable sediment delivery to streams, by implementing Best Management Practices (BMPs), such as stream and road buffers, minimum road widths, minimal excavation, ensuring appropriate drainage from road sites, etc. (RMP Appendix C, pp. C-1 to C-9).

*Water Quality (Temperature):* Within riparian zones, substantial portions of the riparian canopy would be retained, therefore maintaining riparian microclimate conditions and protecting streams from increases in temperature.

#### **Cumulative Effects Analysis:**

Since the proposal is not likely to result in measurable direct or indirect effects to stream flow the proposal would be unlikely to contribute to any potential cumulative effects to either annual flow, base flow, flow timing or peak flows in these watersheds. The proposal would result in no net increase in forest openings in TSZ with crown closure <30% and therefore would not contribute cumulatively to peak flow augmentation that may be occurring in these watersheds as a result of forest harvest. Proposed road use and construction is unlikely to alter surface or subsurface hydrology or to contribute cumulatively to any change in the watershed base, peak or annual flow.

Over the long term, the incremental improvement of forest stand characteristics (increased species diversity and wood recruitment) in the riparian would support the cumulative improvement in these conditions that is anticipated throughout these watersheds in response to the forest plan (see Molalla WSA). This would add cumulatively to the improvement in the condition of stream channels and wetlands in the watershed.

#### **3.2.2.2 No Action Alternative**

The “no action” alternative would result in the continuation of current conditions and trends at this site as described in the *Description of the Affected Resource* section of this report and in the *Molalla River Watershed Analysis*, May 1999 (MRWA).

#### **3.2.3 Soils**

*(B cubed Soils Report pp.1-5)*

##### **Affected Environment**

Typical soils within the project area formed in colluvium derived from andesite and basalt and mixed with volcanic ash. The climate is cold and wet and the soils consist mainly of stony and very gravelly loams, moderately deep to deep and well drained (except in the drainages), and have moderate to severe erosion hazards on steep slopes. These forest soils have a high infiltration rate although the use of heavy equipment during previous management has compacted the soil on skid trails. These skid trails appear to have recovered well. The soils in Sections 2 and 3 are classified in the soil surveys as being low in nitrogen.

## Environmental Effects

### 3.2.3.1 *Proposed Action*

Because the soils are low in nitrogen, thinning and a longer rotation will add organic debris to the soil through the addition and incorporation of limbs and slash on the forest floor.

*Road Construction:* New road construction would displace topsoil and compact subsoil on less than 1 ½ acres of forested land (< 0.1% of the project area), converting it to non-forested land. These new road segments would be left in a stable condition so that maintenance would be unnecessary and erosion would be minimized. Both new roads are behind gated roads. The road bed would be seeded with native grasses and left to be utilized in the next harvest cycle. The location and design of the local spur road in Section 15 would be such that any resulting runoff would infiltrate rapidly into adjacent undisturbed soils, well away from RR.

*Cable Yarding:* Skyline roads would disturb and lightly compact narrow strips less than four feet wide; cumulatively this amounts to less than 3 percent of the project area. This effect assumes 12 foot wide corridors spaced 150 feet apart. One-end suspension would be required.

About half of the area that would be used for landings is road surface. The remaining landing areas would experience moderate to heavy soil surface disturbance and compaction. Landing locations would be in areas with low erosion potential and high slope stability.

*Ground-Based Yarding:* Due to topography and presence of existing skid trails, most of the sale area would be harvested using ground-based equipment. Moderate soil displacement and compaction would occur on 10 percent or less of the project area where existing or designated trails intersect or numerous passes are required. Compaction and displacement would be substantially reduced by mechanized equipment that can work on top of a logging slash mat. The use of this type of equipment may require additional designated skid trails if existing skid trails are not adequately spaced or do not meet the project design features (p. 6).

*Fuels Treatments:* Burning piled slash in the openings and at landings would result in low risk to soils. Since burning would occur during wet soil conditions, heat damage to the upper soil layer (A-horizon) would be moderated, and only occur in scattered localized sites.

### 3.2.3.2 *No Action Alternative*

Soils compacted from logging in the 1970s are recovering well, and the dense understory growth would continue to decrease compaction. No new soil compaction or displacement would take place within the project area.

### 3.2.4 Wildlife

(B cubed Thinning Timber Sale Wildlife Report pp. 1-26)

#### Affected Environment

**Special Habitats:** (Special habitats include wet and dry meadows, talus slopes, cliffs, and wetlands.)

Numerous small cliffs, talus slopes and wet and dry meadows (openings) are scattered throughout the four sections covered by this proposed project.

**Dismal Swamp** is probably the most significant special feature within the project area, not large in size but actively used by wildlife with lots of ungulate sign – wallows, foraging, and bed sites with numerous trails leading into the area from all sides.

Rock outcrops are numerous along the southern flank of the proposed units and are primarily associated with steeper ground outside the project area. Other special features include small (less than one acre) natural dry and wet meadows and wetlands.

**Snags, culls and CWD:** Low in numbers (see table below), the combination of past stand replacement fires and logging activity removed some snags, culls and CWD. Snags and CWD that are present generally are either small or highly decayed (class 5+) with larger material being limited to areas in or adjacent to riparian reserves. While most of the snags and down logs do not meet the criteria set within the District RMP (class 1 and 2) for cavity excavators and users, they are however a valuable habitat feature for many species groups such as herpetofauna and mollusks as well as for foraging by woodpeckers. (Oregon slender salamanders are almost exclusively found in down logs.)

**Table 3. Current conditions (from stand exam data)**

Unit	Location	SNAGS* # per acre		CWD** down logs		
		7" to 19"	19"+	<19"dia linear ft/acre	>19"dia linear ft/acre	% cover per acre
1, 2, 3	7-3-1&2	18.4	6.3	0	450	2.2
5, 6, 7	7-3-3	4.8	5.25	0	0	0
8	7-3-15	17.3	2.8	0	0	0

\* = all decay classes over 15 feet tall

\*\* = CWD does not include soft (class5+) logs

The sole access route is gated two miles from the project area. Evidence of elk , deer, coyotes, cougars and bobcats are frequently observed, probably due to the lack of regular vehicle access. The Oregon Department of Fish and Wildlife (ODFW) considers the Pine Creek/ Bauer Creek area to be important winter range for ungulates.

**Wildlife:** Probably in large part due to the locked private gate two miles down the road this area has a very active animal community. Signs of **elk** and **deer** are frequently observed as well as

**Coyotes, cougars and bobcats** tracks. **Mountain quail, grouse, jays** and **pileated woodpeckers** etc are observed on a regular basis.

**Interior habitat:** The project area currently provides some level of interior habitat, adjacent private lands generally do not exhibit interior habitat characteristics and Federal lands to the south provide the most.

**Travel/connectivity corridors:** Current conditions provide for closed canopy travel/connectivity corridors to the south but are limited in the other directions. More recent harvesting to the east and west has reduced the quality of cover and secure travel is generally not provided at this time. It is anticipated that connectivity and travel corridors to the north will be reduced or eliminated through logging on private lands but would be offset to some degree due to the land owners policy of keeping all their roads closed..

The total road density for the analysis area is considered low, and open road density (roads open to public motorized travel) is approximately 0.7 miles per section.

Forty-four percent of federal lands within the fifth-field watershed are within reserves and in late successional forest condition.

## **Environmental Effects**

### ***3.2.4.1 Proposed Action***

#### **General effects to wildlife populations and habitats:**

- There would be no anticipated effect to identified special habitats because they are posted outside of the proposed thinning and are adequately buffered.
- Much of the material that would have developed into snags and CWD has been removed in previous harvest entries. Large diameter material over 20 inches would be recruited over decades, and snags and CWD would be generated over long periods of time. Existing material would remain intact, but continue to decay. In some cases, these stands could take longer to develop late successional conditions if left untreated (due to past logging activity).
- Incidental Changes to Existing CWD habitat: In the short term (less than 10 years), existing snags and CWD habitat may be degraded due to logging activities. Project design features reduce the risk of damage to CWD habitat (EA p 7). However, incidental damage to small or soft existing CWD from falling trees and yarding trees to the landings is anticipated.
- In the long term, green tree retention, CWD recruitment, topping and base girdling to create snags and CWD would introduce this type of material, thus increasing stand structure for the future life of these stands. Snag densities and CWD levels would approach NFP standards over time.
- There would be no effect on Bureau Sensitive, Special Attention, or other species of concern. Habitat conditions would remain as described in the Affected Environment, and would continue to develop over time.
- There would be no changes to late successional habitat and open road densities.

**Effects to species:**

- There would be no change in spotted owl habitat and no effect to spotted owls. Habitat conditions would remain as described in the Affected Environment, and would continue to develop over time.
- In the short term, approximately 600 acres of nesting, foraging and roosting habitat downgraded to dispersal habitat as a result of thinning. In the long term, suitable habitat conditions would develop again in 10 to 20 years.
- In the short term, retention of existing snags and CWD would reserve habitat for primary excavators, amphibians and bat species. Direct adverse impacts to snags and CWD due to logging and site preparation could have short term adverse impacts on these species (loss of habitat connectivity and a reduction of foraging opportunities which could lead to loss of individuals but not put the species' at risk). Impacts are expected to be lower due to the scarcity of this type of material. In the short term (less than 10 years – by which time the canopies have closed to pre-harvest levels), some micro-habitat drying is anticipated to occur as canopies are opened up, however, micro-habitat drying is anticipated to be minimal due to the high green tree retention.
- In the long term, green tree retention, snag creation and additional CWD recruitment would contribute to habitat for primary excavators, amphibians and bat species in future stands, especially in Riparian Reserve treatment areas. Canopies are expected to develop and close within 10 to 30 years.
- No entry buffers and untreated Riparian Reserves would adequately protect aquatic amphibians such as the red-legged frog, tailed frog and the Cascade torrent salamander, and provide protection for bats which forage over open water and in riparian areas.
- Approximately 600 acres of marginal habitat for goshawks would be degraded through the reduction of canopy closures below current levels.

**Cumulative effects:**

Generally, lands to the west, north and east of the project area are managed by one private timber company and are either recently harvested or are less than 50 years of age. Based on the management practices of that company it is anticipated that none of these forests will attain late successional characteristics. Management on federal lands (BLM) within the project area have resulted in approximately 22 percent of the analysis area been converted from older forest to plantations since the late 1970's. Under current management plans (the lands under consideration are designated as GFMA) federal forest management actions will emphasize timber production while promoting older forest characteristics including snag, cull and CWD creation/retention and forests with horizontal and vertical structural diversity.

**3.2.4.2 No Action Alternative**

- Natural processes would continue, and competition among overstory trees would continue. Large diameter material over 20 inches would be recruited over decades, and snags and CWD would be generated over long periods of time. Existing material would remain intact, but continue to decay. In some cases, these stands could take longer to develop late successional conditions if left untreated (due to past logging activity and the stand-replacement fire history).

- There would be no change in spotted owl habitat and no effect to spotted owls. Habitat conditions would remain as described in the Affected Environment, and would continue to develop over time.
- There would be no effect on Bureau Sensitive, Special Attention, or other species of concern. Habitat conditions would remain as described in the Affected Environment, and would continue to develop over time.
- There would be no changes to late successional habitat and road densities.

### 3.2.5 Air Quality/Fuels Management

*(B cubed Thinning Timber Sale Fuels/Fire Ecology Report pp. 1-3)*

#### **Affected Environment**

The affected environment pertaining to forest fuels is dependent on the fuels profile, hazard and risk. Fuels profile is the arrangement of fuel, hazard relates to the amount of fuel available to burn, and risk is the probability of a fire igniting the fuel.

The fuel loading in the proposed sale area is consistent with other timbered stands of the same age class in the Molalla Watershed. Two timber fuel models are represented as described in Fire Behavior Field Reference Guide, PMS 436-4; Fuel Model 8 “closed timber litter,” and Fuel Model 10 “timber with litter and understory”. The primary carrier of fire in these two Fuel Models is the litter beneath a timber stand. Fire behavior is described as spread rates ranging from low to moderate and fireline intensities ranging from low to high.

Hazards are low in areas of the proposed sale that are categorized as Fuel Model 8 and low to moderate in areas categorized as Fuel Model 10.

Risk, the probability of ignition is low for two reasons. The first reason is the lack of natural ignitions (lightning) in the area. The second reason is the lack of human activity (recreation) in the area due to locked gates. As a result, the chance of wildfire is low.

#### **Environmental Effects**

##### **3.2.5.1 Proposed Action**

Where thinning is proposed in the sale area, the fuel model will change from a Fuel Model 8 to Fuel Model 11, “light logging slash”, 80 percent, and Fuel Model 10, “timber with litter and understory”, 20 percent. The results of the proposed action will increase the hazard (fuel loading increase) from low to moderate for up to 10 years. The risk of ignition will remain low. The risk of fire damage to the timbered stand (in case of a wild fire) will increase from *low-moderate* to *moderate-high*. Reduction of slash concentrations at landings will reduce fire control problems in case of wildfire and also remove an attractive nuisance.

*Air Quality:* Smoke produced from burning should have little impact on people because of the distance (approximately 6 miles) between the treatment area and residences and be only a few hours in duration. In addition, prevailing winds will carry smoke away from populated areas to unpopulated, forest-covered areas.

### 3.2.5.2 *No Action Alternative*

There will be no effect for air quality, fuels management. The area will remain low risk for fire ignition due to the blocked and gated roads.

### 3.2.6 **Botany**

(*B cubed Thinning Timber Sale Botany Report pp. 1-12*)

#### **Affected Environment**

For a general description of the vegetation, see General Setting (p.17)

*Special Status Species:* No Special Status Species were found within or adjacent to the proposed project areas. Protocol surveys including those for *Bridgeoporus nobilissimus* (BRNO), were conducted with negative results. Due to fact that little is known about this species or its reproductive biology, lack of detection does not necessarily indicate lack of presence. Habitat for BRNO is mature true firs.

*Invasive Species:*

All of the invasive nonnative plants identified during the field surveys of the proposed project area are common roadside weed species. These weed species are commonly found throughout western Oregon, tending to occupy areas of high light and ground disturbance (i.e. road corridors and fields).

#### **Environmental Effects**

##### 3.2.6.1 *Proposed Action*

*Bureau Sensitive, SEIS Special Attention, and Other Species of Concern:*

This project will not contribute to the need to list any Special Status Species known or expected to occur in the vicinity of the project area. If SEIS Special Attention Species or Special Status Species are discovered on site, appropriate mitigation would be implemented as described on page 28-33 of the RMP.

BRNO is known to exist on host stumps that are the result of past timber harvest activities. Because so little is known about this species and so little suitable green-tree habitat exists within the Salem District, loss of potential host trees could have a negative impact on this species as a whole. Reserving suitable BRNO host trees (i.e. mature *Abies amabilis*/Pacific silver fir and *Abies procera*/noble fir) identified within the proposed project area from harvest and protecting them from damage during harvesting operations will prevent loss of habitat if the species is present but undetected. (Section 2.2.2)

*Invasive Species*

An increase in the populations of invasive nonnative plants identified in the project area will likely occur immediately following any ground-disturbing or light-increasing activity associated with the proposed action. In time these species will again return to low levels as the

native vegetation returns and reoccupies these areas. Populations would persist longer along the roadsides; since roadside soils are often disturbed and light levels remain higher than in surrounding forested stands.

### **3.2.6.2 No Action Alternative**

No effect will occur to any Bureau *Sensitive, SEIS Special Attention, and Other Species of Concern*. Invasive nonnative plants will continue to exist and be moved through existing transportation systems.

### **3.2.7 Fisheries and Aquatic Habitat**

*(B cubed Thinning Timber Sale Fisheries and Aquatic Habitat Report pp. 1-4)*

#### **Affected Environment**

None of the streams adjacent to the proposed treatment areas are fish-bearing. All streams in the vicinity of the proposed project are small 1<sup>st</sup> and 2<sup>nd</sup> order headwater channels. On the south side of the project area the streams flow toward the mainstem Molalla River and the Table Rock Fork. All of those streams are too small and steep to support fish. Streams that drain the project area to the north and west are tributaries to Pine Creek and Bear Creek, respectively. The upstream extent of fish distribution in Pine Creek is unknown but is suspected to be at least one mile downstream of the closest treatment area (NW portion of Section 3).

#### **Environmental Effects**

##### **3.2.7.1 Proposed Action**

Where thinning is proposed within the Riparian Reserves, minimum no-harvest buffer widths of 50 feet are expected to protect aquatic habitats from effects of the proposed thinning. Thinning within 50 feet of ephemeral channels poses no risk of water temperature increase or introduction of sediment to the aquatic system downstream.

The 2880 feet of new natural surface road construction proposed to access the treatment area in Section 15 is expected to have minimal impact on the Riparian Reserves. Most of the road is located midslope, with no potential to introduce sediment to stream channels. The road would be sloped and constructed without ditches to avoid gullying and channeled runoff. At the ephemeral stream crossing the channel would be filled with an organic material. Upon completion of hauling from Section 15, the original channel contour and grade would be reestablished at the crossing.

Roads along the haul routes are well-established rocked roads with well-vegetated ditches, which, if left undisturbed, are expected to prevent road sediment from entering stream channels along the haul routes.

Other effects to water resources are described in Hydrology (section 3.2.2).

### **3.2.7.2 No Action Alternative**

Under the No Action alternative the culverts located on road 7-3E-15.4 have the potential to become blocked, since the road is blocked for maintenance, which could potentially affect the road condition or riparian and aquatic habitat below this road. No changes are expected in forest cover, road networks, road condition or riparian or aquatic habitat in the Sections 1, 2, and 3.

### **3.2.8 Recreation and Rural Interface**

*(B cubed Thinning Timber Sale Recreation and Rural Interface Report pp. 1-2)*

#### **Affected Environment**

All of the proposed treatment areas are characterized by a forest setting and are accessed by gravel forest roads. Evidence of man-made modifications such as roads and timber harvest are common on both private and public lands in general area around the project area. There are no developed recreation sites in the vicinity of the proposed treatment area and the recreational activities most likely occurring in the general area include camping, hunting, target shooting and off-highway vehicle use. Recreational use of all the proposed project area is most likely relatively low due to the gating or blocking of roads that access this area.

#### **Environmental Effects**

##### **3.2.8.1 Proposed Action**

After harvest, a forest setting would still be maintained, and understory vegetation disturbed by logging activities would be expected to return within five years or sooner. Recreational use of the proposed treatment areas would be restricted in the short term during the thinning operation. The proposed gating of Road 7-3E-15.3 would not affect public access or use of the road, since it is currently blocked.

**Cumulative Impacts:** The proposed action would contribute towards a slight increase in logging truck traffic along Molalla Access Road, which has moderate to high levels of use by the public. This will be for the two year duration of the project.

##### **3.2.8.2 No Action Alternative**

With the exception of unexpected changes (i.e. wildfire or disease), the proposed treatment areas would continue provide a forest setting for dispersed recreational activities.

### 3.2.9 Comparison of Alternatives With Regard to the Purpose and Need

**Table 4: Comparison of Alternative by Purpose and Need**

<b>Purpose and Need (EA p. 1)</b>	<b>No Action</b>	<b>Proposed Action</b>
Offer a marketable timber sale	Does not fulfill	Fulfills
Achieve a desirable balance between wood volume production, quality of wood and timber value at harvest	Meets wood volume production over course of rotation. Logs at end of rotation would be smaller diameter which generally reduces quality and value compared to thinned stands.	Maintains volume production over the course of the rotation. Lengthens the rotation so that logs at end of rotation would be larger diameter, which increases quantity, quality and value
Maintain a healthy forest ecosystem with habitat to support plant and animal populations and protect riparian areas and water resources	Retains the one-canopy level stand with only occasional development of a significant understory of shade intolerant DF and a large number of smaller suppressed WH	Encourages the development of larger diameter trees and creates more diversity within stands.
Accelerate tree growth of larger conifers in Riparian Reserves.	Diameter growth will continue to increase gradually.	Diameter growth would be accelerated for those trees which have nearby trees removed.
Restore or enhance habitat for riparian-dependent species.	Diversity will develop slowly in this one-canopy level, evenly-spaced managed stand.	The variable spacing with openings for regeneration to accelerate; trees exposed to open growing conditions to develop large limbs; and denser portions along with the creation of snags will accelerate the development of diversity.
Improvement of stand structural and spatial diversity		
Provide appropriate access for timber harvest and silvicultural practices	Main routes would be maintained under both alternatives. The road to Section 15 would not be improved.	Would implement maintenance of feeder roads, allowing continued access for management activities. Would improve access for management and fire protection in Section 15.
Reduces maintenance needs associated with the existing roads within the project area by improvements to stream crossings	Roads are currently closed although the access to Section 15 is compromised by OHVs getting over the dirt berm. Culverts are checked rarely because of the walk-in.	Fulfills. One road is currently gated and will remain so. Provides an opportunity to stabilize the existing road into Section 15, pull the stream culverts, and improve the closure.

### 3.2.10 Compliance with Components Aquatic Conservation Strategy Objectives

Table 4 shows how the proposed action complies with the four components of the Aquatic Conservation Strategy (1/ Riparian Reserves, 2/ Key Watersheds, 3/ Watershed Analysis and 4/ Watershed Restoration, RMP pp. 5-6)

**Table 5: Compliance of Components of the Aquatic Conservation Strategy Objectives**

ACS Component	Project Consistency
Component 1 – Riparian Reserves	The RR boundaries would be established consistent with direction from the Salem District Resource Management Plan (p. 10). Additionally, maintaining canopy cover along all streams and the wetlands would protect stream bank stability and water temperature. Additionally, the only new road crosses an ephemeral stream, which would be used only during dry conditions.
Component 2 - Key Watershed	The project is located within the Molalla River watersheds, which is not a designated key watershed.
Component 3 - Watershed Analysis	<i>Molalla River Watershed Analysis</i> , May 1999: The project is consistent with the recommendations in the Watershed Analysis.
Component 4 - Watershed Restoration	Increasing stand diversity in Riparian Reserves addresses this component.

This proposal is unlikely to impede and/or prevent attainment of the stream flow and basin hydrology, channel function, or water quality objectives of the Aquatic Conservation Strategy (ACS). Over the long term, this proposal should aid in meeting ACS objectives by speeding the development of older forest characteristics in the riparian zone. See Appendix 2 for a description of effects by ACS objective.

## 4.0 LIST OF PREPARERS

Table 6: List of Preparers

Resource	Name	Initial	Date
Ecology/ACEC	Barbara Raible	BR	6/14/04
Cultural Resources	Francis P. ...	FMP	6/14/04
Hydrology/ Water Quality/Soils	Jim ...	PH	6/9/04
Riparian Ecology	Cal. C. ...	ca	6-16-04
Botany TES and Special Attention Plant Species	Terry Fennell	TF	6/9/04
Wildlife TES and Special Attention Animal Species	Jim Trevitt	JT	6/8/04
Fire	Steve ...	ST	6/10/2004
Fisheries	DAVE ...	DAR	6/8/04
Wild and Scenic Rivers/ Wilderness	Laura Graves	LG	6/9/04
Recreation Sites and Visual Resources Management and Rural Interface	Laura Graves	LG	6/9/04
NEPA / Plans	Carolyn ...	CS	6/17/04

## 5.0 CONTACTS AND CONSULTATION

### 5.1 Agencies, Organizations, and Persons Consulted

#### 5.1.1 ESA Section 7 Consultation

##### 1. US Fish and Wildlife Service

The Better Best Bauer proposal will be submitted for consultation with the States Fish and Wildlife Service (USFWS) in 2004 for FY 2005 projects.

##### NOAA Fisheries (NMFS)

A determination has been made that this project would have "no effect" on Upper Willamette River steelhead trout or Upper Willamette River chinook salmon. Consultation with NOAA Fisheries is required for projects that "may affect" ESA listed species, therefore consultation for this project will not take place.

#### 5.1.2 Cultural Resources - Section 106 Consultation and Consultation with State Historical Preservation Office:

Cultural resource surveys were completed, concentrating on the areas most likely to have been used by native peoples and early immigrants. No sites of cultural value were found. Should any sites of cultural value be discovered during implementation of this project, all

activity would be suspended. The BLM completed its Section 106 responsibilities under the 1997 National Programmatic Agreement and the 1998 Oregon Protocol in October 2000.

## **5.2 Public Scoping and Notification.**

### **5.2.1 Tribal Governments, Adjacent Landowners, General Public, and State County and local government offices:**

A scoping letter dated March 12, 2004 was sent to 46 potentially affected and/or interested individuals, groups, and agencies. One letter was received during the scoping period. This letter with our response is available for review in Appendix 3, Scoping Letter Comments.

### **5.2.2 30-day public comment period**

The EA and FONSI will be made available for public review from May 1, 2004 to June 1, 2004. The notice for public comment will be published in a legal notice by local newspapers of general circulation (Molalla Pioneer); sent to those individuals, organizations, and agencies that have requested to be involved in the environmental planning and decision making processes; and posted on the Internet at <http://www.or.blm.gov/salem/html/planning/index.htm> under Environmental Assessments. Comments received in the Cascades Resource Area Office, 1717 Fabry Road SE, Salem, Oregon 97306, on or before June 2, 2004 at 4:00 PM, Pacific Daylight Saving Time, will be considered in making the final decisions for these projects.

## **6.0 MAJOR SOURCES AND COMMON ACRONYMS**

### **6.1 Major Sources**

*Specialists reports can be found in the B cubed Project file. These reports are available for review at the Salem District Office.*

Caliva, S. 2004. *Fuels Management /Fire Ecology Interdisciplinary Team Review*. Cascades Resource Area, Salem District, Bureau of Land Management. Salem, OR.

Graves, Laura. 2004. *B cubed Timber Sale Visual Resources Report and B cubed Timber Sale Recreation and Rural Interface Report*. Cascades Resource Area, Salem District, Bureau of Land Management. Salem, OR.

Hawe, Patrick 2004. *Hydrology/Channels/Water Quality: Environmental Assessment for the proposed B cubed project*. Cascades Resource Area, Salem District, Bureau of Land Management. Salem, OR.

Fennell, Terry. 2004. *Biological Evaluation for Special Status Plant Species/Survey & Manage Species and Noxious Weeds*. B cubed Botanical Species List. Cascades Resource Area, Salem District, Bureau of Land Management. Salem, OR.

Irving, Jim. 2004. *Affected Resource: Wildlife FY 2005 B cubed*. Cascades Resource Area, Salem District, Bureau of Land Management. Salem, OR.

Rabe, Colin. 2004. *Forest Productivity*. Cascades Resource Area, Salem District, Bureau of Land Management. Salem, OR.

Raible, Barbara. 2004. *B cubed Timber Sale Soils Report*. Cascades Resource Area, Salem District, Bureau of Land Management. Salem, OR.

Roberts, Dave. 2004. *B cubed Timber Sale Environmental Assessment Fisheries and Aquatic Habitat*. Cascades Resource Area, Salem District, Bureau of Land Management. Salem, OR.

USDA. Forest Service, USDI. Bureau of Land Management. March 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*. Portland, OR (SSSP).

USDA. Forest Service, USDI. Bureau of Land Management. January 2004. *Supplemental Environmental Impact Statement to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines*. Portland, OR. (SSSP/SEIS)

USDA. Forest Service, USDI. Bureau of Land Management. 2003. *Implementation of 2002 Survey and Manage Annual Species Review IM#2003-050*. Portland, OR.

USDA, Forest Service; USDI. Bureau of Land Management. April 2004. *DRAFT Biological Assessment on Fiscal Year 2005-2006 projects within the Willamette Province which would modify the habitats of the bald eagle and the northern spotted owl*

USDA, Forest Service; USDI, Bureau of Land Management. December 2003. *Programmatic Biological Assessment for Activities with the Potential to Disturb Northern Spotted Owls and/or Bald Eagles in the Willamette Province for FY 2004-2005*.

USDA. Forest Service, USDI. Bureau of Land Management. June 14, 2002. *Implementation of 2001 Survey and Manage Annual Species Review*. BLM Information Bulletin No. OR-2002-064. California, Oregon, and Washington.

USDA. Forest Service, USDI. Bureau of Land Management. 2001. *Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation measures Standards and Guidelines*. Portland, OR.

USDA. Forest Service, USDI. Bureau of Land Management. 1994. *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*. Portland, OR. (NWFP)

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. (NWFP/SEIS)

USDI. Bureau of Land Management. 2003. *Oregon and Washington Bureau of Land Management Special Status Species Policy*. BLM Instruction Memorandum No. OR-2003-054. Oregon State Office, Portland, OR.

USDI. Bureau of Land Management, USDA. Forest Service. 1999. *Molalla River Watershed Analysis*. Salem District, Cascades Resource Area, Salem, OR. (MWRA)

USDI. Bureau of Land Management, USDA. Forest Service; USDA, Natural Resources Conservation Service. 1998. *Riparian Area Management: Process for Assessing Proper Functioning Condition and the Supporting Science for Lotic Areas*. TR 1737-15-98, Denver, CO.

USDI. Bureau of Land Management. 1995. *Salem District Record of Decision and Resource Management Plan*. Salem, OR. (RMP)

**Table 7: Summary of RMP References**

<b>RMP Topic</b>	<b>RMP page #</b>
Air Quality	p. 22
Aquatic Conservation Strategy	pp. 5-7
Best Management Practices	Appendix C pp. C-1 to C-9
Cultural Resources	p. 36
Fire/ Fuels Management	pp. 65-67
Major Land Use Allocations	pp. 7-9
Matrix Land Use Allocation	pp. 20-22
Invasive nonnative plants	p. 64
Recreation	pp. 41-45
Riparian Reserve Land Use Allocation	pp. 9-15
Roads	pp. 62-64
Rural Interface Areas	pp. 39-40
Silvicultural Systems and Harvest Methods	Appendix D pp. D-1 to D-6
Special Forest Products	pp. 49-50
Special Status and SEIS Special Attention Species and Habitat –amended March 2004- see SSSP	pp. 29-33; Appendix B-1 pp. B-1-1 to B-1-7; Appendix B-2 pp. B-2-1 to B-2-2
Timber Resources	pp. 46-48
Visual Resources	pp. 36-37
Water and Soils	pp. 22-24
Wild and Scenic Rivers	pp. 37-38
Wildlife Habitat	pp. 24-26
Wilderness	pp. 38-39

USDI. Bureau of Land Management. September 1994. *Salem District Proposed Resource Management Plan/Final Environmental Impact Statement*. Salem, OR. (RMP/FEIS).

## 6.2 Common Acronyms

ACS – Aquatic Conservation Strategy  
 B3AF – B cubed Timber Sale NEPA/EA Analysis File  
 BLM – Bureau of Land Management  
 BMP – Best Management Practice(s)  
 BSS – Bureau Sensitive Species  
 BO – Biological Opinion

BRNO – *Bridgeoporus nobilissimus*  
CWD – Coarse Woody Debris  
DBH – Diameter Breast Height  
DF – Douglas-fir  
EA - Environmental Assessment  
ESA – Endangered Species Act  
FONSI – Finding of No Significant Impact  
GFMA – General Forest Management Area land use allocation (Matrix)  
LSRA – Late Successional Reserve Assessment (1996)  
LWD – Large Woody Debris  
NEPA – National Environmental Policy Act (1969)  
NOAA – National Oceanic Atmospheric Administration (National Marine Fisheries Service (NMFS) is now called NOAA Fisheries)  
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)  
ODFW – Oregon Department of Fish and Wildlife  
RMP – *Salem District Record of Decision and Resource Management Plan* (1995)  
RMPFEIS – *Salem District Proposed Resource Management Plan / Final Environmental Impact Statement* (1994)  
ROS – Rain-on-snow  
ROW – Right-of-Way (roads)  
RR – Riparian Reserves (land use allocation)  
SPZ – Stream Protection Zone (no-cut protection zone/no-cut buffer/no-treatment zone/stream buffer)  
USDI – United States Department of the Interior  
USFWS – United States Fish and Wildlife Service  
WH – western hemlock

## 7.0 APPENDICES

### 7.1 Appendix 1. Determination of Effect for Upper Willamette River steelhead trout and Upper Willamette River chinook salmon. B Cubed Timber Sale.

CHECKLIST FOR DOCUMENTING ENVIRONMENTAL BASELINE AND EFFECTS OF PROPOSED ACTION(S) ON RELEVANT INDICATORS FOR THE WILLAMETTE PROVINCE

Administrative Unit: Salem District BLM

Basin/Section 7 Watershed: Upper Molalla River

Project: B Cubed Timber Sale

FACTORS INDICATORS	ENVIRONMENTAL BASELINE			EFFECTS OF THE ACTION(S)		
	Properly Functioning	At Risk	Not Proper. Functioning	Restore	Maintain	Degrade
<u>Water Quality:</u> Temperature					X	
Sediment/Turbidity					X	
Chem. Contam./Nutrients					X	
<u>Habitat Access:</u> Physical Barriers					X	
<u>Habitat Elements:</u> Substrate					X	
Large Woody Debris (LWD)					X	
Pool Frequency					X	
Pool Quality					X	
Off-Channel Habitat					X	
<u>Channel Cond. &amp; Dynamics:</u> Width/Depth Ratio					X	
Streambank Condition					X	
Floodplain Connectivity					X	
<u>Flow/Hydrology:</u> Peak/Base Flows					X	
Drainage Network Increase					X	
<u>Watershed Condition:</u> Road Dens. & Location						X (slightly)
Disturbance History					X	
Riparian Reserves					X	

#### 7.1.1 Water Quality

##### 1. Temperature

Temperature in all streams would be maintained by minimum no-harvest buffers of 50 feet along any streams, with full retention of Riparian Reserves (RR) along most of the streams in the project

area. One spur road is proposed for construction across an ephemeral stream channel within Unit 8, but the channel is dry during most of the year, especially during the summer months when water temperature increases could occur.

## 2. **Sediment/turbidity**

The following project design criteria and site conditions are expected to prevent any increase in sediment input to stream channels or any increase in stream turbidity:

- Thinning only proposal, with average post-project leave tree densities of 50 trees per acre throughout the project area.
- Limited harvest activity within RR (approximately 35 acres), with **only about five acres within 100 feet of a stream channel**.
- Minimal road construction included in the proposal, with new roads designed to prevent sediment input to streams.
- Predominantly dry season timber hauling, with any wet season hauling subject to suspension when an elevated risk of water and sediment flowing in roadside ditches exists.
- Vegetation in roadside ditches would be left intact.
- Slopes of less than 35% throughout most of the project area. Maximum slopes of **45%** on portions of the units in Section 1 and 15.
- Approximate distance of 3 miles downstream from most of project area to ESA listed fish habitat. Distance from Unit 8 downstream to ESA listed fish habitat is only approximately 0.25 mile, but the only perennial stream channel adjacent to Unit 8 would have a full site potential tree height buffer.

## 3. **Chemical contamination/nutrients**

No activities associated with the project would increase chemical or nutrient inputs except a low probability event such as an accidental spill or vehicle accident.

### 7.1.2 **Habitat Access**

## 4. **Physical Barriers**

No barriers to fish migration would result from the project.

### 7.1.3 **Habitat Elements**

## 5. **Substrate, Large Woody Debris, Pool Frequency, Pool Quality, Off-channel Habitat**

No project activities would be sufficiently close to the stream channel or create enough of a disturbance to affect any of the above instream habitat elements in the streams within the project area.

### 7.1.4 **Channel Conditions and Dynamics**

## 6. **Width/depth ratio, Streambank Condition, Floodplain Connectivity**

No project activities would be sufficiently close to the stream channel or create enough of a disturbance to affect any of the above channel conditions on stream channels within the project area.

### 7.1.5 Flow/Hydrology

#### 7. Peak/base Flows

A preliminary analysis of the risk of increases in peak flows as a result of forest harvest was conducted using the Oregon Watershed Assessment Manual watershed analysis methods for forest hydrology. Current conditions in the project area indicate that there is a “potential risk” that peak flow enhancement is currently occurring in the Pine Creek and Bear Creek 6<sup>th</sup> field watersheds where most of the proposed units are located. However, since the proposed action will maintain all treated stands at no less than 40 percent crown closure, this proposal results in no additional risk. For a detailed analysis of the potential effects of the project on peak/base flows see the Hydrology section of the Environmental Consequences (Chapter 4) of the Environmental Assessment.

#### 8. Drainage Network Increase

There would be no changes in the drainage network as a result of the project since there would be no road construction that would contribute increasing the drainage network. Although one spur road that would be built across an ephemeral stream channel, the original channel contour and grade would be reestablished upon project completion.

### 7.1.6 Watershed Conditions

#### 9. Road Density & Location

The project would result in a very slight change in road density. The proposed new road is on stable, midslope locations. One crossing of an ephemeral, low gradient channel is proposed, but that crossing is expected to have no impact on the aquatic system since it would be constructed and used only during the dry season and would be recontoured after use.

#### 10. Disturbance History

The project would not result in an increased level of disturbance. Post-project stand densities would average 50 TPA; no potentially disturbing activities would occur in unstable areas or refugia for sensitive aquatic species.

#### 11. Riparian Reserves

Only about 35 acres of RR thinning are proposed, with only about five acres within 100 feet of a stream channel. The RR thinning is expected to enhance forest habitat conditions by increasing the growth rates of leave trees and enhancing vegetation diversity and structure. The spur road proposed for construction across an ephemeral stream channel is not expected to degrade riparian conditions.

The project is expected to have ‘**no effect**’ on any of the factors evaluated in Table 1, Matrix of Pathways and Indicators, other than a very slight increase in road density by construction of 3300 feet

of natural surface road. The project is expected to have '**no effect**' on Upper Willamette River chinook salmon or Upper Willamette River steelhead trout.

The project is also expected to have '**no effect**' on Essential Fish Habitat as defined in the Magnuson-Stevens Act.

## 7.2 Appendix 2: Aquatic Conservation Strategy Objectives Review Summary (RMP pages 5-6) for the B cubed Timber Sale

ACS Objectives	Remarks
<p>Maintain and restore distribution, diversity, and complexity of watershed and landscape features to ensure protection of aquatic systems.</p> <p><i>Both the Action and No Action Alternatives do not retard or prevent the attainment of ACS objective 1</i></p>	<p>No Action Alternative: The No Action alternative would maintain the development of the existing vegetation and associated stand structure at its present rate. The current distribution, diversity and complexity of watershed and landscape-scale features would be maintained.</p> <p>Action Alternative: The proposed variable thinning including denser portions of the Riparian Reserves would result in forest stands that exhibit attributes typically associated with stands of a more advanced age and stand structural development (larger trees, a more developed understory, and an increase in the number, size and quality of snags and down logs). Since Riparian Reserves provide travel corridors and resources for aquatic, riparian dependant and other late-successional associated plants and animals, the increased structural and plant diversity would ensure protection of aquatic systems by maintaining and restoring the distribution, diversity and complexity of watershed and landscape features.</p>
<p>Maintain and restore spatial connectivity between watersheds.</p> <p><i>Both the Action and No Action Alternatives do not retard or prevent the attainment of ACS objective 2</i></p>	<p>No Action Alternative: The No Action alternative would have little effect on connectivity except in the long term within the watershed.</p> <p>Action Alternative: Long term connectivity of terrestrial watershed features would be improved by enhancing conditions for stand structure development. In time, these reserves would improve in functioning as refugia for late successional, aquatic and riparian associated and dependent species.</p> <p>Removal of existing culverts and use of organic material for the ephemeral stream crossing would not hinder movement of aquatic species; therefore, no aquatic barriers would be created.</p> <p>Both terrestrial and aquatic connectivity would be maintained, and over the long-term, as Riparian Reserves develop late successional characteristics, lateral, longitudinal and drainage connectivity would be restored.</p>
<p>Maintain and restore physical integrity of the aquatic system including shorelines, banks and bottom configurations.</p> <p><i>Both the Action and No Action Alternatives do not retard or prevent the attainment of ACS objective 3</i></p>	<p>No Action Alternative: It is assumed that the current condition of physical integrity would be maintained.</p> <p>Action Alternative: This proposal is unlikely to alter the current condition of channels in the project area and some improvement is expected over the long term. Moving ditch and road runoff onto stable forested slopes outside the Riparian Reserves by drivable waterbars and replacing culverts with armored stream fords on road 7-3E-15 is likely to maintain and restore bank and bottom configurations.</p>
<p>Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems.</p> <p><i>Both the Action and No Action Alternatives do not retard or prevent the attainment of ACS objective 4.</i></p>	<p>No Action Alternative: It is assumed that the current condition of the water quality would be maintained.</p> <p>Action Alternative: No entry buffers in Riparian Reserves would be maintained (minimum of 50 feet in treatment areas and from 180 to 220 feet in untreated areas). The proposed roads are on ridgetop or midslope locations with no hydrologic connections or proximity to streams or riparian areas. The one ephemeral stream road crossing would be filled with a natural material and removed after one season. Installing waterbars and armored crossings is proposed to eliminate and/or limit acceleration of sediment delivery to streams in the project area over the long-term. As a result, it is unlikely that this proposal would lead to a measurable change in water quality, including increases in sediment delivery to streams, stream turbidity, stream temperatures or dissolved oxygen levels, or the alteration of stream substrate composition, or sediment transport regime in project area streams.</p>

ACS Objectives	Remarks
<p>Maintain and restore the sediment regime under which the system evolved.</p> <p><i>Both the Action and No Action Alternatives do not retard or prevent the attainment of ACS objective 5.</i></p>	<p>No Action Alternative: It is assumed that the current levels of sediment into streams would be maintained.</p> <p>Action Alternative: No entry buffers in Riparian Reserves would be maintained (minimum of 50 feet in treatment areas and from 180 to 220 feet in untreated areas). Dry season hauling from Section 15 would minimize sediment delivery. After the sale short-term localized increases in stream sediment can be expected during culvert removal and armoring stream crossings on road 7-3E-15, but BMPs and mitigation measures would be implemented to limit acceleration of sediment delivery to streams. No sediment is expected from the one ephemeral stream crossing after one season. As a result, it is unlikely that this proposal would lead to a measurable change in sediment regime, including increases in sediment delivery to streams, stream turbidity, or the alteration of stream substrate composition or sediment transport regime.</p>
<p>Maintain and restore in-stream flows.</p> <p><i>Both the Action and No Action Alternatives do not retard or prevent the attainment of ACS objective 6.</i></p>	<p>No Action Alternative: No change in in-streams flows would be anticipated.</p> <p>Action Alternative: A preliminary analysis for the risk of increases in peak flow as a result of forest harvest was conducted using the Oregon Watershed Assessment Manual watershed analysis methods for forest hydrology (OWEB, 1997). Because the proposed project will remove less than half the existing forest cover, it is unlikely to produce any measurable effect on stream flows. Within riparian zones, substantial portions of the riparian canopy would be retained, therefore maintaining riparian microclimate conditions and protecting streams from increases in temperature.</p>
<p>Maintain and restore the timing, variability, and duration of flood plain inundation and water table elevation in meadows and wetlands.</p> <p><i>Both the Action and No Action Alternatives do not retard or prevent the attainment of ACS objective 7.</i></p>	<p>No Action Alternative: The current condition of flood plains and their ability to sustain inundation and the water table elevations in meadows and wetlands is expected to be maintained.</p> <p>Action Alternative: There would be no alteration of any stream channel, wetland or pond morphological feature. All operations, equipment and disturbances are kept a minimum of 50 feet from all wetlands and stream channels. Thus, the current condition of floodplain inundation and water tables would be maintained.</p>
<p>Maintain and restore the species composition and structural diversity of plant communities in riparian zones and wetlands to provide thermal regulation, nutrient filtering, and appropriate rates of bank erosion, channel migration and CWD accumulations.</p> <p><i>Both the Action and No Action Alternatives do not retard or prevent the attainment of ACS objective 8.</i></p>	<p>No Action Alternative: The current species composition and structural diversity of plant communities will continue along the current trajectory. Diversification will occur over a longer period of time.</p> <p>Action Alternative: The proposed action would have no adverse effects on species composition and structural diversity of plant communities in riparian areas and wetlands due to treatment buffers varying from a minimum of 50 feet in treatment areas, to the full Riparian Reserve in no treatment areas. The Riparian Reserve treatments outside of these 50 foot buffers would help to restore species composition by allowing more understory development and structural diversity by creating horizontal and vertical variations that are currently lacking in the riparian treatment areas.</p>

ACS Objectives	Remarks
<p>Maintain and restore habitats to support well-distributed populations of native plant, invertebrate, and vertebrate riparian dependent species.</p> <p><i>Both the Action and No Action Alternatives do not retard or prevent the attainment of ACS objective 9.</i></p>	<p>No Action Alternative: Habitats will be maintained over the short-term and continue to develop over the long-term with no known impacts on species currently present.</p> <p>Action Alternative: The proposed action would have no adverse effect on riparian dependent species. Although thinning activities may affect invertebrates within the treatment areas, adjacent non-thinned areas should provide adequate refugia for the species. In the long term, the treatments would restore elements of structural diversity to treatment areas in Riparian Reserves. These attributes would help to provide resources currently lacking or of low quality, and over the long-term, would benefit both aquatic and terrestrial species.</p>

### 7.2.1 Appendix 3: Scoping Letter Comments

In compliance with NEPA, the project has appeared in the *Salem District Project Update* since September 2000 and in editions since then, which were mailed to over 1,000 addresses. A scoping letter dated March 12, 2004 was sent to 46 potentially affected and/or interested individuals, groups, and agencies. – One letter was received during the scoping period. This letter is available for inspection in the project development file at the Salem District office. The following concerns were raised by this letter as a result of scoping:

*1. Support for 'variable thinning in young stands'*

This will be a variable thinning and will help diversify the stand and increase options for the future. It will also include the creation of small gaps which help diversify within the stand and create other habitats that are now absent.

*2. All large, old snags should be retained; come back and create more snags.*

Large, old snags will be retained through arrangement of residual trees and location of boundaries. Safety requirements may require that some snags are removed, but that number is expected to be low. In the future snags will be created throughout the stand, especially the riparian areas, to create habitat for the myriad of species which utilize them. We also expect that thinning the trees will result in larger diameter trees earlier that will be available for future snags.

*3. RMP and NFP are not adequate to protect legacy features; RMP and NFP rely on outdated data that is no longer valid, especially due the presence of more thorough research and management recommendations. Legacy features of native forests are structurally the most important for habitat*  
The project follows the standards and guidelines set forth in the documents. We realize new research is being done, but it has not been incorporated into standards and guidelines. Perhaps, under the new plan revisions this body of research will be considered.

*4. Road construction - roads channelize water, cause erosion, and conduct invasive weeds.*

Road construction was minimized for this project. Some areas will be left untreated rather than building a road so every inch of the matrix land is operable. There was no road accessing the unit in section 15 since the adjoining lands were at one time private lands.

*5. BLM develop an alternative with no new road construction.*

Road construction is limited to the minimum amount necessary to facilitate operations. This limitation was accomplished by utilizing pre-existing skid trails and placing thinning boundaries within accessible areas.