Power Mill Thinning Timber Sale

Final Decision and Decision Rationale (DR)

Environmental Assessment (EA) Number DOI-BLM-OR-S040-2010-0007-EA

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

Willamette Meridian,

T. 9 S., R. 2 E. sections 11, 13, and 25;

T. 9 S., R. 3 E. sections 17, 19, and 21

Little North Santiam River and Middle North Santiam River 5th field Watersheds
Marion County Oregon

Responsible Agency:	USDI - Bureau of Land Management
Responsible Official:	Cindy Enstrom, Field Manager Cascades Resource Area 1717 Fabry Road SE Salem, OR 97306 (503) 375-5969
For further information, contact:	Carolyn Sands Cascades Resource Area 1717 Fabry Road SE Salem, OR 97306 (503) 315-5973

BLM
Salem District

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BLM/OR/WA/AE-12/025+1792

1.0 Introduction

The Bureau of Land Management (BLM) has conducted an environmental analysis for the Power Mill Thinning project, which is documented in the *Power Mill Thinning Environmental Assessment (EA) and Finding of No Significant Impact (FONSI)*. This EA is incorporated here by reference in this Final Decision, Decision Rationale, and Finding of No Significant Impact (DR). I signed a draft Finding of No Significant Impact on April 3, 2012 and made the EA available for public review from April 11, 2012 to May 11, 2012 (DR section 6.0). Substantive comments received during the public review period are addressed in DR section 10.0.

2.0 Decision

I have decided to implement the Power Mill Thinning Timber Sale as a timber sale consisting of the following units analyzed in the EA: 11A, 11B, 11C, 11D, 11E, 13A, 17A, 17B, 19A, 19B, 19J, 21A, 25A, 25B, and 25C (pp. 18-30) (DR Table 3)[1]. The following is a summary of the decision, hereafter referred to as the "selected action" in this Decision Rationale (DR). The selected action will:

Commercial Thinning:

- Thin approximately 354 acres (DR Table 3, DR section 8.0). This harvest includes:
  - Thinning 348 acres (DR Table 3) to a density of 70-120 trees per acre (TPA) (EA p. 37).
  - Low Density Thinning Patches: Thinning 6 acres to a density of 10-12 TPA (EA p. 19, DR Table 3, DR section 9.0 – maps). There will be 7 low density patches (5 patches will be 1 acre and 2 patches will be ½ acre). See Table 6.

  Approximately 66 percent (235 acres) of the area will be logged using ground based yarding systems. The remaining 34 percent (119 acres) will be logged with a skyline yarding system.

New Road Construction:

- Construct approximately 2.43 miles of new road (2.16 on BLM land and 0.27 on private lands) to provide access to the thinning units for logging and hauling. New construction includes clearing vegetation within the road right-of-way (r-o-w) using ground based logging equipment. Clearing will average less than 30 feet wide.

  Little North Santiam (LNS) Watershed (Units in sections 11, 13): The BLM will construct 1.1 miles of new road in the Little North Santiam and decommission 0.78 mile of road after logging operations (see Table 3).

  All of the new road construction will be decommissioned in these units, except P10 and P11 in unit 2 (see DR Maps).

  Road Decommissioning consists of the following actions:

[1] DRTable 3 (*DR section 8.0*) shows the selected action by section and the crossover between EA and Timber sale units. The maps (*DR section 9.0*) show the selected action by section.

- Decompacting the road surface to approximately 4-6" depth by tilling or roughening the surface;
- Seeding with native plant species and mulching with logging slash or approved sterile mulch to establish effective ground cover prior to the wet season;
- Reestablishing natural drainage patterns by removing all culverts, using water bars or other drainage features to prevent water erosion of exposed soil; and
- Blocking vehicle access, typically with earth/debris barricades.

If these roads need to overwinter to provide access for fuel treatments, they will be stabilized as necessary to prevent erosion and sediment transport. Intermediate stabilization techniques will be determined for each road upon inspection by BLM engineering staff.

The BLM will retain 0.32 mile of new road construction to provide long- term access to private and BLM managed lands. This mileage includes BLM Road spurs P10 and P11 (0.23 miles), because these spurs are ridgetop roads on stable ground with no hydrological connectivity, and provide stable access to the units. The total mileage retained also includes 0.09 mile of new road construction on private land because these roads are located on ridge tops or flat benches on stable ground, and the private landowners require BLM to leave roads constructed on their land for their future logging operations as part of a license agreement. These locations are behind private gates.

The retained road construction will be blocked and stabilized after operations. The BLM is in compliance with the "no net increase in road mileage" in this watershed because there is still a net decrease in road mileage during the RMP planning cycle. The BLM decommissioned[2] approximately 1.2 miles of existing BLM roads in the Little North Santiam River Tier 1 Watershed in 1999. Approximately 0.34 mile of this decommissioning will be applied to the Power Mill project, see Table 4 and Table 5 (DR section 8.0).

Middle North Santiam (MNS) Watershed (Units in sections 19, 21): BLM will construct 1.33 miles of new road in the Middle North Santiam. New road construction will be blocked and stabilized after operations to prevent erosion. This work includes shaping the road surface to drain water onto stable vegetated slopes, tilling as needed to provide a seedbed, seeding with native species to vegetate disturbed soil, covering the roadbed with logging slash and debris or other suitable material to provide additional stability, and blocking these roads to prevent unauthorized vehicle use after logging.

Some stabilization measures may be delayed until after fuel treatments are accomplished if the BLM determines that delay will not cause erosion and sediment production. The subgrade will be left intact so that the road could be renovated for future use.

[2] (Culverts removed, shaped for drainage, subgrades ripped, revegetated and blocked)

Road Renovation

- Renovate approximately 2.8 miles of existing roads. Renovation brings existing roads up to safe timber haul standards by adding rock, blading and shaping the road, cleaning ditches and culverts, and cutting roadside brush. These roads have a visible road prism for most of their lengths, and have only low growing vegetation such as ferns, Oregon grape, and salal growing in the road prism. Brush will be removed where it is growing adjacent to the road prism and branches are encroaching over the road surface.

  The selected action will replace culverts at approximately 11 stream crossings where log fills or under-sized culverts are failing or are in danger of failing in sections 11, 13, and 19. All proposed culvert work will be done during the dry season (Oregon Dept. Fish & Wildlife in-stream work period in the project area is July 15– August 31) when most of these streams have very low or no flow. After the completion of project operations, the BLM will stabilize seed and mulch disturbed soils within the right-of-way.

Road Maintenance:

- Maintain existing roads along the timber haul route.

Fuels Treatment:

- Reduce fuels on up to 30 acres as shown in Table 1. Treatments include: creating, covering and burning landing piles; machine piling, covering and burning slash in the low density thinning areas; and creating fuel reduction corridors adjacent to roads which are open to the public and private plantations by pulling slash and logs less than six inches in diameter back into the units. Fuel reduction corridors will be 50 feet wide adjacent to private plantations and to roads with public access.

Table 1: Fuels Treatment Methods

Section	Treatment
9S-2E-11	Machine pile, cover and burn approximately 5 acres within the low density thinning areas (3 acres section 11).
9S-2E-13, 25 9S-3E-17, 19	Machine pile, cover and burn landing piles.
9S-3E-21	Machine pile, cover and burn landing piles. Machine pile, cover and burn approximately 4 acres within the low density thinning areas. Slash pull-back (50') along property lines

The total amount of slash debris expected to be piled for burning is estimated to be between 400 and 1400 tons. Burning will be done after the fall rains begin and soils are damp. All burning will be done in compliance with Oregon Smoke Management requirements.

There are two potential scenarios that could reduce the amount of slash and woody debris burned in landing piles:

- Some of the slash may be used as mulch to cover roadbeds during stabilization (see EA section 2.2.2).

- Some of the material may be removed as biomass for energy production, though the BLM considers this to be unlikely because there is little or no foreseeable market for this material during the time of the Power Mill Thinning project.

Special Forest Products:

Make permits available for collecting Special Forest Products (SFP) (1995 RMP p. 49) from the harvest units if there is a demand for the products and collection will not interfere with project operations. Special Forest Products are salable natural products that can be found in the forest and may include: edible mushrooms, firewood, posts and poles. Transplants of native plants from road rights-of-way, skid trail locations and landings will be available for permit. Access to the area will be controlled through the Special Forest Products permit requirements.

Design Features

Project Design Features described in *EA* section 2.2.3 (EA pp. 25-30) will be incorporated into the Timber Sale contract. Here is a summary of project design features that address concerns raised in the EA public comments:

The selected action will:

- Maintain an average of at least 50 percent canopy cover of retained dominant and co-dominant trees (typically ranging from 55-70 percent) following thinning.
- Not disturb stream protection zones, except road renovation work (e.g. culvert replacement) within the road right-of-way at stream crossings. See Table 2.

Table 2: Stream Protection Zones for the Selected Action

Unit	Distance to ESA listed fish (miles) (EA p 63)*	Protection zone width (feet each side of the stream)	
		Intermittent Streams	Perennial Streams
Units 1-5 (11A-E)	0.5 - 1.0	50	100
Unit 6 (13A)	0.5	50	No perennial streams
Units 7-8 (17A-B)	1.0	50	No perennial streams
Unit 9 (21A)	1.2	30	100+
Units 10-13 (19A-B)	2.4, 2.2	30	100
Unit 14 (19J)	2.2	30	70
Units 15-17 (25A-C)	1.1	30	85-100
Perennial Stream on south end of 25B	1.1		70

*Fish Listed under the Endangered Species Act

- Prevent unauthorized off-highway motor vehicle (OHV) use by blocking access with debris, gates, or berms. Roads would be able to be re-opened for use by fire-fighting equipment (EA PDF #7).
- Re-use existing skid trails (EA PDF #10).
- Locate burn piles away from powerlines, and to minimize heat damage to reserve tree crowns and boles (EA PDF #19,20).

- Capture and re-route stream flow during culvert replacement (EA PDF #23).
- Locate roads on gentle slopes so as to avoid cut-and-fill (EA PDF #24).
- Visually monitor stream crossings for turbidity during log hauling (EA PDF #26).
- Use sediment control measures and water bars to prevent erosion and sediment transport to streams (EA PDF #27, #28).
- Decommission [most] newly constructed roads in the Little North Santiam watershed (EA PDF #32).
- Retain, mark, and protect old growth trees (EA PDF #34).
- Retain and protect existing CWD (EA PDF #36).
- Avoid damaging retained trees (EA PDF #38).
- Restrict or suspend operations if protected species are found (EA PDF #42).

3.0 Alternatives Considered

1. No Action (EA section 2.4, EA p. 31): No commercial timber management actions will occur. Only normal administrative activities and other uses (e.g. road use, programmed road maintenance, harvest of special forest products on public land) will continue on BLM land within the project area.

2. Proposed Action (EA section 2.2, EA pp. 18-31): The proposed action analyzed in the EA is a proposal to thin approximately 615[3] acres of 45-78 year old forest stands. Approximately 328 acres are in General Forest Management Area (GFMA) LUA and 287 acres are in the Riparian Reserve LUA. The proposed action includes 334 acres of ground based yarding and 281 acres of skyline yarding. Connected Actions include constructing 3.9 miles of new road provide access to the proposed thinning units for logging and hauling. New construction includes clearing vegetation within the road right-of-way (r-o-w) using ground based logging equipment. Connected actions also include renovating approximately 8.4 miles of existing roads, replacing culverts at approximately 18 stream crossings where log fills or under-sized culverts are failing or are in danger of failing in sections 11, 19, and 29; and reducing forest fuel accumulations on approximately 30 acres.

3. Alternatives Considered But Not Analyzed In Detail (EA sections 2.5, 2.6, EA pp. 31-32):

    - Treatment of other forest stands within the Riparian Reserve LUA; Riparian Reserve stands that did not meet the following conditions were dropped from further consideration for treatment. 1) If the stand has a simple structure that will benefit from thinning to accelerate development of elements of complex structure for habitat enhancement; and

[3] This acreage includes units in section 29, which are not part of the selected action.

2) If the stand can be treated in conjunction with the adjacent Matrix unit using only existing roads and roads that will be constructed to manage Matrix land (no road construction for the sole purpose of treating Riparian Reserve stands).

- Two units (23A and 23B) were originally proposed that were 72 and 98 years old. These units were determined to not be good candidates for thinning due to a low relative density, and potential impacts to spotted owls. Several potential units in T9S, R3E, section 19 were dropped from consideration early in the IDT evaluation process due to the large number of streams in the area.

- An additional unit was considered for treatment in T9S, R3E, section 13. The silviculturists on the IDT determined that tree size and density in the stand is not yet suitable for commercial thinning.

- An alternative that will manage stands for carbon storage was not analyzed in detail for reasons described in EA section 2.4 and that this alternative will have the same effects as the No Action alternative;

- BLM considered renovating that portion of road 9-3-12.1 east of Jeeter Creek to access an additional 29 acres of thinning in unit 11E and allow haul to the east on Jeeter Creek road. Renovating this road segment will include replacing one elongated 60 inch diameter culvert on Jeeter Creek and one standard 48 inch diameter culvert on Kiel Creek. This alternative was not analyzed in detail due to the potential impacts to fisheries.

4. Selected Action (DR sections 2.0, 8.0, DR Table 3): The selected action is described in DR sections 2.0 and 8.0, DR Table 3).

4.0 Decision Rationale

I used the following factors in selecting the alternative that best meets the purpose and need and decision factors described in EA. The following is a comparison of the alternatives with regard to the Decision Factors described in EA section 1.2.4 and the project objectives in EA section 1.2.2.

1. Provide timber resources to the market and revenue to the government from the sale of those resources (objectives 1 and 2);
2. Provide for economically efficient short-term and long-term management of public lands in the project area (objectives 2 and 8);
3. Provide for safe, economically efficient and environmentally sound access for logging operations, fire suppression and administration on public lands (objectives 2, 4 and 8);

   The no action alternative does not meet decision factors 1-3 since no timber sale will take place. The selected action meets these factors by providing timber resources to the market and will use commonly used silvicultural, transportation and logging practices that BLM experience with past timber sales has shown to be cost effective, providing revenue with reasonable logging costs (EA section 2.2.1; 2.2.2; 2.2.3).

4. Provide for increased survival and growth of conifer species while retaining structural and habitat components, such as large trees, snags, and coarse woody debris (objectives 1, 3, 5, 6 and 7);

5. Provide habitat for special status, SEIS special attention and other terrestrial species associated with a variety of seral stages and forest stand characteristics in the vicinity of the project area (objectives 3, 5, 6 and 7);

   The no action alternative partially meets decision factors 4 and 5.

   Under the no action alternative, stand health and tree growth rates will decline if stands are not thinned. Competition will result in mortality of smaller trees in the stands, resulting in numerous snags and CWD that are too small to meet resource objectives (minimum 15 inches diameter for snags, minimum 20 inches diameter for CWD). Trees will continue to grow slowly until reaching suitable size for large woody debris, snags and late successional habitat. (EA sections 3.2.1, 3.2.5).

   The no action alternative continues to provide habitat for special status, SEIS special attention and other terrestrial species.

   The selected action will meet decision factors 4 and 5. Stand health and tree growth rates will be maintained as trees are released from competition. The alternative retains the elements described under "no action" on untreated areas of the stands in the project area and encourages development of larger diameter trees and more open stand conditions in treated areas. These conditions add an element of diversity to the landscape on BLM lands which is not provided under the No Action alternative. (EA sections 3.2.1, 3.2.5).

   The selected action will provide habitat for special status, SEIS special attention and other terrestrial species.

6. Provide for aquatic habitat and water quality/quantity by designing new roads and using all roads to avoid increasing the quantity of water and sediment delivered to streams (objectives 4 and 8);

   The no action alternative will partially meet decision factor 6 where existing roads are stable, though several stream crossings are eroding. The selected action meets decision factor 6 because roads will be maintained, reducing the risk of erosion and sedimentation associated with the existing road system, replacing culverts at stream crossings will reduce the amount of sediment currently associated with those crossings, and because new road construction will not cause sedimentation (EA sections 2.2.3, 3.2.2 and 3.2.3).

7. Minimize the potential for human sources of wildfire ignition and prevent large scale, intense wildfires in the project area (objectives 8 and 9).

   Both the no action and selected action meet decision factor 7 where closed roads block access. In the short term there will not be much change for risk of fire. Under the no action alternative, in the long term, suppression mortality and ladder fuels will continue to increase as the stand ages. The selected action will decrease suppression mortality and reduce ladder fuels.

Considering public comment, the content of the Power Mill Thinning EA, the supporting project record, and the management direction contained in the 1995 RMP, I have decided to implement the selected action as described in DR section 2.0. The following is my rationale for this decision:

1. No Action Alternative: I did not select this alternative because it either does not meet the project objectives described in EA section 1.2 (EA pp.11-14) and the decision factors described above, or delays the achievement of those project objectives / decision factors, compared to the selected action.

2. Proposed Action

   - I have selected EA units 11A, 11B, 11C, 11D, 11E, 13A, 17A, 17B, 19A, 19B, 19J, 21A, 25A, 25B, and 25C, with modified unit boundaries as the Power Mill Thinning Timber Sale, documented as the selected action (DR sections 2.0., 8.0).
   - I did not select EA units 29A and 29B (T. 8S. R 3E. section 29) because I plan to implement them in the Power House Thinning Timber Sale, which will be documented in a separate Decision Rationale document at a later time.

3. Selected Action: The selected action implements the Power Mill Thinning Timber Sale described in the DR section 2.0. The selected action:

   - Meets the purpose and need of the project as described in the Power Mill Thinning EA section 1.2 (EA pp. 10-13), and all decision factors (EA p. 13) as shown in DR section 4.0;
   - Is consistent with the Salem District Record of Decision and Resource Management Plan (RMP)and related documents which direct and provide the legal framework for management of BLM lands within the Salem District (EA pp. 17-18, DR sections 5.0, 7.1);
   - Will not have a significant impact on the affected elements of the environment beyond those already anticipated and addressed in the RMP/EIS (EA, pp. 5-10, DR section 7.1);
   - Is economically viable. This sale will produce revenue for the Federal Government and provide jobs for Oregonians.
   - Addresses the issues raised in EA section 1.4.2.
   - Uses existing roads and the minimum length of new roads for the transportation system to facilitate implementation of the project (DR section 2.0);
   - Meets Aquatic Conservation Strategy Objectives (EA pp. 102-106)
   - Meets the statutes, authorities and management direction described in EA sections 1.3.1, 3.2.10, and 3.2.11. Examples include Clean Water act, Clean Air Act, Endangered Species Act, O&C Act, Matrix and Riparian Reserve Objectives in the RMP, Survey and Manage Direction, Cultural Resources, and Invasive Species.

5.0 Compliance with Direction

The analysis documented in the Power Mill Thinning EA is site-specific and supplements analyses found in the *Salem District Proposed Resource Management Plan/Final Environmental Impact Statement*, September 1994 (RMP/FEIS). The Power Mill Thinning project, which includes the Power Mill Thinning Timber Sale, was designed under the *Salem District Record of Decision and Resource Management Plan***,** May 1995 (1995 RMP) and related documents which direct and provide the legal framework for management of BLM lands within the Salem District (EA pp. 13-16). All of these documents may be reviewed at the Cascades Resource Area office. The project also complies with authorities described in EA sections 1.3.1 and 3.3.10 and the Revised Recovery Plan for the Northern Spotted Owl (USFWS 2011).

The Power Mill Thinning Project conforms to the Salem District Resource Management Plan/Forest Land and Resource Management Plan as amended by the 2001 *Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (2001 ROD), as modified by the 2011 Settlement Agreement (*Conservation Northwest, et al. v. Rey, et al.*, No. 08-1067 (W.D. Wash.) July 2011, IM-OR-2011-063).

5.1 Land Use Plan Update

A final judgment was issued on 5/16/2012 concerning the Pacific Rivers Council V. Shepard litigation. The court vacated the Western Oregon Plan Revision (WOPR) Record of Decision, returning the management of the federal lands to the Northwest Forest plan, i.e. 1995 Resource Management Plans that were in place prior to December 30, 2008, as modified (i.e. Salem District RMP). The Northwest Forest Plan was incorporated into the 1995 Salem District RMP.

6.0 Public Involvement/ Consultation/Coordination

6.1 Scoping

The Interdisciplinary Team (IDT) of BLM resource specialists conducted internal scoping through the project planning process which includes record searches, on-site field examinations of the project area by IDT members, professional observation and judgment, literature review and IDT discussion. In the project planning process the IDT considered elements of the environment that are particular to this project as well as elements of the environment that are common to all similar timber management projects.

The BLM conducted external scoping for this project by means of a scoping letter sent out to approximately 76 federal, state and municipal government agencies, nearby landowners, tribal authorities, and interested parties on the Cascades Resource Area mailing list on April 13, 2010.

The BLM received approximately eight comment letters/emails during the scoping period. The scoping and EA comment letters/emails/postcards are available for review at the Salem District BLM Office. EA section 1.4.2 addresses the topics raised in the comments.

6.2 EA Comment Periods and Comments

BLM made the Power Mill Thinning EA and Draft FONSI (Finding of No Significant Impact) available for public review from April 11, 2012 to May 11, 2012. Four comment letters/emails/postcards were received during the EA comment period. These comments are available for review at the Salem District BLM Office, 1717 Fabry Rd. SE, Salem, Oregon. Response to substantive comments is described in DR section 10.0.

6.3 ESA Section 7 Consultation

1. U.S. Fish and Wildlife Service (USFWS)

EA section 5.1.1 describes consultation with USFWS. The Power Mill Thinning selected action may affect, but is not likely to adversely affect the northern spotted owl due to the modification of dispersal habitat. The Power Mill Thinning selected action will not affect spotted owl Critical Habitat or diminish the effectiveness of the conservation program established under the NWFP to protect the spotted owl and its habitat on federal lands within its range (EA p.108):

- The selected action will alter 354 acres of dispersal habitat. The habitat will be maintained as dispersal habitat after harvest (EA p. 82).
- Nineteen acres of dispersal habitat within 1.2 miles (provincial home range) of one known spotted owl site will be altered. The habitat will be maintained as dispersal habitat after harvest.
- No dispersal or suitable habitat will be downgraded by the project within or outside the provincial home range of any known spotted owl sites;
- None of the units are located in LSR or Critical Habitat for spotted owl;
- Current dispersal habitat conditions will be maintained after treatment on all of the acres in the selected action;
- 8 acres of dispersal habitat will be converted to linear openings as road rights-of-way (TS Units1, 2, 6, 9, 11, 12, 14; EA units 11A,B, 13A, 21A, 19A,B,J).

2. National Marine Fisheries Administration (NMFS)

Consultation with the National Marine Fisheries Service (NMFS) on effects of the Power Mill Thinning project on Upper Willamette River (UWR) Chinook salmon and UWR winter steelhead trout is not required because the thinning sale will have no effect on these species or on essential fish habitat.

Most thinning units are more than one mile upstream of steelhead and salmon habitat in the North Santiam and Little North Fork Santiam Rivers. Two project units are located 0.5 mile upstream of listed fish habitat.

No-disturbance buffer widths on tributaries within one mile of listed fish habitat of 100 feet on perennial streams, and 50 feet on intermittent 1st and 2nd order tributaries are more than adequate to maintain stream shading and thus water temperatures, and to prevent sediment delivery to listed fish habitat habitats.

Streams >1 mile from listed fish will have no-disturbance buffers of 70 to 85 feet, which will prevent sediment delivery and retain all stream shade in primary shade zones. This in conjunction with retaining >50 percent canopy closure in the secondary shade zone, will result in no change in stream temperatures of perennial headwater tributaries to the North Santiam and Little North Fork Santiam Rivers (Groom et al. 2011, Wilkerson et al. 2006, USFS and BLM, 2005).

Large wood (LW) levels in the two rivers will not be affected by the thinning project because tributary streams are too small to move LW to the rivers.

Steelhead trout and salmon habitat will not be impacted by log hauling as the haul routes are well graveled and hauling will be limited to summer and early fall when road surfaces are dry.

Additional project design features for the Power Mill Thinning project (EA section 2.2.3) which result in no effect to listed fish, particularly relative to preventing sediment delivery to listed fish habitat, include:

- meeting Northwest Forest Plan standards and guidelines and BMPs for protection of water quality;
- thinning from below, retaining most of the dominant/co-dominant trees;
- meeting or exceeding minimum stream protection zone widths (e.g. 100 feet on perennial streams and 50 feet on intermittent streams within one mile of LFH; and >70 feet on perennial and 30 feet on intermittent streams more than one mile from LFH);
- no felling of trees within the primary shade zone on perennial streams;
- retaining minimum 50 percent average canopy closure within the secondary shade zone;
- using existing landings and skid trails to the maximum extent possible;
- constructing new roads on stable, relatively flat topography;
- restricting culvert work to the in-water work period;
- implementing erosion control measures; and
- prohibiting timber transport on natural surface roads or rocked roads with stream crossings during the wet season.

7.0 Conclusion

7.1 Final Finding of No Significant Impact

I have made a final decision on the Power Mill Thinning Timber Sale project. The selected action is described in DR section 2.0. The Power Mill Thinning Environmental Assessment documents the environmental analysis of the proposed commercial thinning activity. The EA is incorporated by reference in this Finding of No Significant Impact determination. The analysis in this EA is site-specific and supplements analyses found in the Salem District Proposed Resource Management Plan/Final Environmental Impact Statement, September 1994 (RMP/FEIS).

The proposed thinning activities have been designed to conform to the Salem District Record of Decision and Resource Management Plan, May 1995 (1995 RMP) and related documents which direct and provide the legal framework for management of BLM lands within the Salem District (EA Section 1.3, DR Section 5.0). The EA and draft FONSI was made available for public review from April 11, 2012 to May 11, 2012. I received four comment letters and cards. Response to substantive comments is described in DR section 10.0.

Based upon review of the Power Mill Thinning EA and supporting documents, I have determined that the selected 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, supplemental or additional information to the analysis in the RMP/FEIS in the form of a new environmental impact statement is not needed. This finding is based on the following discussion:

Context [40 CFR 1508.27(a)]***:*** Potential effects resulting from the implementation of the selected action have been analyzed within the context of the project area boundaries, and the following 6th field watersheds: Lower Little North Santiam, Middle Little North Santiam, North Santiam River – Walker Creek, and the North Santiam River – Mad Creek. This project will affect approximately one percent of the 55,450 acre combined 6th field watersheds listed above.

Intensity refers to severity of impact [40 CFR 1508.27(b)]. The following text shows how that the selected action will not have significant impacts with regard to ten considerations for evaluating intensity, as described in 40 CFR 1508.27(b).

1. *[40 CFR 1508.27(b) (1)]* – **Impacts that may be both beneficial and adverse:** The effects of commercial thinning are unlikely to have significant (beneficial and adverse) impacts (EA section 3.0) for the following reasons:

    - *Project design features* described in EA section 2.2.3 will reduce the risk of effects to affected resources to be within RMP standards and guidelines and to be within the effects described in the RMP/EIS.

    - *Vegetation and Forest Stand Characteristics* (EA section 3.2.1): Effects to this resource are not significant because: 1/ the selected action will retain a forested environment with at least 40 percent canopy cover (see wildlife); 2/ the selected action will not adversely affect BLM Special Status or Survey & Manage Species because no suitable habitat for any species known or likely to occur will be lost or altered to a degree that may impact these species.

      Therefore, the project will not contribute to the need to list a species as Threatened or Endangered; and 3/ Noxious Weeds – Increases in the number of invasive/non-native plants are not expected with the application of Project Design Features. (EA section 2.2.3), and native species will naturally revegetate after thinning activities reducing the suitable habitat for invasive species.

    - *Hydrology; Fisheries and Aquatic Habitat; and Soils* (EA sections 3.2.2-3.2.4): Effects to this resource are not significant because: 1/ Road construction will occur on gentle slopes with stable, vegetated surfaces;

2/ Stream protection zones (70 to 100 feet on perennial streams, 30 to 50 feet on intermittent streams) will maintain current stream temperatures by retaining the current vegetation in the primary shade zone and most of the current levels of shading in the secondary shade zone. Stream protection zones (SPZ) are also expected to prevent sediment as a result of overland flow or surface erosion in logging units from reaching streams during storms of less than a 10 year return interval; 3/ Timber haul and road maintenance project design features will prevent turbidity increases at stream/road junctions from exceeding Oregon Department of Environmental Quality (ODEQ) requirements; and 4/ The selected action will meet ODEQ water quality standards.

- *Soils* (EA section 3.2.4): Effects to this resource are not significant because no measurable reduction in overall growth and yield in the thinning area will be expected because analysis and decades of BLM experience with similar projects demonstrate that soil compaction and road construction will cause little difference in the average tree spacing, site utilization or overall stand stocking.

- *Wildlife* (EA section 3.2.5): Effects to this resource are not significant because: 1/ Stands to be thinned are not presently functioning as late-successional or old growth habitat; 2/ Existing snags, remnant old growth trees and coarse woody debris (CWD) will be reserved. The small number (≤ 10 percent) of large (≥ 15 inches diameter and ≥ 15 feet tall) snags expected to be felled for safety or knocked over by falling and yarding operations will be retained as CWD; 3/ No suitable habitat type for BLM Special Status Species known or likely to be present will be eliminated. Therefore, the project will not contribute to the need to list any BLM Special Status species; 4/ Thinning will not significantly change species richness (a combination of species diversity and abundance) of the Migratory and Resident Bird community. No species will be extirpated in stands as a result of thinning; and 5/ See # 9, for effects to northern spotted owl.

- *Air Quality and Fire Hazard/Risk* (EA sections 3.2.6): Effects to this resource are not significant because the selected action will comply with State of Oregon Air Quality Standards by strict adherence to smoke management regulations. For example, pile burning will take place when wind and air movement patterns will dissipate smoke within one day, reducing the effect of smoke on air quality. Overall, the risk of a fire starting because of the selected action is expected to be low and the ability to suppress any fire that does start is good. Potential for human caused ignition will be reduced by treating the fuels most likely to be ignited by human activities, especially fine fuels adjacent to roads that are open to public access. Within one year fire risk will diminish as the highly flammable "red needles" drop and ground cover/understory vegetation "greens up".

- *Carbon Storage, Carbon Emissions and Climate Change* (EA section 3.2.7): Effects to this resource are not significant because the incremental increase in carbon emissions as greenhouse gasses that could be attributable to the selected action is of such small magnitude that it is unlikely to be detectable at global, continental or regional scales or to affect the results of any models now being used to predict climate change.

- *Recreation, Visual Resources, and Rural Interface* (EA section 3.2.8): Effects to this resource are not significant because changes to the landscape character will be low and will comply with Visual Resource Management guidelines because the project area will maintain a forested setting.

Some disturbance to vegetation will be observable after thinning activities and will be expected to develop an undisturbed appearance within five years. The selected action's effects on recreation are not significant access to BLM lands will remain unchanged from current conditions after operations are completed. Residents within rural interface areas were notified of thinning operations and these areas have historically experienced private timber management operations, thus no effect to this resource.

2. *[40 CFR 1508.27(b) (2)]* - **The degree to which the proposed action affects public health or safety:** The selected action will not adversely affect public health or safety because the public will be restricted from the project area during operations and the project will not create hazards lasting beyond project operations (Table 17, EA section 3.2.10).

3. *[40 CFR 1508.27(b) (3)]* - **Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas:** The selected action will not affect historical or cultural resources because all known cultural resources that require protection are outside of the unit boundaries and will not be affected by operations. Any cultural resources discovered in the future will be protected as determined by the BLM Archaeologist. The Selected action will not affect parklands, prime farmlands, wild and scenic rivers, wilderness, or ecologically critical areas because these resources are not located within the project area (EA Section 3.2.9).

4. *[40 CFR 1508.27(b) (4)]* - **The degree to which the effects on the quality of the human environment are likely to be highly controversial:** The selected action is not unique or unusual. The BLM has experience implementing similar actions in similar areas without highly controversial effects.

5. *[40 CFR 1508.27(b) (5)]* - **The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks:** The BLM has experience implementing similar actions in similar locations and has designed the project, including project design features, to avoid highly uncertain, unique and unknown risks (EA section 2.2.3). See # 4, above.

6. *[40 CFR 1508.27(b) (6)]* - **The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration:** The selected action will not establish a precedent for future actions nor will it represent a decision in principle about a further consideration for the following reasons: 1/ The project is in the scope of proposed activities document in the RMP EIS; and 2/ the BLM has experience implementing similar actions in similar areas without setting a precedent for future actions or representing a decision about a further consideration. See # 4, 5, above.

7. *[40 CFR 1508.27(b) (7)]* - **Whether the action is related to other actions with individually insignificant but cumulatively significant impacts:** The Interdisciplinary Team (IDT) evaluated the project area in context of past, present and reasonably foreseeable actions and determined that the selected action will be expected to temporarily increase stream turbidity as a result of culvert replacement, road renovation, road maintenance, road use and log fill removal (EA Sections 3.2.2 -3.2.4).

These effects are not expected to be significant because any turbidity increase resulting from thinning will be too small to be discernible relative to background turbidity, will not exceed ODEQ water quality standards, will dissipate within 800 meters downstream, and will decrease quickly over time, returning to current levels within minutes or hours. Cumulatively, the selected action and connected actions will be unlikely to result in any detectable change for water quality on a sixth or seventh field watershed scale and will be unlikely to have any effect on any designated beneficial uses, including fisheries (EA Section 3.2.3).

8. *[40 CFR 1508.27(b) (8)]* - **The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources:** The selected action will not affect these resources because the cultural resources inventory shows that the only cultural resources found in the project vicinity are either in locations not affected by the project or do not provide any new or unknown information regarding the historic logging period in the area. The remnants of an historic cabin in the vicinity are outside of the project unit boundaries. (EA section 3.2.9).

9. *[40 CFR 1508.27(b) (9)]* - **The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act (ESA) of 1973:** The selected action is not expected to adversely affect ESA listed species or critical habitat for the following reasons:

   - *ESA Wildlife - Northern spotted owl* (EA Section 3.2.5): Effects to the species are not significant because: 1/The project is not located in Late Successional Reserve, Critical Habitat, or stands which meet the criteria for Recovery Action 32 for the northern spotted owl; 2/ The project maintains dispersal habitat in 615 treated acres, and does not affect suitable owl habitat within and between known owl sites; 3/ Habitat conditions are expected to improve as thinned stands mature (>20 years); and 4/ Residual trees will increase in size and be available for recruitment or creation of large diameter (>15 inches) snags, culls and coarse woody debris (CWD) for prey species and nesting opportunities, particularly in Riparian Reserves, sooner than will be expected without treatment. ESA Consultation is described in EA section 5.1.1.

   - *ESA Fish – UWR Chinook salmon and UWR steelhead trout (EA Section 3.2.3).* Effects to ESA fish are not significant because thinning is not expected to affect these species both because: 1/ Distance - most of the project units are >1 mile upstream of salmon and steelhead habitat; and 2/ Project design features minimize impacts from tree thinning and road renovation and maintenance on stream channels, water quality, and fish habitat as described in the Hydrology; Fisheries and Aquatic Habitat; and Soils section, above. Additionally, new road construction will be located in stable locations and will not contribute to degradation of aquatic habitat. ESA Consultation is described in EA section 5.1.2 and DR section 6.3.

10. *[40 CFR 1508.27(b) (10)]* - **Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment:** The proposed thinning activities have been designed to follow Federal, State, and local laws (EA sections 1.3, 3.2.10).

7.2 Administrative Review Opportunities

The decision described in this document is a forest management decision and is subject to protest by the public. In accordance with Forest Management Regulations at 43 CFR 5003, protests of this decision may be made within 15 days of the publication of a notice of decision in a newspaper of general circulation. The notice for this decision will appear in the *Stayton Mail* newspaper on May 30, 2012. The planned sale date is June 27, 2012.

To protest this decision a person must submit a written protest to Cindy Enstrom, Cascades Field Manager, 1717 Fabry Rd. SE, Salem, Oregon 97306 by the close of business (4:30 p.m.) on June 14, 2012. The regulations do not authorize the acceptance of protests in any form other than a signed, written and printed original that is delivered to the physical address of the advertising BLM office.

The protest must clearly and concisely state the reasons why the decision is believed to be in error.

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

7.3 Implementation Date

If no protest is received within 15 days after publication of the notice of decision, this decision will become final. For additional information, contact Carolyn Sands (503) 315-5973 or Chris Papen (503) 375-5633, Cascades Resource Area, Salem BLM, 1717 Fabry Road SE, Salem, Oregon 97306.

Approved by: Cindy Enstrom Date: May 23, 2012

Cindy Enstrom, Cascades Resource Area Field Manager

8.0 Selected Action Compared to EA Proposed Action

Table 3: Unit Acres by LUA and by Yarding Method: Selected Action Compared to EA.

Stand Age	EA Proposed Action						Selected Action								Change from EA to Selected Action: Total Acres
	Unit Number	Unit Acres					Unit Number	Unit Acres							
		Total	Matrix	Riparian Reserve	Ground Based	Skyline		Total	Matrix		Riparian Reserve		Ground Based		Skyline	
									Thin	LD patch	Thin	LD patch	Thin	LD patch		
71	***11A***	**15**	6	9	0	15	***1***	**9**	4		5		2	0	7	**-6**
71	***11B***	**156**	82	74	58	98	***2***	**120**	76	2	42		48	2	70	**-36**
71	***11C***	**28**	11	17	9	19	***3***	**20**	11		9		9		11	**-8**
71	***11D***	**10**	4	6	8	2	***4***	**6**	3		3		6		0	**-4**
71	***11E***	**36**	18	18	25	11	***5***	**17**	9		7	1	16	1	0	**-19**
69	***13A***	**28**	21	7	0	28	***6***	**19**	14		5		0		19	**-9**
45	***17A***	**10**	6	4	0	10	***7***	**8**	6		2		0		8	**-2**
45	***17B***	**8**	2	6	5	3	***8***	**7**	2		5		3		4	**-1**
64	***21A***	**77**	41	36	77	0	***9***	**75**	41		31	3	72	3	0	**-2**
68	***19A***	**21**	14	7	21	0	***10***	**21**	15		6		21		0	**0**
68	***19B***	0 **20**	11	9	20	0	***11***	11 **16**	8		3		11		0	**-4**
							12	4	1		3		4		0	
							13	1	0		1		1		0	
64	***19J***	**9**	1	8	9	0	***14***	**9**	3		6		9		0	**0**
78	***25A***	**13**	10	3	13	0	***15***	**12**	10		2		12		0	**-1**
78	***25B***	**10**	1	9	10	0	***16***	**7**	1		6		7		0	**-3**
78	***25C***	**10**	1	9	10	0	***17***	**8**	1		7		8		0	**-2**
Total Acres		**451**	229	222	265	186		**354**	205	2	143	4	229	6	119	**-97**
Matrix Acres		**229**			149	80		**207**					140		67	**-22**
Riparian Acres		**222**			116	106		**147**					95		52	**-75**
Ground Based Yarding Acres		**265**	149	116				**235**	140		95					**-30**
Skyline Yarding Acres		**186**	80	106				**119**	67		52					**-67**

Low Density thinning patches (LD patch): EA p. 19 states that there will be up to 9 acres of thinning patches in sections 11, 19, and 29. Section 29 is not part of the selected action for this timber sale.

Table 4: Road Work Miles: Selected Action Compared to EA.

EA Proposed Action					Selected Action				
Unit No.	Road (Miles)				Unit No.	Road (Miles)			
	Construction	Construction		Renovation		Construction	Construction		Renovation
		Decommissioning	Block and Stabilize				Decommissioning	Block and Stabilize	
11A	0.25	0.2	0.05	0	***1***	0.16	0.13	0.03	0
11B	0.85	0.5	0.35	1.2	***2***	0.69	0.4	0.29	1.15
11C	0	0	0	0.3	***3***	0	0	0	.24
11D	0	0	0	0.2	***4***	0	0	0	0.09
11E	0	0	0	0.9	***5***	0	0	0	0.83
13A	0.3	0.3	0	0	***6***	0.25	0.25	0	0
17A	0	0	0	0	***7***	0	0	0	0
17B	0	0	0	0.1	***8***	0	0	0	0.07
LNS subtotal	1.4	1.0	0.4	2.7		**1.1**	**0.78**	**0.32**	**2.38**
21A	0.85	0	0.85	0	***9***	0.75	0	.75	0
19A	0.1	0	0.1	0.3	***10***	0.09	0	0.09	0.42
19B	0.35	0	0.35	0.3	***11***	0.17	0	0.17	
					12	0.11	0	0.11	
					13	0	0	0	
19J	0.3	0	0.3	0	***14***	0.21	0	0.21	0
25A	0	0	0	0	***15***	0	0	0	0
25B	0	0	0	0	***16***	0	0	0	0
25C	0	0	0	0	***17***	0	0	0	0
MNS subtotal	1.6	0	1.6	0.6		**1.33**	**0**	**1.33**	**0.42**
Total	3.0	1.0	2.0	3.3		**2.43**	**0.78**	**1.65**	**2.8**
Change from EA to Selected Action - Little North Santiam (LNS)						-0.3	-0.22	-0.08	-0.32
Change from EA to Selected Action – Middle North Santiam (MNS)						-0.27	0	-0.27	-0.18
Change from EA to Selected Action – Total						-0.57	-0.22	-0.35	-0.5

Little North Santiam Watershed: In Unit 1, the selected action will block and stabilize 0.03 mile on private land. In Unit 2, the selected action will block and stabilize .29 mile, 0.06 mile on private land and 0.23 mile on BLM land (spurs P11-4, P11-5. 11B). **The selected action will decommission the renovation work in unit 8 (0.07 mile) for a total of 0.85 mile of decommissioning in the Little North Santiam.

Table 5: Roads Decommissioned under Contract 53-04R4-8-2660J in Little North Santiam

Status		Road Number	Miles
Retained (blocked and stabilized) road construction in Little North Santiam – Power Mill Timber Sale			**0.32**
Decommissioned Road Mileage	Mileage applied to Power Mill timber sale (Selected Action)	9-2E-13.3	0.20
		9-3E-15.2	0.14
		subtotal	**0.34**
	Mileage to be applied to Power House timber sale	8-3E-25.6	0.14
		subtotal	0.14
	Net decrease in road mileage	8-4E-30.2	0.07
		9-2E-13.1	0.04
		9-3E-14	0.29
		9-2E-13.4	0.11
		9-3E-19	0.20
		subtotal	0.71
	Total Decommissioning Miles		1.19

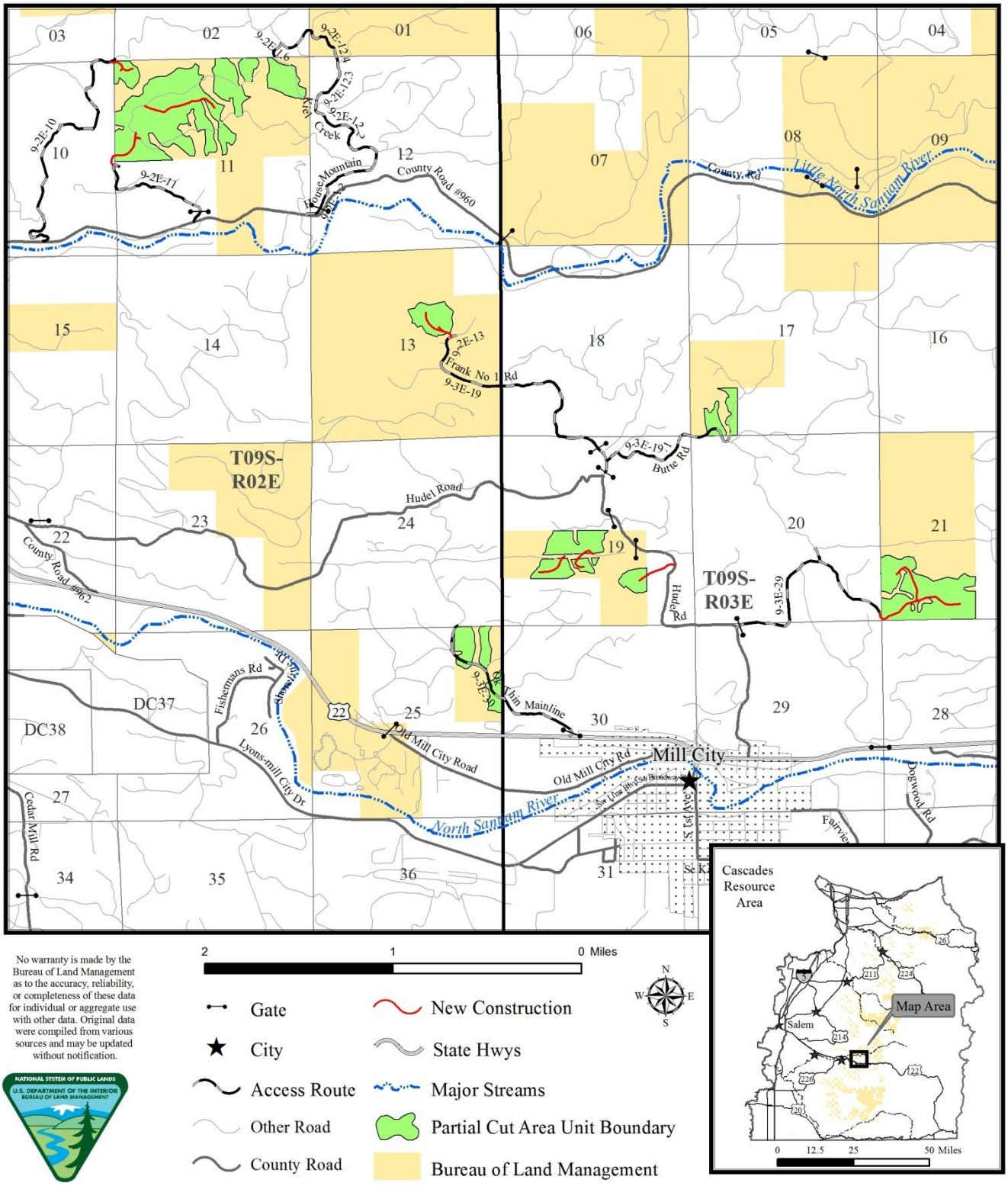
Table 6: Low Density Thinning Patches

Unit	Number of Patches			Acres of Patches		
	Size		Total	Size		Total
	1 acre	½ acre		1 acre	½ acre	
Unit 2 (11B)	2	0	2	2	0	2
Unit 5 (11E)	1	0	1	1	0	1
Unit 9 (21A)	2	2	4	2	1	3
Total	5	2	**7**	5	1	**6**

9.0 Maps

Power Mill Thinning Decision Rationale (EA # S040-2010-0007)
Selected Action Project Location Map

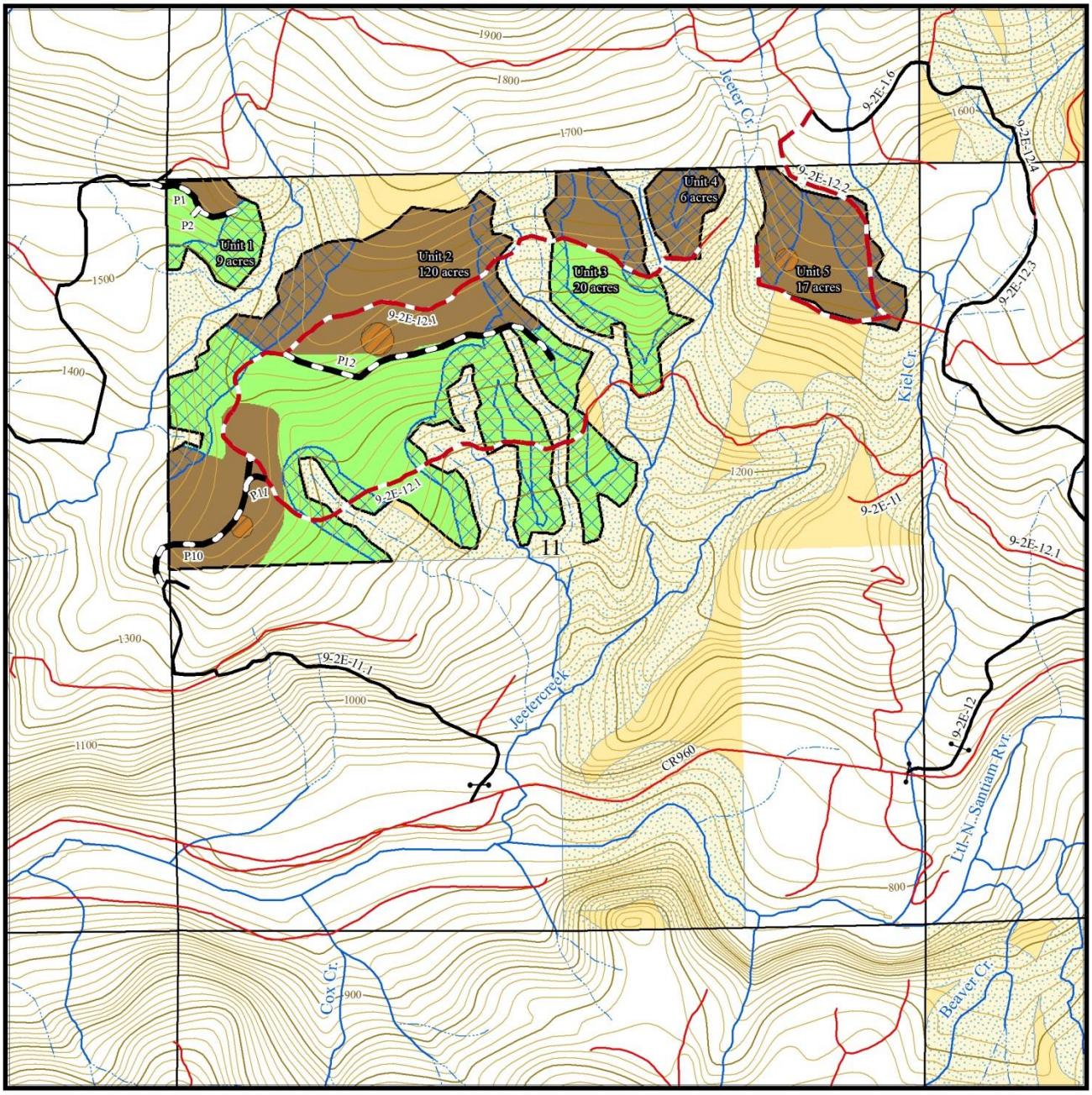
5/23/2012



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

Power Mill Thinning Decision Rationale (EA # S040-2010-0007) Selected Action Map

T09S-R02E Sec 11



1,000 500 0Feet

Contour Interval: 20'

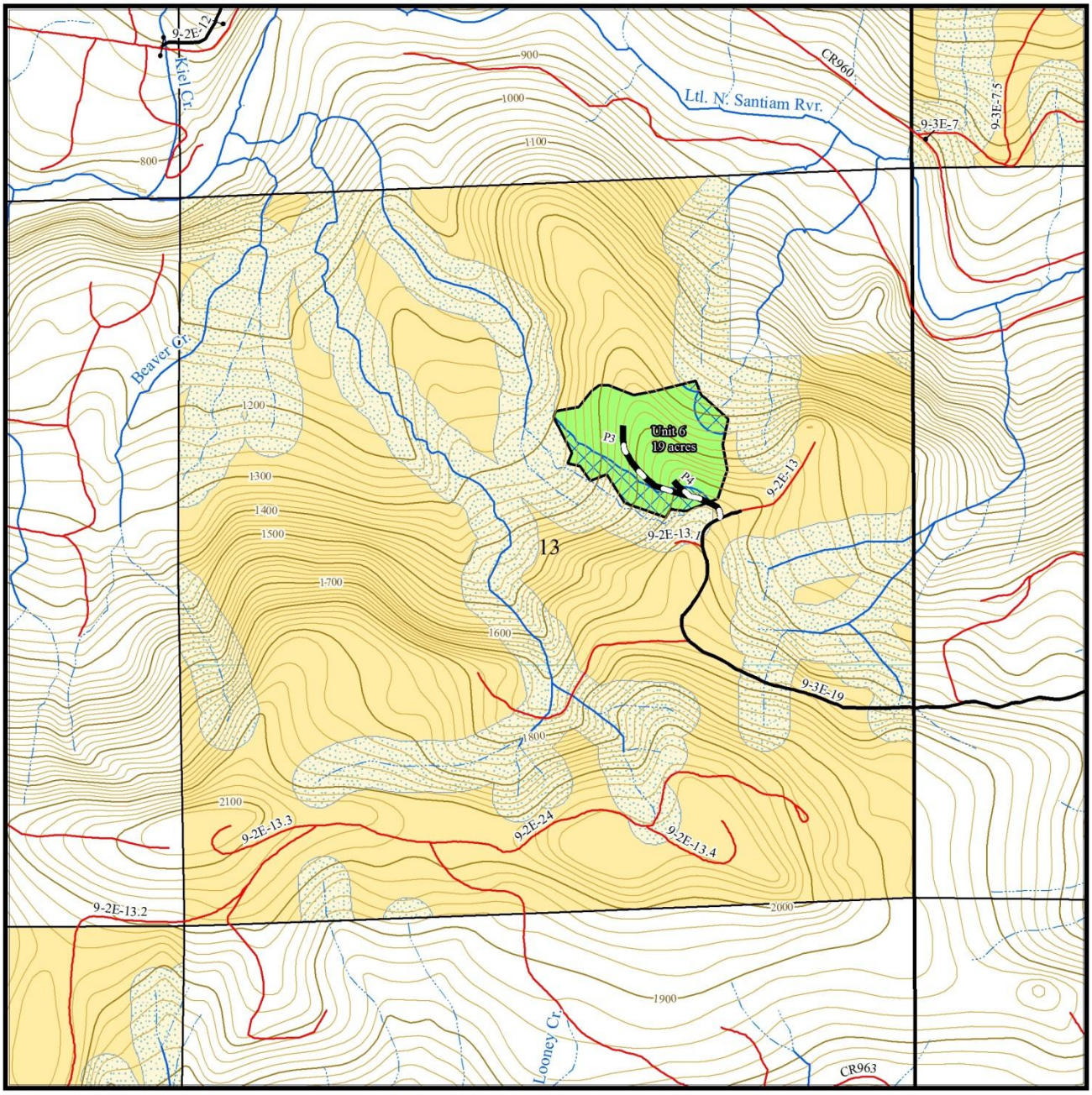
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

- Gate
- Roads
- Perennial Stream
- Intermittent Stream
- Haul Route
- New Road Construction
- Road Renovation
- Low Density Thinning Patch
- Thinning Unit Boundary
- Riparian Reserve (No Treatment)
- Riparian Reserves (Treated)
- Skyline Yarding
- Ground-Based Yarding
- Bureau of Land Management

May 23, 2012
Bureau Of Land Management
Salem District Office
Cascades Resource Area

Power Mill Thinning Decision Rationale (EA # S040-2010-0007) Selected Action Map

T09S-R02E Sec 13



1,000 500 0Feet

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- Gate
- Roads
- Perennial Stream
- Intermittent Stream
- Haul Route
- New Road Construction
- Thinning Unit Boundary
- Riparian Reserve (No Treatment)
- Riparian Reserves (Treated)
- Skyline Yarding
- Bureau of Land Management

May 23, 2012

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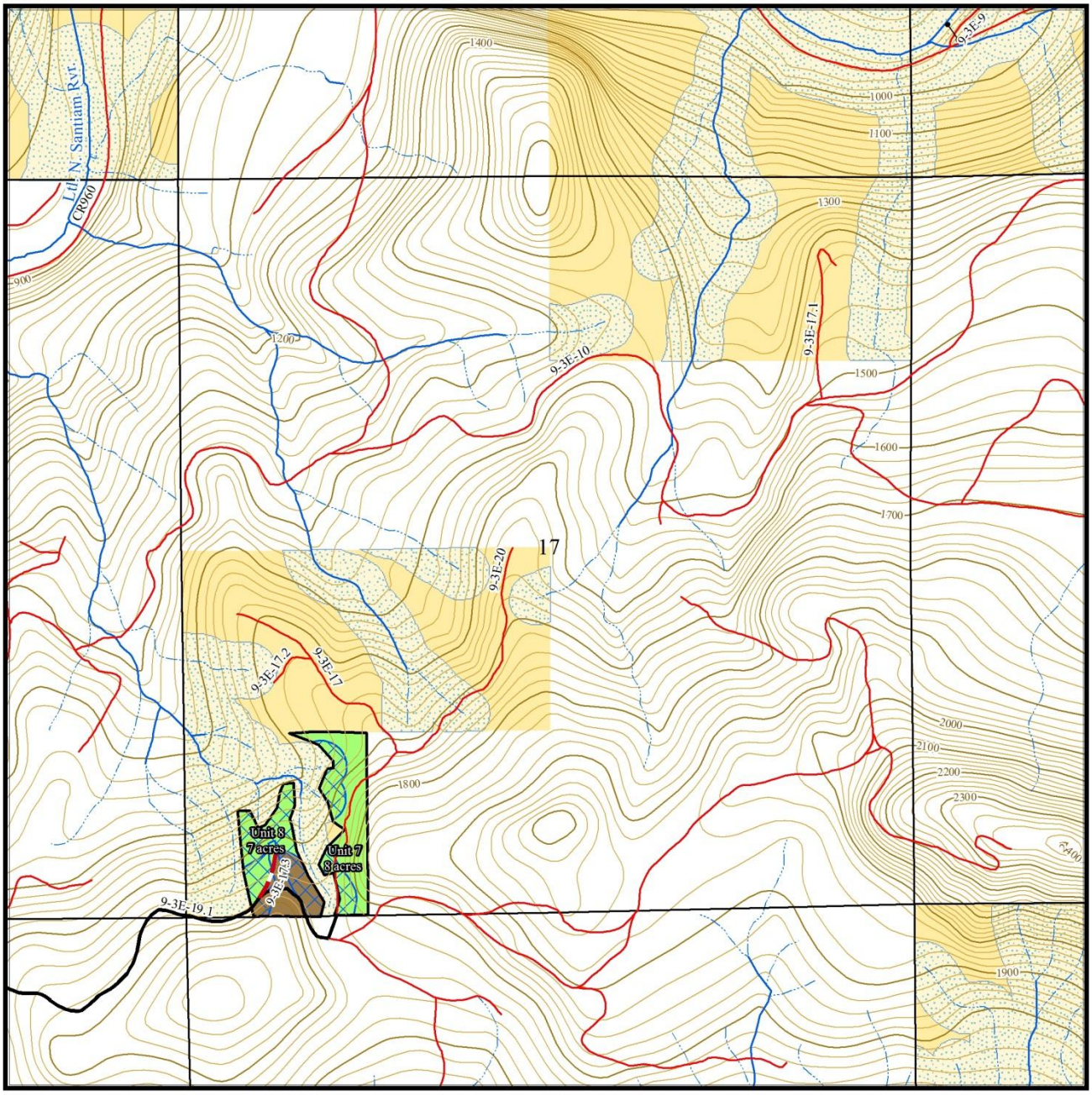
Power Mill Thinning Decision Rationale (EA # S040-2010-0007) Selected Action Map

T09S-R03E Sec 17



1,000 500 0Feet

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- Gate
- Roads
- Perennial Stream
- Intermittent Stream
- Haul Route
- New Road Construction
- Road Renovation
- Thinning Unit Boundary
- Riparian Reserve (No Treatment)
- Riparian Reserves (Treated)
- Skyline Yarding
- Ground-Based Yarding
- Bureau of Land Management

May 23, 2012

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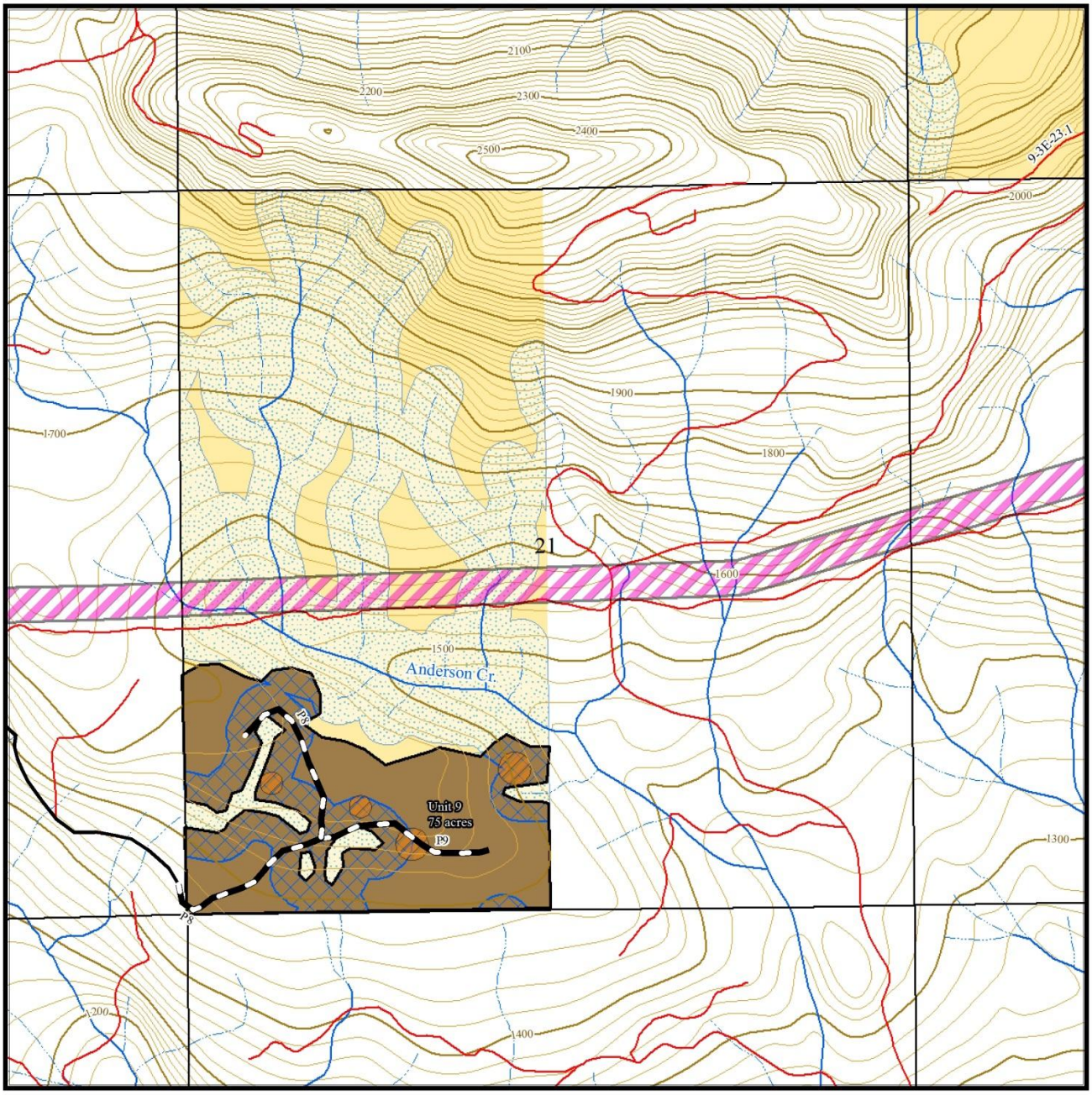
Power Mill Thinning Decision Rationale (EA # S040-2010-0007) Selected Action Map

T09S-R03E Sec 21



1,000 500 0Feet

Contour Interval: 20'

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

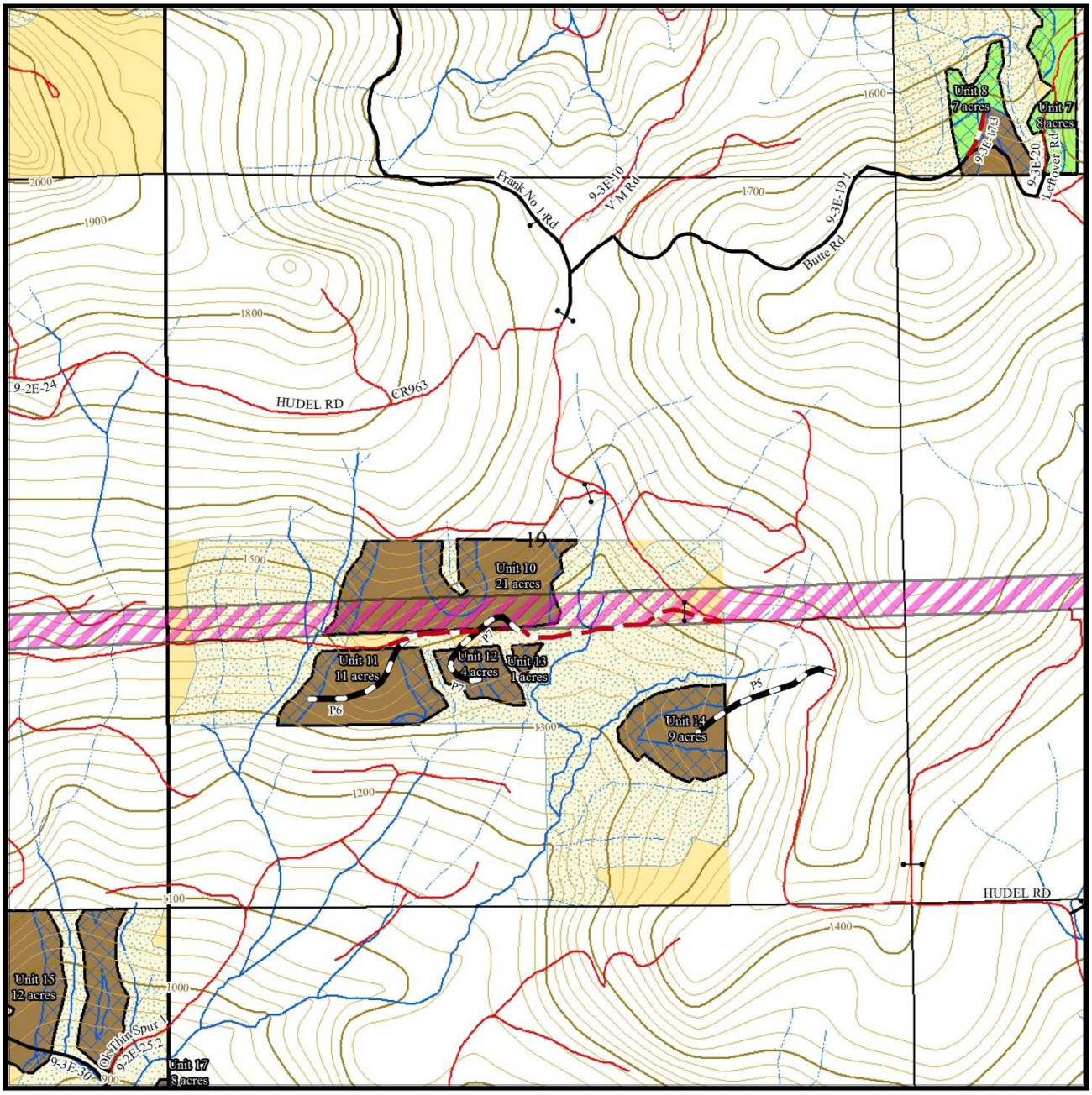
- Roads
- Perennial Stream
- Intermittent Stream
- Haul Route
- New Road Construction
- PGE Cascade Crossing Proposal
- Low Density Thinning Patch
- Thinning Unit Boundary
- Riparian Reserve (No Treatment)
- Riparian Reserves (Treated)
- Ground-Based Yarding
- Bureau of Land Management

May 23, 2012

Bureau Of Land Management
Salem District Office
Cascades Resource Area

Power Mill Thinning Decision Rationale (EA # S040-2010-0007) Selected Action Map

T09S-R03E Sec 19



1,000 500 0 Feet

Contour Interval: 20'

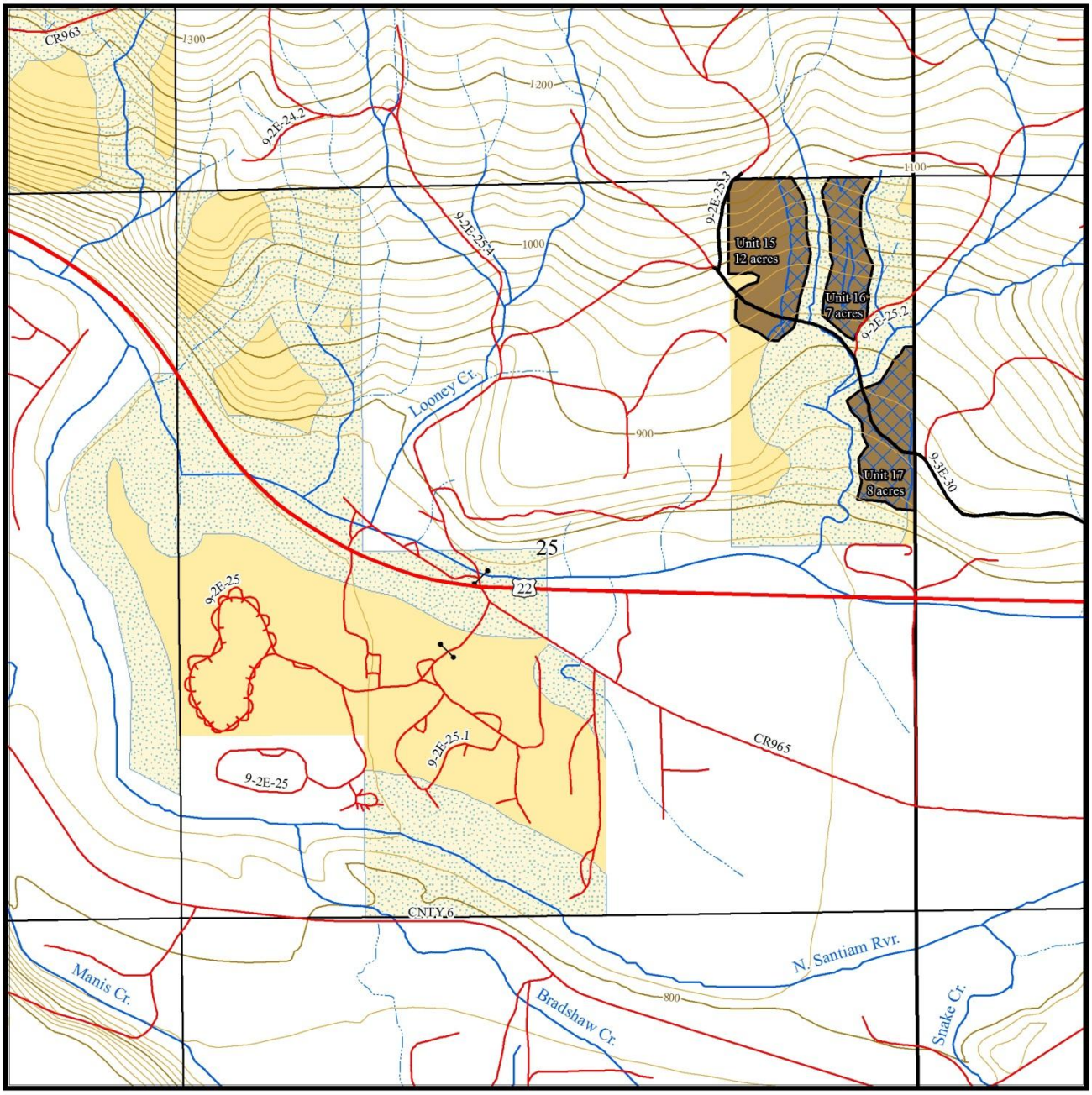
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

- Gate
- Roads
- Perennial Stream
- Intermittent Stream
- Haul Route
- New Road Construction
- Road Renovation
- PGE Cascade Crossing Proposal
- Thinning Unit Boundary
- Riparian Reserve (No Treatment)
- Riparian Reserves (Treated)
- Skyline Yarding
- Ground-Based Yarding
- Bureau of Land Management

May 23, 2012
Bureau Of Land Management
Salem District Office
Cascades Resource Area

Power Mill Thinning Decision Rationale (EA # S040-2010-0007) Selected Action Map

T09S-R02E Sec 25



1,000 500 0Feet

Contour Interval: 20'

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

- Gate
- Roads
- State Highway
- Perennial Stream
- Intermittent Stream
- Haul Route
- Thinning Unit Boundary
- Riparian Reserve (No Treatment)
- Riparian Reserves (Treated)
- Ground-Based Yarding
- Bureau of Land Management

May 23, 2012

Bureau Of Land Management
Salem District Office
Cascades Resource Area

10.0 Response to Comments Received during the EA Comment Period:

I received four comment letters (#1 City of Salem, #2 Oregon Wild, #3 AFRC, #4 from an individual). Having reviewed all of the comments I received following the EA comment period (April 11- May 11, 2012), I have summarized them into the following categories: Water Quality and Municipal Watersheds, Stream Protection Zones, Project Activities within the Riparian Reserve Land Use Allocation, Economics, and Drop Unit 13a (unit 6), Road Construction Retention of Large Trees and Snags, and Other Comments. Comments are in italics.

10.1 Water Quality and Municipal Watersheds

1. *Commenter 1 has concerns about Units within Township 9, Range 2, Sections 11, 13, and 25; and Township 8, Range 3, Section 29: Water quality conditions that contribute to management issues for the City's Geren Island Treatment Facility are largely related to runoff and sedimentation. High and/or persistent turbidity from runoff is a significant concern for the City because it can cause clogging of slow sand filters, which threatens the City's ability to meet the demand of its customers.*

    - *Concerned that activities in Sections 11 and 29 may contribute to cumulative water quality impacts from pre-existing landslides;*
    - *Requests that, in general, U.S. Bureau of Land Management adhere to requirements outlined by Section 1.3 of the Power Mill Environmental Assessment-Conformance with Land Use Policy, Statues, Regulations, and other plans-in order to provide the most preventative measures available for protecting water quality.*

    Response to #1: Unit 25c is within ¼ mile of the Little NF Santiam but is situated on flat surfaces above the adjacent incised channel. The no-treatment buffer at this site will be more than adequate to prevent surface eroded soil from entering the channel. Similarly, portions of unit 13a are within 1/3 mile of the Little NF Santiam: once again, the no-treatment buffer at this site will be more than adequate to prevent surface eroded soil from entering the channel.

    The city does not identify the source for its concern with "pre-existing landslides" so it is assumed this stems from the Hydrology section of the Environmental Assessment (page 47, third paragraph) which cites geologic mapping from Walker, 1991

    "The eastern half of T8S, R3E, section 29, and T9S, R2E, section 11 are composed of recent landslide and debris-flow deposits (Holocene and Pleistocene ages) which are still potentially active."

    Although the area is mapped as landslide terrain, these are relatively ancient features in contemporary terms (over several thousand years) and most often not currently active landslides. These areas were visited during field work by the area Hydrologist and evidence of recent instability such as fresh slump escarpments, "hummocky surfaces", surface erosion and/or pistol butted trees were not observed in the proposed units. Land-sliding and mass wasting potential were discussed in the EA (page 57, paragraphs 3 and 4).

"The project is unlikely to be affected by mass wasting because all proposed treatment units are outside of any areas that are identified as unstable or prone to mass wasting in the TPCC and/or identified in the field. Areas with potential for slope instability and mass wasting were identified and verified by BLM personnel during work for the project proposal.

Tree removal is not proposed on steep, unstable slopes where the potential for mass wasting adjacent to stream reaches is high as defined by the TPCC. Continuous forest cover and its root structure will be maintained. Therefore, increases in sediment delivery to streams due to mass wasting induced by loss of root strength and increases in soil pore pressure are unlikely to result."

BMPs established as part of the Clean Water Act (cited in Sec 1.3.1 of the EA) will be strictly applied to all sale units.

2. *Commenter 4 states the downstream withdrawal of drinking water supplies for several small towns in proximity to the project, as well as Salem, makes it imperative that all aspects of this project's implementation be monitored where water quality may be impacted (p. 52). Protective Stream zones should also be as wide as possible in units draining to the Little North Fork as summer stream temperatures exceed the State of Oregon's threshold of 17.8 C in the main channel. Although it is likely that DO and pH levels are within the range of natural variability, they should be assessed to provide a baseline.*

Response to #2: BLM's water quality monitoring is focused on specific locations where potential for impacts are highest. This is the most cost effective and reliable approach for assessing effects over large treated areas. For this proposal, as indicated in the EA, the most likely location of effects to water quality are at road/stream intersections during wet weather haul and during culvert repair and/or replacement. Visual assessment of turbidity levels (page 58 of the EA) during stream crossing repair will provide adequate monitoring to prevent exceeding the State of Oregon stream turbidity standards.

The selected action will maintain the primary shade along all perennial streams. In addition, secondary shade levels will not be reduced sufficiently to result in a stream temperature increase (see page 56 of the EA).

The US EPA indicates that both Dissolved Oxygen (DO) and pH are "indirectly affected and not very sensitive" to forest harvest and road construction (US EPA, 1991. *Monitoring Guidelines to Evaluate Effects of Forestry Activities on Streams in the Pacific Northwest and Alaska*, p. 41). Particularly when no direct alteration of channel morphology, shading or flow will occur monitoring of these parameters is not a cost effective.

10.2 Stream Protection Zones

3. *Commenter 4 states that the final FONSI should be more specific on what those "stream protection zones" are for all stream segments in project units, rather than just stating the criteria.*

   - *The text states elsewhere (p. 54 and the FONSI) that the minimum no-cut buffer on perennial streams is 85'. Assuming that all fish-bearing streams are perennial, the distance to cutthroat trout habitat should be greater than or equal to 85', not 70', in Table 11. However, it still needs to be stated that within Stream Protection Zones there is absolutely no disturbance allowed, regardless of what the primary shade zone happens to be. Table 2, Table 11, and the last sentence here imply that the area 70-85' from perennial streams can be disturbed.*
   - *With respect to the Riparian Reserves, Table 2 was confusing and contradicted both the FONSI and p. 54 (Hydrology), wherein the minimum SPZ is 85' on perennial streams. Even if the narrower buffers in Table 2 provide adequate shade, they do not adequately protect other aspects of hydrology such as bank stability. The 85' buffer also better protects riparian dependent terrestrial species. Thus, the prescriptions in Table 2 should not be part of the Proposed Action as adopted.*

   Response to #3: With regard to water quality, the specified SPZ was developed to provide adequate shading for maintaining stream temperature on perennial streams. Eighty-five (85) feet was listed as the standard in the hydrologist's report (page 54) when, in fact, the Northwest Forest Plan Temperature TMDL Implementation Strategies (USFS and BLM, 2005) lists the distance as 70-85 feet depending on hillslope, aspect and tree height. During project layout the distance was determined based on these site specific conditions and ranged from 70-85 feet. Other aspects of hydrology and water quality (such as bank stability) are adequately protected by a 70 to 85 foot no entry SPZ.

   With regard to fisheries, perennial streams within 1 mile of listed fish habitat have 100' wide no-entry buffer zones. Perennial streams >1 mile from listed fish habitat have 70 to 85' wide no-entry buffers (dependent on tree height and side slope). These no-entry buffer widths in combination with retaining 50% canopy closure in the secondary shade zone prevent changes to stream temperature, and sediment delivery.

10.3 Road Construction

4. *Commenter 2 states road building has significant and long lasting environmental effects and should be avoided. Areas that are not accessible from existing roads should be retained as unthinned areas and allowed to develop on their own. Such unthinned area provide important ecological services that are not provided in logged areas.*

   Response to #4: This opinion conflicts with RMP management direction for Matrix LUA to "Produce a sustainable supply of timber…" (RMP p. 20) and "Provide a sustainable supply of timber…" (RMP p. 46) as its first objective, and to "Commercially thin managed timber stands to increase timber production…" (RMP p. 48). Unthinned areas are retained in Riparian Reserves and other untreated areas (EA p.30,31, see DR maps – DR section 9.0).

5. *Commenter 3 is happy to see the BLM constructing the necessary roads to access as much of the planning area as possible.*

6. *Commenter 4 is concerned about the new road segments in Section 21 as they are right next to the seasonal wetlands; care must be taken to protect this highly diverse environment which provides habitat for warblers and other bird species.*

   Response to #6: The 0.75 miles of new road construction in Section 21 were located and designed to avoid all high water wet areas in section 21 (RMP, p. 11). Roads will be blocked and stabilized after treatment and allowed to re-vegetate.

10.4 Project Activities within the Riparian Reserve Land Use Allocation (LUA)

7. *Commenter 2 states that the purposes of logging in riparian reserves are not well articulated and are not clearly consistent with the Aquatic Conservation Strategy. EA p 12 fails to reflect the need to meet Aquatic Conservation Strategy objectives as the prime purpose of any action in riparian reserves.*

   - *It [project objectives] also includes "openings" and "young forests" and an "efficient road system" as objectives in riparian reserves. These are not appropriate ACS objectives.*
   - *The objectives are different so the thinning in riparian reserves should be different in character than thinning in the matrix. We do not see enough emphasis on variability and dead wood recruitment in the thinning prescriptions.*

   Response to # 7: With regard to "openings" and "young forests" Objective 6 of the EA is to: "Increase habitat diversity for species associated with openings and younger forest characteristics by creating low density thinning patches (RMP p. 20)" (EA p. 12, objective 6). The low density thinning patches will contribute to diversity. The selected action has variable density thinning by thinning to a 50% canopy closure, with 3 one-acre patches of lower density thinning, leaving unthinned stream protection zones within the unit, and leaving unthinned Riparian Reserves adjacent to the units and within the sections in the project area that contain the units. Increasing diversity addresses ACSO 8. (EA p 105)

   EA p. 79 states: "The one acre low density thinning areas would be implemented according to the variable density management criteria in the Watershed Analyses (LNSWA Chp. 7, pp. 5-6; NSWA Section 3, p. 8). These openings would result in more vertical understory layering and ground cover, adding complexity to the Riparian Reserve."

   With regard to the efficient road system, we assume you are referring to objective 8, which is to : **"**Maintain and develop a safe, efficient and environmentally sound road system (RMP p. 62) and reduce environmental effects associated with identified existing roads within the project area (RMP p. 11) by:

   - Providing appropriate access for timber harvest, silvicultural practices, and fire protection vehicles needed to meet the objectives above;
   - Performing road work to prevent road deterioration or failure and to prevent road generated sedimentation that exceeds ODEQ standards.

The portion of this objective addressing ACS is reducing the environmental effects associated with identified existing roads and performing road work to prevent road deterioration or failure and to prevent road generated sedimentation that exceeds ODEQ standards. This includes the replacement of failing culverts.

EA p. 54 states: "In general, installing larger culverts and more stable fills to replace undersized or failing culverts and fills would allow for improved channel morphology over the long term; increasing the culvert's capacity to provide adequate passage for water and wood debris during peak flows."

Stand characteristics (live trees, snags and down wood) within the Riparian Reserves LUA are similar to the Matrix LUA because the original logging went through the riparian to the stream edge. EA p. 35 states that: "Most of the stands proposed for thinning, including that portion of the stands within what is now the Riparian LUA, were logged between 1929 and 1951." Prescriptions within Riparian Reserves are different from Matrix. Riparian thinning retains 50% canopy cover, compared to retaining 40% canopy cover in Matrix.

8. *Commenter 2 states that EA p 35 admits that there is no need to treat riparian stands that are "naturally developing structural complexity" and*

- *BLM is only proposing to treat stands that lack structure. The EA assertion that stands currently lacking structure will not develop structure is unsupported. There is compelling information indicating that forests are self-organizing systems with built-in feedback mechanisms so forests will structurally diversify on their own without human intervention. If fact, by removing trees, BLM is removing an important process of forest diversification, which occurs when trees grow, die, fall, and kill or injure other trees when they fall, thus creating spatial diversity within the stand.*
- *The EA says that logging will result on old forest conditions sooner, but since snag and dead wood are essential, defining characteristics of old forests, logging is likely to be retard rather than accelerate attainment of some key features of old forests. The EA analysis is unbalanced and incomplete.*

Response to # 8: The EA does not assert that the stands currently lacking structure will not develop structure. Nor does it say it will retard the attainment of key features. EA p. 103 states "The No Action alternative does not retard or prevent the attainment of any of the nine ACS objectives because this alternative would maintain current conditions. The Proposed Action does not retard or prevent the attainment of any of the nine ACS objectives"… and the text continues to provide the reasons.

EA p. 45 states: "The forest stands would continue to grow, but at a reduced rate. In the Matrix/GFMA LUA, at rotation age there would be smaller diameter trees to harvest and total net yield could be reduced below the potential for the site. Especially important to the Riparian Reserves, crowns would continue to close together and there would be more suppression mortality (smaller trees would be shaded and die) resulting in more snags and down wood. Because the smaller trees in the stands are generally the ones that die from suppression mortality, the snags and down wood created would generally be smaller than average stand diameter and would generally not meet desired criteria for large snags (>15 inches diameter and >15 feet tall) or RMP standards for CWD (>20" diameter and >20 feet long).

Within the Riparian Reserve LUA especially, there would be slower development of the 15+ inch DBH trees desirable for future snags and 20+ inch diameter trees desirable for future coarse woody debris recruitment. Fewer of them would reach these sizes within the next 20 years.

Crown closure would further reduce the amount of light reaching the forest floor so understory vegetation would be reduced in quantity, size and diversity compared to current levels. Shading and self-pruning of the lower limbs would result in more clean bole (no live limbs), reduced crown ratios (height of the live crown relative to total tree height) and less potential for large diameter limbs to develop."

EA p. 87 states that: overcrowded stands with low vigor and small crowns would grow more slowly compared to thinned stands. Self-thinning would occur, but diameter growth would not accelerate as fast as in thinned stands. Snags and CWD created by self thinning mortality would not be large enough to meet RMP standards until later in the life of the stand (approximately 20 to 60 years) when suppressed co-dominates achieve these diameters before dying. Understory and ground cover development would take longer than if these stands were thinned. Without management intervention, stands would take longer to develop late successional habitat conditions and remain less diverse for a longer period of time.

Under ACSO 8, EA p. 105 states: The current species composition and structural diversity of plant communities would continue along the current trajectory. Diversification would occur over a longer period of time.

9. *Commenter 2 states that The EA says that the RMP (p. D-6) states that merchantable logs may be removed "where such action would not be detrimental to the purposes for which the Riparian Reserves were established." Commercial logging will remove functional wood from riparian reserves where functional wood is in short supply and will therefore be detrimental to the purposes for which the riparian reserves were established.*

   - *EA page 45 admits that unthinned riparian reserves will have more snags and down wood. The EA says that unthinned stands would produce mostly small wood, smaller than "desired criteria" (>15-20" diameter for snags and CWD). However, the EA analysis is flawed in several ways.*
   - *First, the EA does not provide any analysis to show that thinning will produce more wood larger than 15" diameter. It is quite likely that by removing large number of trees that are still growing and likely to reach >15-20" dbh before they die, the proposed action will reduce recruitment of "desired criteria" wood.*
   - *Second, the EA fails to disclose opposing viewpoints which point out that small wood can serve ecological functions in riparian reserves.*
   - *The NEPA analysis should therefore disclose the effects of logging not only on absolute size of wood but on the size of wood relative to stream size and gradient. Dead wood of all sizes is important to streams and riparian function. In small streams, small wood can even perform the ecological and hydrological functions normally thought to require large wood.*

- *If the goal of logging is to create large trees faster, the NEPA analysis should document the size, gradient, and other characteristics of streams adjacent to each logging area and determine the size of wood that can serve key ecological and hydrological functions, then disclose the effects of logging relative to those relevant wood sizes.*

Response to #9: The EA does not say that thinning will produce more wood larger than 15" in diameter. The EA describes that after treatment:

> In the short term: "The stands should appear healthy with uniform spacing and tree size. Tree crowns would be more widely spaced than prior to treatment, allowing more light to reach the forest floor. The average diameter of the forest stand would be larger than prior to thinning because "thinning from below" primarily removes the smaller and less healthy trees from the stand." EA p. 38
>
> In the long term: "Tree crowns would continue to grow as limbs grow longer and lower limbs continue to grow instead of dying and self-pruning. As crown closure increases (limbs grow and fill in the open space in the tree canopy) the amount of light reaching the forest floor would slowly diminish. Understory brush and conifer seedlings, and ground cover species would grow rapidly in response to increased light reaching the forest floor then begin to decline in vigor in the second decade as crown closure increases." EA p. 39.

EA Table 9 compares the diameter of the no action and the proposed action at 20 years. For example the average diameter in unit 11a would be 19" without thinning and 21 inches with thinning. EA p. 37.

The EA does not dispute that small wood can serve ecological functions in Riparian Reserves. EA p. 103 states: "The project would comply with Component 4 by the combination of thinning and unthinned areas in Riparian Reserves, which would further enhance terrestrial habitat complexity in the long and short term." See response to # 9 for a description of the ecological functions of the no action alternative. These paragraphs show that the no action alternative will continue to develop structure and provide ecological function.

Treated areas are too far away to affect stream wood recruitment. Wood recruitment will come from the stream protection zones that will remain unthinned.

The benefits of thinning are described in the EA 3.2.1 (Vegetation), 3.2.5 (Wildlife), 3.2.10 (ACS), 3.2.11 (Decision Factors). Your comments have incorrectly quoted the EA or have taken text out of context as shown above and response to comment # 9. The EA has not ignored that unthinned areas contribute to the overall diversity of the stand. As shown in section 3.2.11, the EA shows that no action alternative partially meets project decision factors 4, 5, and 6. However, I have made the decision to proceed with the project because the analysis shows that the selected action meets all of the stated decision factors and project objectives.

10. *Commenter 4 states that the criteria for determining which Riparian Reserves to leave untreated are excellent and should be used in future timber sales as well.*

    - *The proposed action thins 23 percent of the Riparian Reserve acreage, which is about the maximum that would be acceptable to me. I like very much the two criteria that were used to determine which riparian acreage to thin; these should be used in future thinning projects as well.*
    - *I liked especially the paragraph on the importance of CWD (as opposed to smaller diameter downed wood). I am pleased that artificial snag creation will be delayed until the next entry (in 20-30 years). Hopefully, it will not be necessary then. The desired spatial and horizontal complexity achieved by the project is also a good selling point.*
    - *Unlike private timber lands, 75% of the project area will be left untreated; this results in habitat diversity as a cumulative effect, noted at the bottom of page 44. In the interim before the next entry, it will be important to monitor for both invasive species and the appearance of SSS botanical species.*
    - *The effects of the "No Action" alternative also are well described, and make the Proposed Action the preferred alternative in terms of forest health.*

11. *Commenter 3 states the overstocked stands in the riparian reserves have potential for improvement, and AFRC is glad to see the BLM is being proactive in treating them. It has been well documented that thinning in riparian areas accelerates the stands trajectory to a mature successional condition and has no affect on stream temperature with adequate buffers. Removal of small diameter suppressed trees has an insignificant short-term affect on down wood, and ultimately a positive effect on long-term creation of large down woody debris, which is what provides the real benefit to wildlife and stream health.*

12. *Commenter 4 states that landings should be kept out of the entire width of Riparian Reserves, not just the SPZ's. Otherwise, 50% canopy cover cannot be achieved, as the text says it will on p. 20. A landing is a small clearcut, not acceptable within the Riparian Reserves.*

    Response to #12: Canopy cover calculations are always an average, including openings such as natural openings and landings. RMP Management Actions/Directions for roads in Riparian Reserves includes the statement "minimizing road and landing locations in Riparian Reserves". The RMP does not prohibit road construction and landings within Riparian Reserves. The project design minimizes roads and landings in Riparian Reserves to those the BLM has determined are necessary to meet project objectives.

10.5 Economics

10.5.1 Economics - Economic Viability

13. *Commenter 3 would like to see all timber sales be economically viable. Appropriate harvesting systems should be used to achieve an economically viable sale and increase the revenues to the government. Consistent and steady operation time throughout the year is important for our members not only to supply a steady source of timber for their mills, but also to keep their employees working.*

    Response to #13: Decision Factors 1-3 of EA section 1.2.4 are as follows: " 1/ Provide timber resources to the market and revenue to the government from the sale of those resources (objectives 1 and 2); 2/ Provide for economically efficient short-term and long-term management of public lands in the project area (objectives 2 and 8); and 3/ Provide for safe, economically efficient and environmentally sound access for logging operations, fire suppression and administration on public lands (objectives 2, 4 and 8)."

    The Power Mill Thinning timber sale achieves this objective as shown by the appraised price for stumpage of $1,485,000.

    Each project has its unique combination of environmental and operational concerns and the BLM constantly evaluates project proposals to ensure that the environmental needs are met as economically as possible. The BLM timber sale contract delegates an "Authorized Officer" specific authority to approve proposals for alternate logging methods and schedules that meet resource objectives and stay within the effects documented in the EA more efficiently than those proposed by the government.

14. *Commenter 3 states the ability to operate during all months of the year is crucial to our members, and a road infrastructure that can support wet weather haul is vital to achieving this goal.*

    - *Encourages the BLM to identify those units that will require future entries as candidates for permanent road construction in order to ensure economic feasibility of future sales, as well as to allow wet weather operations on current sales. Did the BLM consider rocked road construction on any roads in addition to 11-4 & 5? Spurs such as 13-1 and 19-1, 2 & 3 are also on ridgetops and stable side slopes and could be good candidates for system roads.*
    - *Quantifying a residual stand damage threshold rather than restricting activity during months in the spring when bark slippage is high will allow an operator the flexibility to alter their yarding techniques to meet the threshold throughout the seasons instead of having to completely shut down during certain months.*
    - *Would like to see flexibility in the EA and contract to allow a variety of equipment access to the sale areas during all seasons. We feel that there are several ways to properly harvest any piece of ground, and certain restrictive language can limit some potential bidders, thus driving the bid value down. Including language in the EA and contract that specifies damage tolerance levels rather than firm restrictions gives the operator flexibility to utilize their equipment to its maximum efficiencies.*

Response to #14: The BLM evaluates haul routes from each unit for suitability for wet weather haul. In the Power Mill Thinning sale area, there are specific resource issues with most of the haul routes that preclude wet season hauling. The BLM recognizes the impacts of this seasonal restriction and appraised the sale value accordingly. Resource issues affecting haul season include Listed Fish and Habitat (Fisheries, EA section 3.2.3), and municipal drinking water/ water quality (Hydrology, EA section 3.2.2).

Each sale, and often each harvest unit, has its own set of environmental and operational concerns and the BLM operates under various laws, policies and plans that direct us. We seek to allow the greatest possible flexibility in logging systems and seasons within those constraints. The EA incorporates language to allow as much flexibility as possible within the constraints mentioned above. The contract is usually more restrictive than the EA, but also includes provisions to allow flexibility. Notice that seasonal restrictions include a phrase such as "unless waived in writing by the Authorized Officer". This clause allows for the operator to submit a proposal for operations that can be evaluated by the BLM. If it meets BLM resource management objectives and results in effects to resources that are less or equal to those effects described in the EA, it can be allowed.

15. *Commenter 3 states that though much of the proposal area is planned for cable harvest, there are opportunities to use certain ground equipment such as feller-bunchers and processors in the units to make cable yarding more efficient. Allowing the use of processors and feller-bunchers throughout these units can greatly increase its economic viability, and in some cases decrease disturbance by decreasing the amount of cable corridors, reduce damage to the residual stand and provide a more even distribution of woody debris following harvest.*

Response to # 15: With regard to alternate logging equipment, we include only standard skyline and ground-based stipulations in the contract and the EA sets resource protection objectives and operational side-boards. The operator submits a proposal to the Authorized Officer for review. Once an agreement is reached, the operator is held to the agreed-to standards and allowed to log. In our experience based on post-harvest monitoring, feller-bunchers have not met our resource protection standards because they cannot effectively create a slash mat and they disturb/compact a high percentage of the ground surface (our standard is <10% of the area). Processors have often been used very effectively on our timber sales where they have done an excellent job in preventing soil damage and minimizing damage to standing trees. They can often work an extended operating season, as long as effects stay within those effects described in the EA.

16. *Commenter 3 states that they had the chance to view many of the proposed units and has some concerns with the volume marked for retention. Some of the units, such as 17A & B, appear to only be harvesting about 5-8MBF/acre. AFRC would like to encourage the BLM to pursue treatments that are suitable from both a silvicultural and economical perspective.*

Response to #16: All units in Power Mill were marked to a target Curtis Relative Density (RD) of 35. Our Organon runs for units 17A and 17B list volumes between 10 and 11 MBF/acre. The Salem District RMP recommends thinning our Matrix lands to a Curtis RD of 40.

Based on our current management direction, it is hard to justify thinning Matrix lands to a Curtis RD lower than 35.

17. *Commenter 4's principal concern with the project, after reviewing the EA, is the construction of 3.9 miles of new road for a relatively small project in an already heavily roaded area. The EA addresses some of my reservations about new roads, but does not address their cost vis-a-vis the economic benefits (i.e., timber revenue) of the sale. Given the extensive road building (as well as reconstruction and culvert replacement) in the project, the Decision Notice should contain information which assures the public that this timber sale is economically viable, such that the sale buyer will not have to sacrifice environmental considerations in order to make a profit. Without some economic data, it is not possible to determine whether or not these factors have been adequately considered in designing the timber sale.*

Response to #17: Road costs (including new construction, renovation, surfacing, brushing, drainage, etc.) are well within the range that is generally considered to be normal, acceptable and reasonable for an economically viable timber sale. Here is a summary of the economics for Power Mill.

Sale volume: 6,750 MBF (thousand board feet)

Road Cost: $93,000 = $14/MBF

Total Logging Cost: $200/MBF (Road costs are approximately 7 percent of the total logging costs.)

Appraised stumpage value of the timber: $1,485,000 (Appraised stumpage value is the minimum acceptable price that purchasers will offer for the sale).

Appraised Value of the Douglas-fir: $225/MBF

The numbers show there is a good value for the timber offered for sale. For comparison, a minimal appraised value for a viable sale will be in the $45/MBF range with a total logging cost of over $400/MBF.

10.5.2 Economics - Owl Objectives

18. *Commenter 3 states the objectives outlined in the EA are in line with the Matrix LUA, however it seems that the range of treatments are often restricted by the spotted owl requirements. AFRC would like the BLM to clarify the current status of spotted owl habitat on these lands in relation to the required habitat needed, in order to illustrate opportunities for heavier treatments such as regeneration. It is stated in the EA that the proposed units provide 615 acres of dispersal habitat, and that the treatments will maintain this habitat type. But it does not clarify how many acres in these watersheds need to be maintained as dispersal habitat. AFRC would like the BLM to provide this type of information in the future so that all silvicultural treatments can be analyzed in the context of their affects to endangered species such as the spotted owl.*

Response to #18: The Power Mill timber sale is located in the Matrix and Riparian Reserve Land Use Allocations (LUAs). Objectives of the Riparian Reserve LUA are non-timber management oriented.

They include providing habitat for special status, special attention and other terrestrial species (RMP, p. 9), and maintaining and restoring spatial and temporal connectivity within and between watersheds. These objectives include maintaining and restoring dispersal habitat for the spotted owl as well as other wildlife species. In the Matrix LUA, timber management objectives are considered, and regeneration harvest is allowed (RMP p. 48). From a spotted owl standpoint, there are no formal requirements for the amount of dispersal habitat in the Power Mill area. None of the BLM lands in the vicinity of the proposed timber sale are in Proposed Critical Habitat or Late successional Reserve. Stands can be proposed for regeneration harvest as long as BLM meets its consultation requirements and they are in compliance with other requirements of the RMP. However, regeneration harvests would generally occur in stands at or above the age of culmination of mean annual increment (RMP p. 48, Appendix D, p. D-1). None of the units proposed for thinning have reached culmination of mean annual increment, thus none of the stands were proposed for regeneration harvest.

10.6 Drop Unit 13a (unit 6) (Commenter 4)

19. *I have suggested eliminating Unit 13A from the sale, in part because it requires the building and decommissioning of 0.3 mile of new road to thin a small acreage of forest.*

Response to #19: Constructing approximately 1500 feet of minimum standard, temporary natural surface (dirt) road to access 19 acres (14 acres of Matrix, 5 acres of Riparian Reserve) is well within usual practice for environmentally sound and economically efficient access for managing forest stands. The road is near the ridge-top on stable ground and any runoff will flow directly to stable, vegetated slopes so that it will not introduce sediment to any stream. Economically, the road will cost less than $6,000 to construct and decommission and access approximately $78,000 (appraised value, stumpage) of timber.

20. *The unit also already has more CWD than most units and it appears to me that some self-thinning is occurring naturally.*
21. *One of the reasons I think that Section 13 should be eliminated from the sale is that both red tree voles and megomphix mollusks were found in the mature/old growth portion of this section over a decade ago. It is not stated how close these stands are to 13A, and 13A itself was not surveyed, but omitting this unit leaves the entire 1-mile square undisturbed and is a good idea.*
22. *An additional reason for excluding Unit 13A is that it is within a 1.2 mile radius of the Budlong spotted owl site (p. 81).*

Response to #20-22: Stand exams show that unit 13A has about 100 lineal feet of large (>20 inches diameter on the large end), hard (early decay) material, and 50 feet of large soft (advanced decay) material per acre. Existing CWD will be retained after treatment (EA pp. 29, 80, 85). Currently, there are 135 trees per acre in unit 13A, and the Curtis Relative Density is 49 (EA p. 37), which indicates that stocking is high and the stand could benefit from a thinning.

Since the adoption of the Survey and Manage Settlement Agreement in July 2011, pre-disturbance surveys and protection of known Oregon Megomphix sites is no longer required. The red tree voles and Oregon megomphix were located during surveys of the 180 year old stand about 1/3 of a mile to the south. Unit 13A is 69 years of age, and was not surveyed as it meets the Pechman exemptions which were incorporated into the settlement agreement. The three known locations of red tree vole in the 180 year old stand to the south are protected with reserves.

Unit 13A is within the provincial home range radius (1.2 miles) of the Budlong known spotted owl site. The Budlong owl site was surveyed six times during 2010 and 2011 with no responses. The last time a spotted owl was observed there was a single male, once in 2008 and once in 2009. There has never been a nesting pair at this site in its long survey history dating back to 1991. The presence of a pair has never been confirmed. Nevertheless, a seasonal restriction has been placed from March 1 to July 15 in the unlikely event that nesting spotted owls are found in the future.

10.7 Retention of Large Trees and Snags

23. *Commenter 4 states that the Matrix prescriptions are fine with the exception of "Remove some dominant and co-dominant trees to achieve desired stocking levels", which seems to contradict "Retain trees that are generally larger." I understand the need to remove hazard trees for safety reasons, even if they are dominant/co-dominant, but not to achieve desired stocking levels. At any rate, BLM should mark all the trees to be cut so that the contractor cannot cut down larger trees to more easily pay for the road building.*

Response to 23: The prescription for any stand considers both diameter and number of trees in calculating how many trees to retain and the appropriate range of spacing between trees. In general, the prescription retains the larger trees, but there are exceptions based on spacing to provide a favorable environment for future tree growth, the species mix desired in the stand, and retaining trees with special habitat characteristics. For this project, the BLM did not consider a specific diameter limit to be the preferred prescription. For this timber sale the BLM marked trees to be retained. By marking the trees to be retained, it is immediately obvious to the BLM contract administrator if any of those trees have been cut because there is orange paint on both the stump and on the first (largest, most valuable log). There are severe financial penalties for cutting those trees without specific approval from the BLM. With regard to hazard trees, the contractor can not cut any trees without BLM examination of the trees and approval.

10.8 Other Comments (Commenter 4)

10.8.1 Wildlife

24. *What is recovery action 32?*

Response to 24: Recovery Action 32 is defined in the revised Spotted Owl Recovery Plan on page III-67.

"Because spotted owl recovery requires well distributed, older and more structurally complex multi-layered conifer forests on Federal and non-federal lands across its range, land managers should work with the Service as described below to maintain and restore such habitat while allowing for other threats, such as fire and insects, to be addressed by restoration management actions. These high-quality spotted owl habitat stands are characterized as having large diameter trees, high amounts of canopy cover, and decadence components such as broken-topped live trees, mistletoe, cavities, large snags, and fallen trees." A more detailed description of Recovery Action 32 follows on pages III-67-68 of the Revised Recovery Plan.

25. *What distinguishes a mid-seral from a late mid-seral stand.*

Response to 25: Stand age and tree size distinguishes a mid seral from a mid-late seral stand. Together, early mid, mid and late mid seral stands consist of trees in the stem exclusion stage, about 30 to 80 years of age. These stands are typically the types of stands which are suitable for thinning to reduce tree densities, and provide more growing space for the residual trees. Late mid seral comprise the 60 to 80 year age classes, which are typically larger in diameter.

26. *The suitability of the large trees in Unit 25 for perching by bald eagles is another reason to give them added protection by marking them and requiring their protection in the timber con tract (p. 83).*

Response to 26: Old-growth remnants have been located and evaluated and it has been determined that they will be posted outside of the unit boundaries, with the exception of one tree. This old-growth remnant will be reserved and is located on the edge of unit 25C in a location which is safe from logging damage.

10.8.2 Botany/Invasive Species

27. *When were the special status botanical surveys done?*

Response to 27: Comprehensive botanical inventories of the proposed harvest areas were conducted in May, June and July 2009 and 2010, to look for any species that require protection or special management under the following guidance: The *Endangered Species Act of 1973, BLM Manual 6840 – Special Status Species Management, Oregon-Washington Special Status Species policy – Instruction Memorandum,* 1995 *Salem District Resource Management Plan and Record of Decision*, *BLM Manual 9015 – 2001 Record of Decision and Standards & Guidelines – Integrated Weed Management, 1995 DOI Department Manual – Part 609 - Weed Control Program,* and *1999 Executive Order13112- Invasive Species.*

10.8.3 Fisheries

28. *Although I don't doubt the veracity of the results, I had difficulty with the cumulative effects analysis for sediment yield. I under stood the first paragraph ("Assuming...") of the analysis but not the second.*

The author needed to include more mathematical steps as well as the acreages used to arrive at his conclusion. A map showing just the waterways, watersheds, and fish species distribution (along with the topography) would have been helpful. Perhaps because there is no map, I did not understand where the two threatened species (spring chinook and winter steelhead) are found. The Little North Fork is two or more miles south of Unit 29; it does pass through the eastern corner of Unit 11. Please clarify this paragraph (p. 62, third paragraph from the bottom).

Response to 28: Winter steelhead inhabit the Little North Santiam River from its confluence with the North Santiam River upstream 21 miles to the Cedar Creek confluence, well upstream of (10.5 miles to the East) of where streams draining from the Power Mill Sale Unit in Section 29 (T. T.8S, R.3E) join the Little North Santiam River. Spring Chinook inhabit about 18 miles of the Little North Santiam River, from its confluence with the Santiam River upstream to the Henline Creek confluence.

29. *With respect to effects, the first paragraph under 3.2.3.1 is inaccurate unless all the buffer distances in Table 11 are 100'. As I understand it;-the wider buffers only apply to within one mile of listed ESA habitat. The second paragraph here gives the narrower buffers for some perennial streams. I think the problem lies in the description of listed ESA habitat, as well as needed editing.*

Response to 29: All perennial streams within 1 mile of listed fish habitat have 100 ft wide no-entry buffers. Perennial streams >1 mile from listed fish habitat have no-entry buffers of 70 to 85 feet wide, which combined with retaining at least 50% canopy closure in the secondary shade zone (>70-85 feet from the channel, dependent on tree height and side slope) result in no change to stream temperature, and no sediment delivery to tributary streams to the Little North Santiam and Santiam Rivers.