

# Missouri Ridge Thinning Timber Sale

## Final Decision and Decision Rationale

Environmental Assessment Number # OR080-04-20

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

T. 6 S., R. 2 E. Sections 7, 9; WM.  
Rock Creek/ Pudding River Watershed  
Clackamas County, Oregon

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**BLM/OR/WA/AE-11/009+1792**

## 1.0 Introduction

The Bureau of Land Management (BLM) has conducted an environmental analysis for the Missouri Ridge Thinning project, which is documented in the *FY 2006 Timber Sale Thinning Environmental Assessment and Finding of No Significant Impact* approved on July 19, 2005. This EA is incorporated here by reference in this Final Decision and Decision Rationale (DR). I made the EA available for public review from July 20, 2005 to August 19, 2005. Substantive comments received during the public review period are addressed in DR section 11.0.

## 2.0 Decision

I have decided to implement the Missouri Ridge Thinning as a timber sale consisting of 9 of the 17 units of the Missouri Ridge proposed action (EA pp. 70-71, Missouri Ridge EA Maps 1 and 2 (after EA p. 80); p. 105). I will implement EA units MR 7B, 7C, 7D, 7I, 7L, 7M, 7O, 7P, and 9A with adjustments to unit acres and unit boundaries based on field verification of the original unit mapping (DR sections 8.0 and 9.0). The following is a summary of the decision, hereafter referred to as the “selected action” in this Decision Rationale (DR). The selected action will:

### Thinning

Thin approximately 139 acres of 30-70 year old forest stands within T. 6 S., R. 2 E. Sections 7, 9 within the following Land Use Allocations:

- 125 acres within the General Forest Management Area (GFMA) portion of the Matrix LUA
- 14 acres within the Riparian Reserve LUA

Units will be thinned by removing suppressed, co-dominant, and occasional dominant trees (thinning from below). In all prescriptions, generally the largest trees will be left. An average minimum canopy closure of 40% will be maintained within the Matrix LUA, and an average minimum canopy closure of 50% will be maintained in the Riparian Reserve LUA.

Stream Protection Zones: The width of the stream protection zones have been expanded to 60-100 feet each side of perennial streams and 35-60 feet each side of intermittent streams, compared to the 60 feet on perennial streams and 25 feet on intermittent streams described in the EA.

### Logging Systems

- Harvest approximately 127 acres plus 4 acres in the road right-of-way using ground-based yarding for a total of approximately 131 acres of ground based yarding.
- Harvest approximately 12 acres using skyline yarding.

### Road Work and Haul

- *New Road Construction and Right-of-way:* Construct approximately 1.2 miles of new road to accommodate logging equipment and log transport within the GFMA LUA. The selected action will modify the location of the new construction in Units 2 and 3 from the location planned in the proposed action. The changed location was necessary because BLM was unable to secure the necessary rights-of-way to implement the proposed action.

The proposed new road construction accessing units 2 and 3 will cross an intermittent stream channel that is dry during the summer, the terrain is flat and it is adjacent to private pasture land.

- Clear approximately 4 acres of vegetation for the road right-of-way accessing units 1, 2 and 3. This action will take place within the Matrix LUA.
- Block the new construction (1.2 miles) with two debris barricades and stabilize the new construction after logging operations. Stabilizing entails installing water-bars or other shaping of roads for drainage and/or placing woody debris, and seeding with native species seed and sterile mulch, along with fertilization to re-establish vegetation (EA p. 19).
- Replace/upgrade the gates on Road 6-1E-12 and Road 6-2E-5 at the entrance of these roads.
- Install a new gate on Road 6-2E-5 where the road enters BLM land in section 5.
- **Road Renovation/Maintenance:** Renovate and maintain approximately 2.8 miles of existing road. Renovation may include blading and shaping of roadway and ditches, removing rocks/boulders, clearing brush from cut and fill slopes, applying rock surfacing material to depleted surfaces and cleaning or replacing culverts (EA p.16). For this sale, the culvert work consists of replacing seven (7) failing culverts at intermittent stream crossings and installing three (3) new culverts to facilitate better drainage. Excavation needed for the replacement of culverts will take place within the current road prism. The Cotton Creek road repair documented in the EA (p. 70) has been dropped from the selected action (See DR section 3.0 – selected action).

### **Fuel Treatments**

Up to 10 acres will have fuel treatments. The areas to be treated are located within units 1, 2, and 3 generally along property lines (DR section 9.0, Figure 1). Fuel treatments will be piling and burning and scattering. Within 30 feet of the edge of each landing all tops, broken pieces, limbs and debris over 1 inch and longer than 3 feet will be piled and covered. Piles will be burned after thinning has occurred and fall rains have begun.

### **Other**

After logging operations have been completed, block access to skid trails by leaving logging debris to prevent Off Highway Vehicles (OHVs) from driving on skid trails.

### **Design Features**

Project Design Features for this project are described in the EA, pp. 18-21. These design features apply to the selected action, are summarized in DR section 10.0, and have been included in the timber sale contract.

## **3.0 Alternatives Considered**

- a. No Action - No timber harvest or connected actions will take place.

- b. Missouri Ridge EA Proposed Action is a proposal to thin approximately 287 acres of mixed-conifer stands with an average age ranging from 30-70 years old (at the time of the EA).
- c. Missouri Ridge EA Alternative 2 is a proposal to thin the same areas utilizing the same methods as the proposed action. The only difference would be that approximately 0.9 miles of the Cotton Creek Road (BLM Road # 6-2E-05) in Sections 4 and 9 would be repaired to the minimum standard necessary for hauling, and then decommissioned after use. Under the proposed action, this segment of the road would be improved to current standards and then would remain in the regular maintenance schedule.
- d. Selected Action: The selected action, a modification of the EA proposed action, is described in *DR sections 2.0, 8.0 -10.0*). The renovation of the 0.9 mile of Cotton Creek road described in the EA (p. 70) has been dropped from the selected action. The Missouri Ridge timber sale was delayed, while the BLM was acquiring rights-of-way across private land. This situation delayed the needed repairs on the Cotton Creek segment. There was a need to repair fill failures, undersized culverts, diverted streams at blocked culverts, and rutted road surfaces contributing to chronic sediment and turbidity in Cotton Creek (EA p. 73). Therefore these repairs were made in August of 2009 as part of the general road maintenance program.

Table 1 shows how the selected action meets the purpose and need of the project as compared to the No Action and Proposed Action/Selected Action, and is an update of EA Table 27, EA pp. 98-100.

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

<i>Purpose and Need</i>	<i>No Action</i>	<i>Proposed Action and Selected Action</i>
Develop timber sales that can be successfully offered to the market place.	<b>Does not fulfill.</b>	<b>Fulfills.</b>
Achieve a desirable balance between wood volume production, quality of wood, and timber value at harvest (RMP p. D-3).	<b>Partially fulfills.</b> Partially meets wood volume production over course of rotation <sup>1</sup> . Logs at end of rotation will be a smaller diameter than the action alternatives. Smaller diameters generally reduce the quality and value compared to thinned stands.	<b>Fulfills.</b> Maintains volume production over the course of the rotation <sup>1</sup> . Promotes faster diameter growth by reducing tree densities therefore allowing trees more room to grow. Previous experience with this type of treatment has resulted in larger diameter logs at the end of the rotation.
Maintain the health and growth of developing stands.	<b>Does not fulfill.</b> Stand health and tree growth rates will begin to decline if stands are not thinned. Competition will result in mortality of smaller trees and some co-dominant trees in the stands.	<b>Fulfills.</b> Stand health and tree growth rates will be maintained as dominant trees are released to grow faster as a result of removing smaller and some co-dominant trees competing with the dominant overstory for space, light, and nutrients.
Retain elements that provide ecosystem diversity (snags, old growth trees, etc.) so that a healthy forest ecosystem can be maintained with habitat to support plant and animal populations (RMP p. 1, 20).	<b>Partially fulfills.</b> Retains existing elements, but does not enhance conditions to provide these elements for the future stand.	<b>Fulfills.</b> Retains the elements described under “no action” on untreated areas of the stands in the project areas and encourages development of larger diameter trees and more open stand conditions in treated areas. This adds an element of diversity to the landscape not provided on BLM lands as soon under the No Action alternative.

<i>Purpose and Need</i>	<i>No Action</i>	<i>Proposed Action and Selected Action</i>
Increase height and diameter to develop future large coarse woody debris, snag habitat, in-stream large wood and other elements of late-successional forest habitat. (RMP p.1)	<b>Fulfills</b> , but not as soon.	<b>Fulfills.</b> Will meet the Purpose and Need sooner (10-30 years) by concentrating stand growth on fewer stems. See above.
Provide for structural and spatial stand diversity on a landscape level in the long term.	<b>Fulfills</b> by maintaining current trends that will develop diversity slowly.	<b>Fulfills.</b> Accelerates changes in some parts of some stands to develop more elements of diversity faster. Experience has shown that lower tree densities give the remaining trees more room to grow, resulting in larger trees. As trees die, larger trees become larger snags and larger down logs than currently exist within the stands to be thinned. Large snags and down wood, currently lacking in the stands to be thinned, are components associated with increased diversity.
Provide appropriate access for timber harvest, silvicultural practices, and fire protection vehicles.	<b>Fulfills.</b> Existing roads meet this purpose and need.	<b>Fulfills.</b> Will implement maintenance of feeder roads, allowing improved access for management activities.
Reduce potential human sources of wildfire ignition by controlling access and treating fuels.	<b>Partially fulfills.</b> Access is adequately controlled by existing gates and berms.	<b>Fulfills.</b> The sale area is behind privately controlled gates. New road construction will be blocked after logging activities.
Reduce adverse environmental effects associated with identified existing roads within the project areas (RMP p. 11).	<b>Fulfills.</b>	<b>Fulfills.</b>

<sup>1</sup> The point where the stand is ready for regeneration harvest

#### 4.0 Decision Rationale

Considering public comment, the content of the FY 2006 Timber Sale Thinning EA and supporting project record, the management recommendations contained in the 2006 Rock Creek/Pudding River Watershed Analysis (DR section 5.0), and the management direction contained in the 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: This alternative was not selected because it does not meet the Purpose and Need directly, or delays the achievement of the Purpose and Need (EA p. 14), as shown in DR Table 1, above.
2. EA Proposed Action: This alternative was not selected because BLM was not able to secure access to Units MR 7E, 7F, 7G, 7H, 7N and 7O. For this reason I decided to defer thinning treatments in Units MR 7E, 7F, 7G, 7H, 7K, 7N to a later date. I adjusted the road location in Unit 7C to access 7O. I also chose to defer timber harvest activities in EA Units 16F and 17A because it is not cost effective to repair the road accessing these units. Deferral of the eight units will result in no new road construction (approximately 0.2 miles) to access Unit 16F. Additionally, I decided to not construct the new road proposed in Unit 9A.

Variable density thinning and the inclusion of clumps and gaps were proposed in the Riparian LUA (EA p. 15). I have decided to defer the inclusion of clumps and gaps at this time to allow for the development of increased growth rates and stand diameters in the proposed units as a result of current treatments.

3. Missouri Ridge Alternative 2: This alternative was not selected because the renovation of that portion of Cotton Creek road is no longer needed. See the description of the selected action (DR section 3.0).
4. Selected Action: Due to the access issues described above in the proposed action, I altered the proposed new road construction location in Units MR7C and 7O. My decision to defer eight units and make boundary adjustments on Units 1-4 resulted in the reduction of 56 acres proposed for skyline yarding and 89 acres proposed for ground based yarding for a total of 145 deferred acres<sup>1</sup>. The selected action, described in DR sections 2.0 and 3.0, 8.0-10.0:
  - Meets the purpose and need of the project, FY 2006 Timber Sale Thinning EA section 1.2, as shown in DR Table 1 (DR section 3.0).
  - Complies with the Salem District Record of Decision and Resource Management Plan, May 1995 (RMP) and related documents which direct and provide the legal framework for management of BLM lands within the Salem District (EA p. 13, as modified by DR section 5.0).
  - Is responsive to concerns for an economically efficient project.
  - Responds to problems encountered in securing access to certain BLM land parcels.
  - Improves fire suppression opportunities by treating slash along property lines.
  - Will not contribute to the expansion of invasive/nonnative weed populations.
  - Will not have significant impacts on the affected elements of the environment (EA pp. 2-6, DR section 7.0) beyond those already anticipated and addressed in the RMP EIS.
  - Uses the minimum transportation system to facilitate implementation of the project.

## 5.0 Compliance with Direction

The following is an update of the Conformance with Land Use Plan, Statutes, Regulations, and other Plans section documented in the EA, p. 13. This selected action has been designed to conform to the following documents that direct and provide the legal framework for management of BLM lands within the Salem District.

1. *Salem District Record of Decision and Resource Management Plan*, May 1995 (RMP)
2. *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl and Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl*, April 1994 (the Northwest Forest Plan, or NWFP);
3. *Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines*, January 2001 (2001 SMROD). Since the release of the EA, the 2004 Survey and Manage (SM) ROD and the 2007 SMROD have been withdrawn.

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<sup>1</sup> Includes the difference in road R-o-W acres

Projects not meeting the 2006 Pechman exemptions (October 2006 order) would be surveyed in accordance with this 2001 SMROD. The Missouri Ridge selected action does not need additional SM surveys because the project meets Pechman exemption A. See the Survey and Manage Review.

### **Survey and Manage Species Review**

On December 17, 2009, the U.S. District Court for the Western District of Washington issued an order in *Conservation Northwest, et al. v. Rey, et al.*, No. 08-1067 (W.D. Wash.) (Coughenour, J.), granting Plaintiffs' motion for partial summary judgment and finding a variety of NEPA violations in the BLM and USFS 2007 Record of Decision eliminating the Survey and Manage mitigation measure. Previously, in 2006, the District Court (Judge Pechman) had invalidated the agencies' 2004 RODs eliminating Survey and Manage due to NEPA violations. Following the District Court's 2006 ruling, parties to the litigation had entered into a stipulation exempting certain categories of activities from the Survey and Manage standard (hereinafter "Pechman exemptions").

Judge Pechman's Order from October 11, 2006 directs: "Defendants shall not authorize, allow, or permit to continue any logging or other ground-disturbing activities on projects to which the 2004 ROD applied unless such activities are in compliance with the 2001 ROD (as the 2001 ROD was amended or modified as of March 21, 2004), except that this order will not apply to:

- A. Thinning projects in stands younger than 80 years old;
- B. Replacing culverts on roads that are in use and part of the road system, and removing culverts if the road is temporary or to be decommissioned;
- C. Riparian and stream improvement projects where the riparian work is riparian planting, obtaining material for placing in-stream, and road or trail decommissioning; and where the stream improvement work is the placement large wood, channel and floodplain reconstruction, or removal of channel diversions; and
- D. The portions of project involving hazardous fuel treatments where prescribed fire is applied. Any portion of a hazardous fuel treatment project involving commercial logging will remain subject to the survey and management requirements except for thinning of stands younger than 80 years old under subparagraph a. of this paragraph."

Following the Court's December 17, 2009 ruling, the Pechman exemptions are still in place. Judge Coughenour deferred issuing a remedy in his December 17, 2009 order until further proceedings, and did not enjoin the BLM from proceeding with projects. Nevertheless, I have reviewed the Missouri Ridge thinning project in consideration of both the December 17, 2009 and October 11, 2006 order.

Proposed Missouri Ridge thinning units are 30-70 years old (EA p. 102, DR section 8.0). Because this project entails no regeneration harvest and entails thinning in stands less than 80 years old, I have made the determination that this project meets Exemption A of the Pechman Exemptions (October 11, 2006 Order).

Therefore this project may still proceed to be offered for sale even if the District Court sets aside or otherwise enjoins use of the 2007 Survey and Manage Record of Decision since the Pechman exemptions would remain valid in such case. The first notice for sale will appear in the newspaper on February 23, 2011.



## Aquatic Conservation Strategy

In compliance with PCFFA IV (Civ. No. 04-1299RSM), this project complies with the Aquatic Conservation Strategy described in the Northwest Forest Plan and RMP. This project also complies with the PCFFA II (265 F.3d 1028 (9th Cir. 2001)) by analyzing the site scale effects on the Aquatic Conservation Strategy (ACS).

### ***Review of Aquatic Conservation Strategy Compliance:***

I have reviewed this analysis and have determined that the project complies with the ACS on the project (site) scale. The following is an update of how this project complies with the four components of the Aquatic Conservation Strategy, originally documented in the EA, pp. 50, 51. The project will comply with:

- ***Component 1 – Riparian Reserves:*** by maintaining canopy cover along all streams and the wetlands, which will protect stream bank stability and water temperature. Riparian Reserve boundaries are established consistent with direction from the *Salem District Resource Management Plan* (p. 10). No new road construction will take place with the Riparian Reserve LUA except at one specific location adjacent to a private pasture (DR 2.0, Road Work and Haul).
- ***Component 2 – Key Watershed:*** by establishing that the Missouri Ridge Thinning project is not within a Key watershed.
- ***Component 3 – Watershed Analysis:*** The Rock Creek/Pudding River Watershed Analysis was completed in 2006. The following Watershed Analysis recommendations apply to the selected action.
  - *Manage stands within the GFMA on a rotation to Culmination of Mean Annual Increment (CMAI) in conformance with the PRMP (RMP) (WA p.66).* Thinning in the GFMA (Matrix) portion of the thinning units is an intermediate step toward a rotation to CMAI (RMP p. 48).
  - *Utilizing fire for fuels management treatments generally limited to prescribed understory burning and pile burning in conjunction with commercial thinning (WA p.67).* Pile burning is included in the selected action. Understory burning (broadcast) was not proposed or selected. Piling and burning will be used for fuel treatments in selected areas adjacent to open roads and in the Wildland Urban Interface. These treatments are expected to result in reduced hazard of wildfire (EA p. 47).
  - *GFMA(LUA): Implement intensive management treatments such as pre-commercial thinning, post and pole removal, fertilization, pruning, commercial thinning where management emphasis is primarily timber production (WA p.74).* The selected action will implement commercial thinning within the GFMA LUA (DR section 2.0).
  - *Fisheries: Improve the tree size and species mix in riparian areas which presently have small diameter conifers or are dominated by hardwood species. Silvicultural practices that could be considered include thinnings in conifer stands (WA p.76).*
- ***Component 4 – Watershed Restoration:*** Thinning in the Riparian Reserve land use allocation will be expected to result in long-term restoration of large conifers and the potential for material that will contribute to in-stream habitat complexity in the long-term.

In addition I have reviewed this project against the ACS objectives at the project or site scale with the following results. The no action alternative does not retard or prevent the attainment of ACS objectives 1-9 because this alternative will maintain current conditions. The selected action does not retard or prevent the attainment of ACS objectives 1-9 for the reasons stated in the following paragraphs:

- **ACS Objective (ACSO) 1 - Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted:** The proposed thinning in portions of the Riparian Reserve Land Use Allocation will result in forest stands that exhibit attributes typically associated with stands of a more advanced age and stand structural development (larger trees, a more developed understory, and an increase in the number, size and quality of snags and down logs) sooner than will result from the No Action Alternative (EA pp. 27, 41-44, 78-79).
- **ACSO 2 – Maintain and restore spatial and temporal connectivity within and between watersheds:** Implementation of the selected action will not eliminate connectivity between project units or adjacent untreated stands under BLM management due to the selected action's enhancement of stand structure development within Riparian Reserves. The proposed new road construction in Units 2 and 3 crosses an intermittent stream channel that is dry during the summer season, the terrain is flat and it is adjacent to a private pasture land void of treed vegetation, thus there is no additional impact to connective riparian habitat. See ACSO1.
- **ACSO 3 - Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations:** Under the selected action there will be no direct alteration of any stream channel, wetland or pond morphological feature. All operations, equipment and disturbances will be at least 60-100 feet from perennial stream channels (and 35-60 feet from intermittent stream channels) (DR section 2.0).
- **ACSO 4 - Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems:** Stream Protection Zones (SPZs) in Riparian Reserve LUA will be maintained. The proposed temporary road for the selected action crosses at a location that is flat, generally dry and construction will take place during the dry time of year (EA pp. 19, 74). The selected action will be unlikely to have any measurable effect on stream temperatures, pH, or dissolved oxygen. Sediment transport and turbidity within the project area may increase over the short term as a direct result of timber hauling and road maintenance on existing roads within the Riparian Reserve LUA. Over the long-term (beyond 3-5 years), current conditions and trends in turbidity and sediment yield will return to pre-project levels (EA pp. 31-34).
- **ACSO 5 - Maintain and restore the sediment regime under which aquatic ecosystems evolved:** (EA pp. 31-34). See ACSO 4. Tree removal, road renovation and construction will not occur on steep unstable slopes where the potential for mass wasting adjacent to stream reaches is greatest. Therefore, increases in sediment delivery to streams due to mass wasting are unlikely to result from this action.

Implementing Best Management Practices (BMP) for thinning, yarding, hauling, culvert replacement and road design and use will reduce the potential for detectable sediment delivery to streams as a result of operations.

Stream and road buffers, minimum road widths, minimal excavation, ensuring appropriate drainage from road sites, and seasonal limitations on road use and ground-based harvest operations (RMP Appendix C, pp. C-1 to C-9) (EA pp. 18-21) will further reduce the potential for detectable sediment delivery to streams.

- **ACSO 6 – Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing:** (EA pp. 31-34).

*Ground Water:* It is unlikely the proposal will result in any detectable change to local ground water. The proposal will remove less than half the existing forest cover in the Riparian LUA and less than 60 percent in the Matrix portions of the harvest area, and the root systems of the conifers retained will quickly exploit any additional soil moisture availability. Proposed road construction will not involve excavation into side slopes where water tables could be intercepted.

*Base Flow:* It is unlikely the proposal will result in any detectable change to local base flow, because the proposed project will remove approximately half the existing forest cover, so that the root systems of the conifers retained will quickly exploit any additional soil moisture availability.

*Peak flow:* The Missouri ridge project area is not in the zone subject to transient snow accumulations in the winter. Therefore it is unlikely that the reduction in stand density will result in increased snow accumulation and melting during rain-on-snow (ROS) events (EA p. 74).

- **ACSO 7 - Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.** There will be no alteration of any stream channel, wetland or pond morphological feature. All operations, equipment and disturbances will be kept 60-100 feet from perennial stream channels, and 35-60 feet from all intermittent stream channels. Thus, the current condition of floodplain inundation and water tables will be maintained (EA p. 131).
- **ACSO 8 – Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability:** See ACSO 1. Stream protection zones (SPZs) will maintain structural diversity of plant communities in riparian areas and wetlands from 35-60 feet (intermittent streams) to 60-100 feet (perennial streams) in treatment areas. Thinning in Riparian Reserve LUA outside of the SPZs will help to restore species composition by allowing more understory development and structural diversity by creating horizontal and vertical variations that are currently lacking in the riparian treatment areas (EA p. 27).
- **ACSO 9 - Maintain and restore habitat to support well-distributed populations of native plant, invertebrate and vertebrate riparian-dependent species: The proposed thinning would not prevent the attainment of this objective.** See ACSO 1. The selected action will maintain habitat for riparian dependent species. In the long term (10- 20 years), the treatments will restore elements of structural diversity to treatment areas in Riparian Reserves.

These attributes will help to provide resources currently lacking or of low quality, and over the long-term, will benefit both aquatic and terrestrial species (EA pp. 27, 28).

## **6.0 Public Involvement/ Consultation/Coordination**

### **Scoping**

A description of the proposal was included in the Salem Bureau of Land Management Project Update which was mailed to more than 1,000 addresses. A letter asking for scoping input on the proposal was mailed on October 14, 2004 to adjacent landowners, Tribes, Federal, State, County and local government organizations and individuals who expressed an interest in management activities in the resource area as a whole or in this area. I received 14 comment letters that were specific to Missouri Ridge. Scoping comments for the four project areas were addressed in the EA, p. 116-119.

### **Comment Period and Comments**

The FY 2006 Timber Sale Thinning EA was mailed to agencies, individuals and organizations. Legal notices were placed in the Molalla Pioneer, Stayton Mail and Albany Democrat Herald newspapers, soliciting public input on the actions, from July 20, 2005 to August 19, 2005. There were no EA comment letters specific to Missouri Ridge. However I did receive comments about the EA. Responses to substantive public comments common to all projects can be found in DR section 11.0.

### **Endangered Species Act (ESA) Section 7 Consultation**

1. *US Fish and Wildlife Service*: The Missouri Ridge Thinning project was submitted for ESA Section 7 Consultation during the FY2011/2012 consultation process. *The biological assessment of NLAA for projects with the potential to modify the habitat of the Northern Spotted Owl, Willamette Province, FY 2011-2012 (BA)*, was submitted in March 2010. Using effect determination guidelines, the BA concluded that overall, the Missouri Ridge Thinning project may affect, but is not likely to adversely affect the Northern Spotted Owl due to the modification of dispersal habitat (BA, pp. 10, 25-26, 29).

The Letter of Concurrence (LOC) associated with these thinning was issued in June 2010 (reference #13420-2010-I-0092). The LOC concurred that these thinning may effect, but are not likely to adversely affect spotted owls (LOC p.38). None of the proposed units are located in Critical Habitat for the Northern Spotted Owl. The proposed thinning and connected actions described in the EA have incorporated the applicable management standards that were described in the BA, pp.6-8, and LOC Section 1.2, pp.14-16. No seasonal restriction for spotted owls is recommended because none of the proposed units are within disruption distance of a known spotted owl site (LOC pp. 13, 15).

2. *NOAA Fisheries (NMFS)*: The effect of the thinning project on Upper Willamette River (UWR) Chinook salmon and UWR steelhead trout changed from "May Affect" to "No Effect" due to dropping the Cotton Creek road repair from the selected action. The Cotton Creek repair took place as part of the general road maintenance program. (See DR section 3.0 under the selected action).

The determination of “no effect” is based on the distances (>1 mile) from proposed project units to ESA listed fish habitat and on the following factors that will prevent increases in sediment input, stream turbidity or temperature to stream reaches potentially occupied by ESA listed fish species (EA p.76-77). The selected action incorporates limited road construction (1.2 miles), with only one location having minimal hydrologic connectivity) and culvert replacements will take place only during the in-water work period.

Stream protection zones of 60-100 feet on perennial streams and at 35-60 feet on intermittent stream channels, and retaining >50% canopy closure in secondary shade zones are expected to prevent any decrease in stream shade that could result in an increase in stream temperature. Stream protection zones would also prevent sediment from overland flow or surface erosion in logging units from reaching streams (EA p. 19, 35). Consultation with NOAA Fisheries is not required for projects with a “no effect” call.

## 7.0 Conclusion

### **Review of Finding of No Significant Impact**

The analysis for the Missouri Ridge Timber Sale, documented in the FY 2006 Timber Sale 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).

I have made a final decision on the Missouri Ridge thinning timber sale. The selected action is described in DR section 2.0. Effects of the selected action are similar to or less than the effects described in the EA due to fewer acres being thinned. I have reviewed the FY 2006 Thinning EA, the Finding of No Significant Impact (EA pp. pp. 2-6), supporting documents, EA public comments, and this DR. Based on this review, I have determined that the Missouri Ridge 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:** Potential effects resulting from the implementation of the selected action have been analyzed within the context of the project area boundaries, and the Rock Creek/Pudding Creek watershed. This project will affect approximately 143 acres or 0.3 percent of the 53,764 acre watershed [40 CFR 1508.27(a)]

**Intensity** refers to severity of impact [40 CFR 1508.27(b)]. The following text shows how that the proposed project 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)] – The effects of commercial thinning are unlikely to have significant (beneficial and adverse) impacts for the following reasons:
  - Project design features described in EA pp. 18-21 and in the Decision Rationale 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:** The proposed action will not contribute to the need to list any BLM Special Status Species because no suitable habitat for any species known or likely to be present will be lost or altered to a degree that may impact existing populations (EA p. 29). Increases in the number of invasive/non-native plants are expected to be short lived because all areas with ground disturbing activities associated with the proposed project will be revegetated with native species, and/or native species will naturally revegetate these areas after thinning activities (EA p. 29).
  - **Hydrology; Fisheries and Aquatic Habitat; and Soils:** Road construction will occur on gentle slopes with stable, vegetated surfaces. Stream protection zones (60-100 feet on perennial streams, 35-60 feet on intermittent streams) will maintain current stream temperatures by retaining the current vegetation in the primary shade zone, combined with retaining >50% canopy closure in the secondary shade zone (EA pp. 19, 33, 35).  
Stream protection zones are also expected to prevent sediment as a result of overland flow or surface erosion in logging units from reaching streams (EA p. 19, 35). Timber haul and road maintenance project design features will prevent sedimentation delivery to streams in quantities that would exceed Oregon DEQ requirements. The proposed action will abide by and meet State of Oregon water quality standards. Soil compaction is limited to no more than 10 percent of each unit's acreage (EA p. 37).
  - **Wildlife:** Stands proposed for thinning are not presently functioning as late-successional old growth habitat (EA pp. 78, 109). Existing snags, remnant old growth trees and coarse woody debris (CWD) will be retained (EA pp. 19, 42). Project will not contribute to the need to list any BLM Special Status species because no suitable habitat for BLM Special Status species known or likely to be present will be lost (EA pp. 29, 42). Thinning will not significantly change species richness of the Migratory and Resident Bird community. No species will be extirpated in stands as a result of thinning (Ea p. 43). See # 9, for effects to northern spotted owl.
  - **Air Quality and Fire Hazard/Risk (EA section 3.3.6):** After 3 to 5 years the fine fuels generated by thinning will be decayed in the units and the risk of surface fire will decrease to near current levels (EA p. 47). The thinning itself will decrease the risk of a canopy fire. The proposed action will comply with State of Oregon Air Quality Standards by strict adherence to smoke management regulations. (EA p. 46).
2. [40 CFR 1508.27(b) (2)] - The selected action will not adversely affect public health or safety.
  3. [40 CFR 1508.27(b) (3)] - The selected action will not affect historical or historical resources, parklands, prime farmlands, wild and scenic rivers, wilderness, or ecologically critical areas because these resources are not located within the project area (EA pp. 22, 23).
  4. [40 CFR 1508.27(b) (4)] - The effects of the project on the quality of the human environment are not likely to be highly controversial because the proposed project 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 effects associated as a result of the project do not have not uncertain, unique or unknown risks because the BLM has experience implementing similar actions in similar areas without these risks and project design features will minimize the risks associated with the project (EA pp. 18-21). See # 4, above.

6. [40 CFR 1508.27(b) (6)] - The project is in the scope of proposed activities document in the RMP EIS. 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)] - The Interdisciplinary Team (IDT) evaluated the project area in context of past, present and reasonably foreseeable actions and determined that there is a potential for cumulative effects on water quality and fisheries (EA p. 25). These effects are not expected to be significant because any sediment increase resulting from thinning will be too small to be discernable relative to background sediment yields, will not be expected to exceed ODEQ water quality standards and will decrease quickly over time, returning to current levels within three to five years as vegetation increases (Dissmeyer, 2000).

The limited magnitude (less than 5 percent of the total 6th field watershed sediment supply, an undetectable change) and duration (primarily major storm events during the first year following disturbance) of this effect will likely be insignificant for water quality on the watershed scale. Cumulatively, the proposed 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 pp. 5, 34)

8. [40 CFR 1508.27(b) (8)] - The project will not 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: affect these resources because these resources are not present within the project area (EA pp. 22, 23)
9. [40 CFR 1508.27(b) (9)] - The proposed project is not expected to adversely affect Endangered Species Act (ESA) listed species or critical habitat for the following reasons:
  - ESA Wildlife - Northern spotted owl: The project maintains dispersal habitat, and does not affect suitable owl habitat because no suitable owl habitat is present in the project area (EA p. 78); habitat conditions are expected to improve as thinned stands mature (>20 years) (EA p. 79); residual trees will increase in size and be available for recruitment or creation of snags, culls and CWD for prey species and nesting opportunities, particularly in Riparian Reserves (EA p. 27). ESA Consultation is described in DR section 6.0.
  - ESA Fish: Listed fish habitat is >1 mile downstream of thinning units. Stream protection zones will maintain shade levels and prevent sediment from reaching stream channels. Effects of the log hauling are not significant because hauling will be conducted in summer when road surfaces are dry, and ditches are densely vegetated. New road construction will be located in stable locations and will not contribute to degradation of aquatic habitat (EA p. 35). ESA Consultation is described in DR section 6.0.)
10. [40 CFR 1508.27(b) (10)] - The proposed thinning activities have been designed to follow Federal, State, and local laws or requirements imposed for the protection of the environment (EA p. 22, DR section 5.0)

**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. This notice of decision will be published in the *Molalla Pioneer* newspaper on February 23, 2011. The planned sale date is March 23, 2011.

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 (4:00 p.m.) on March 10, 2011. 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, I will consider the decision 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).

**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) 375-5973 , Cascades Resource Area, Salem BLM, 1717 Fabry Road SE, Salem, Oregon 97306.

Approved by: Cindy Enstrom  
Cindy Enstrom  
Cascades Resource Area Field Manager

2/22/2011  
Date



## 8.0 Selected Action

### Comparison of the Selected Action with the EA Proposed Action

The selected action implements units (MR) 7B, 7C, 7D, 7I, 7L, 7M, R7O, 7P, and 9A of the EA proposed action (EA p. 105). Eight Units (7E, 7F, 7G, 7H, 7K, 7N, 16F and 17A) were deferred from the proposed action. This resulted in a reduction of 77 acres of thinning in the GFMA LUA and 71 acres of thinning from the Riparian LUA (DR table 2). Additional acres were dropped from EA units 7L, 7M, 7P to facilitate more cost efficient logging. See DR sections 2.0-4.0, and 7.0. DR Tables 2 and 3 compare the EA proposed action and the selected action.

**Table 2: Comparison of the Selected Action with the EA Proposed Action by Action**

Action		EA Missouri Ridge Proposed Action <sup>1</sup>	Selected Action <sup>2</sup>	Difference	
Timber Harvest (Acres)	Commercial Thinning	Matrix Land Use Allocation (GFMA)	202	125	-77
		Riparian Reserve Land Use Allocation	85	14	-71
		Total Commercial thinning	287	139	-148
	Road Right of way clearing (Matrix LUA)	1	4	3	
	Total Acres of Timber Harvest	288	143	-145	
Logging System (Acres)	Ground-Based - Skidding		220	131	-89
	Skyline – Uphill, One-end suspension		68	12	-56
Road Work	Road Access	New road construction (miles)	1.0	1.2	0.2
		Road Renovation/ Road Maintenance (miles)	4.4	2.8	-1.6
	Road Stabilization and Blocking	New road construction (miles)	1.0	1.2	0.2
		Debris barricade road blocks on roads 6-1E-12 and 6-2E-8 at the beginning of the new road construction (#)	1	2	1
		Replace/upgrade gates on roads 6-1E-12 and 6-2E-5 (#)	0	2	2
		Install new gate on road 6-2E-5 (#)	0	1	1
Fuels Treatments (Acres)	Pile Burning (hand pile and machine pile)		189	10	-179

<sup>1</sup> Preliminary mapping used for EA analysis by the Interdisciplinary Team (IDT) is based on information in the GIS data base and initial reconnaissance.

<sup>2</sup> The selected action units are based on final unit boundary layout based on further field reconnaissance. Selected acres have been computed using Global Positioning System surveys of actual treatment boundaries. Ground-based yarding acres include the road right-of-way acres.

**Table 3: Cross over between EA and Timber Sale Units along with Selected Action Thinning and Road Construction/Renovation by Unit**

Stand Age	Proposed Action		Selected Action									
	EA Unit Acres	EA Unit # MR	Timber Sale Unit #	Timber Sale Unit Acres	Thinning Acres by Method and LUA				Road Renovation (miles)	Road Construction (miles)	* Vegetation to be Cleared for new road construction (R-o-W Acres)	Remarks
					Ground-Based		Skyline					
					Riparian	Matrix	Riparian	Matrix				
60-70	46	7B,7D	1	29	6	23	0	0	0	0.2	1	* Vegetation to be cleared for the Road ROW will occur within the Matrix LUA using Ground based yarding
30-60	53	7I, 7O	2	43	1	36	1	5	0	0.5	1.6	
30-60	52	7C,7L, 7M,7P	3	43	3	34	1	5	0	0.4	1.4	
40	43	9A	4	24	2	22	0	0	0	0	0	
									2.8	0.1	0	Access outside of the thinning units
Totals	194			139 +4*=143	12	115	2	10	2.8	1.2	4	
			Ground based Yarding Acres = 127 + 4* = 131				Riparian LUA Acres = 14			Road R-o-W acres = 4*		
			Skyline Yarding Acres = 12				Matrix LUA Acres = 125 + 4* = 129			Thinning Acres = 139		

\* Road R-o-W acres (see Remarks)

## 9.0 Maps

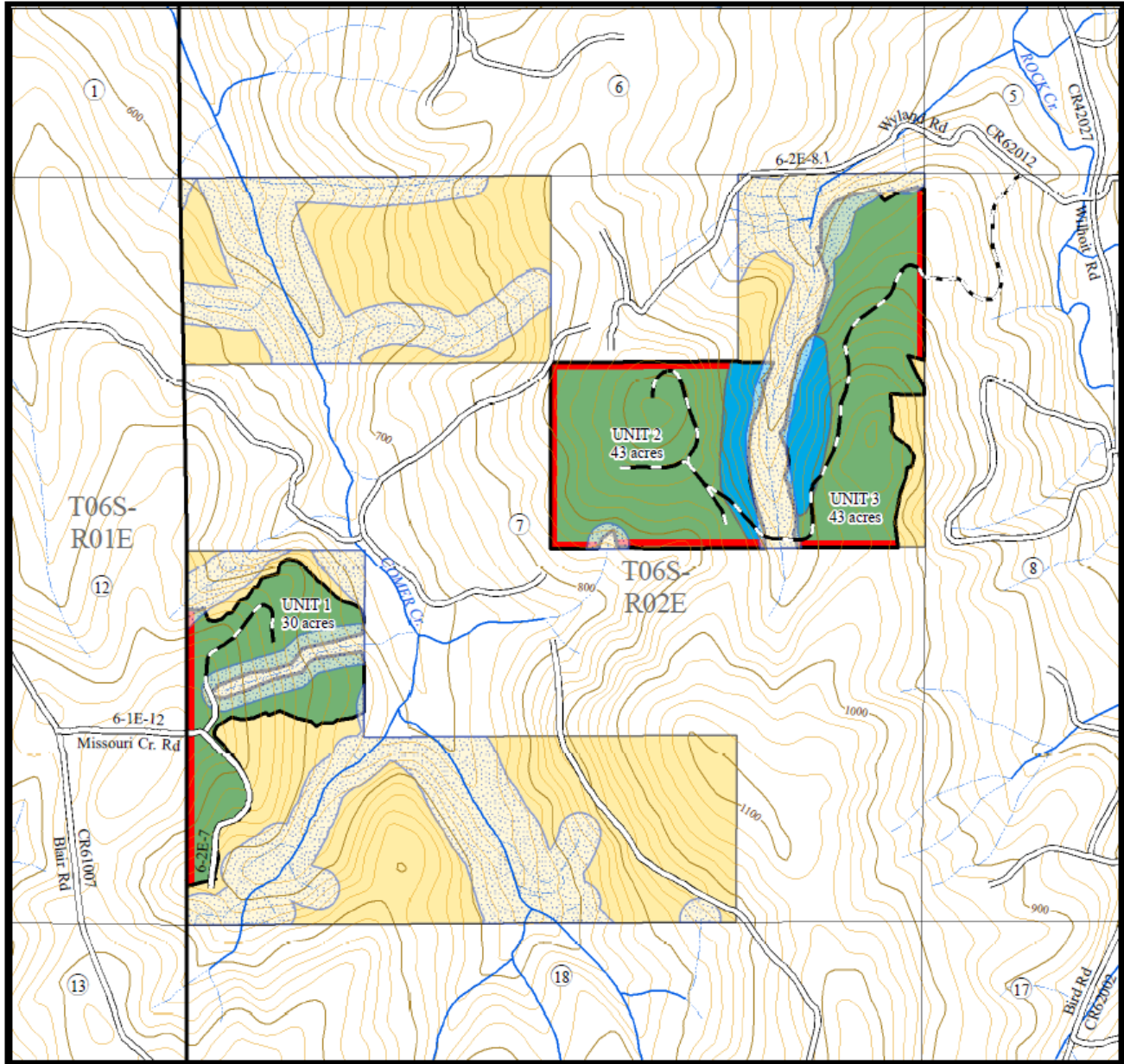
Maps of the selected action (Figures 1 and 2) are shown on the following pages.

# Missouri Ridge Thinning Selected Action

Decision Rationale EA No. OR080-04-20

T.6 S., R. 2 E., Section 7 W. M. SALEM DISTRICT- OREGON












Figure 1 of 2



Contour Interval: 20'

0.5 0.25 0 Miles

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.

-  Thinning Unit Boundary
-  Skyline yarding
-  Ground-Based yarding
-  Fuel Reduction Area
-  Riparian Reserve LUA
-  BLM Land
-  New Road Construction
-  Road Renovation
-  Existing Road
-  Intermittent Stream
-  Perennial Stream

February 10, 2011  
Bureau Of Land Management  
Salem District Office  
Cascades Resource Area

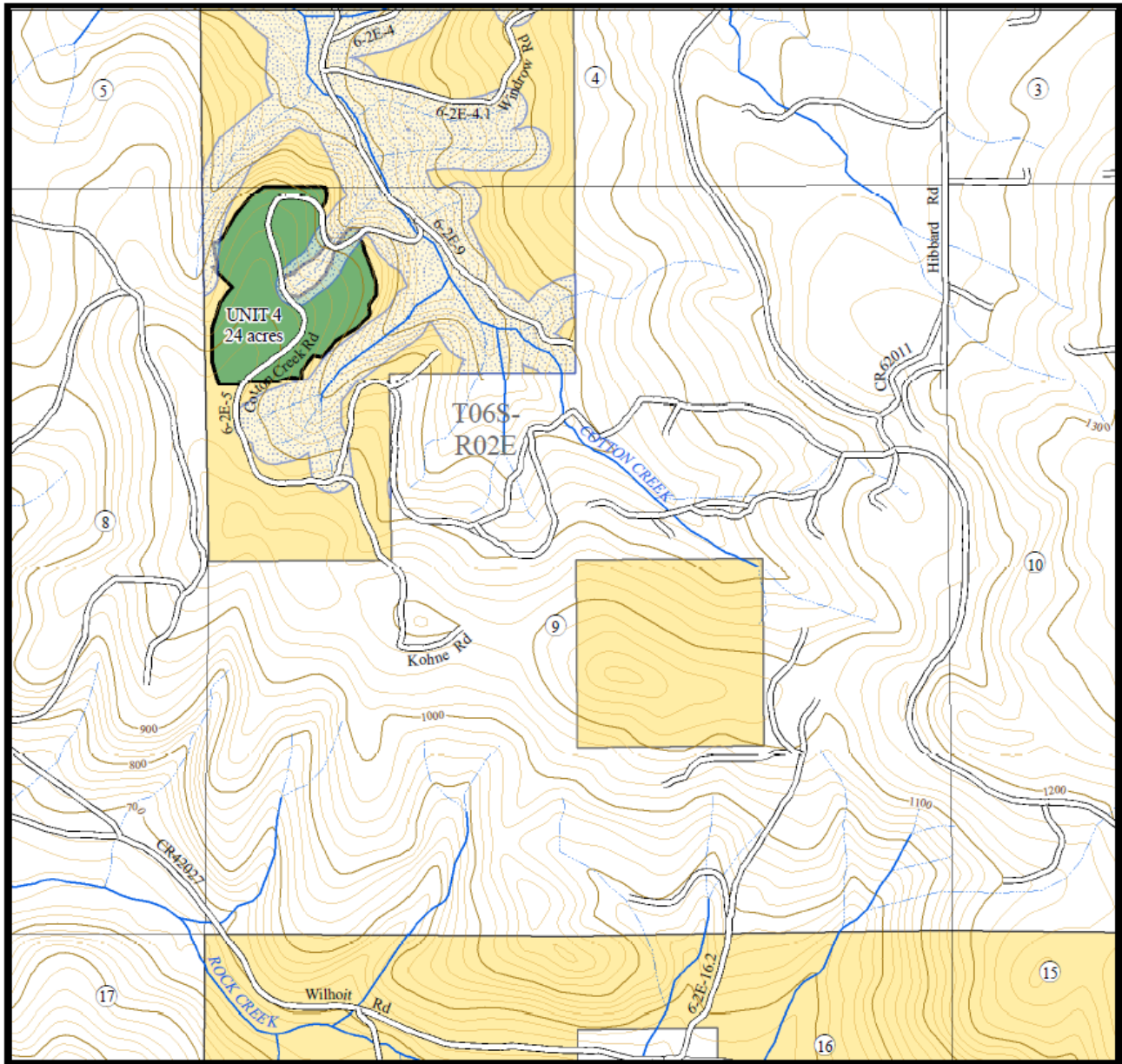


# Missouri Ridge Thinning Selected Action

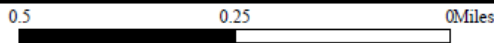
Decision Rationale EA No. OR080-04-20

T.6 S., R. 2 E., Section 9 W. M. SALEM DISTRICT- OREGON








Figure 2 of 2



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.

-  Thinning Unit Boundary
-  Ground-Based yarding
-  Riparian Reserve LUA
-  BLM Land
-  Existing Road
-  Intermittent Stream
-  Perennial Stream

February 10, 2011  
Bureau Of Land Management  
Salem District Office  
Cascades Resource Area



## 10.0 Project Design Features

This section summarizes the EA project design features that apply to the selected action. Project design features for the EA proposed actions and alternatives are described in EA pp. 18-21. Design features are organized by resource management objectives.

- 1. To protect soil productivity:** Design features include: a) using currently available equipment and practices that limit soil compaction to less than 10 percent of the area and minimize soil disturbance and erosion potential; b) preventing erosion by logging design, practices and post harvest treatment of disturbed areas; c) limiting ground based operations to relatively dry soil conditions; d) limiting new skid trails to slopes less than 35 percent; e) burning piles when soils are wet and less susceptible to heat damage.
- 2. To protect hydrologic functions, aquatic habitat and fisheries** Design features include: a) maintaining areas of undisturbed vegetation between streams and harvest areas, also known as stream protection zones (SPZ); b) constructing, improving, renovating and stabilizing roads during dry conditions; c) stabilizing, and controlling access to all new roads upon project completion; d) placing erosion control measures on roads left open over the winter; e) restricting hauling to times and road conditions to reduce the risk of sediment entering streams.
- 3. To protect and enhance the residual stand, stand diversity, and wildlife habitat components:** Design features include: a) retaining old growth, snags, minor conifer tree species, hardwoods, and most cull and deformed trees; b) retaining existing CWD intact whenever feasible; c) maintaining minimum canopy closures of 40 percent in Matrix and 50 percent in Riparian LUAs; d) restricting operations during the spring growing season when the bark of retained trees is easily damaged.
- 4. To protect against expansion of invasive and non-native plant species:** Design features include: a) cleaning equipment to prevent importing off-site plants; b) using only native species seed and sterile mulch to stabilize disturbed soil.
- 5. To protect special status plant and animal species:** Design features include: shutting down or restricting operations after finding plant or animal populations that require protection.
- 6. To reduce fire hazard risk and protect air quality:** Design features include: a) treating activity fuels (woody debris that could contribute to fire spread) adjacent to property lines in Rural/Urban Interface areas; b) burning in compliance with the Oregon State Smoke Management Plan; c) closing or gating roads to reduce fire risk on a site-specific basis.
- 7. To protect cultural resources:** Design features include: shutting down or restricting operations after finding cultural resources that require protection.

## 11.0 Response to EA Comments

The FY 2006 Timber Sale Thinning EA was mailed to agencies, individuals and organizations. Legal notices were placed in the Molalla Pioneer, Stayton Mail and Albany Democrat Herald newspapers, soliciting public input on the actions, from July 20, 2005 to August 19, 2005. I received no EA comment letters specific to the Missouri Ridge timber sale. Because the EA covered four project areas, I also received comments that were common to all the projects. The major concerns raised in the comments have been consolidated and summarized.

### Aquatic Systems, Hydrology, Riparian Reserves, Fisheries

1. *The EA p 14 description of the purpose of riparian reserves fails to account of the need to maintain the current functionality of riparian and aquatic systems. One of your evaluation criteria should be whether any short-term degradation of ACS objectives is off-set by long-term benefits brought about by the proposed action.. Some fear thinning will increase the risk of premature landsliding while the trees are still small, and end up delivering fewer and smaller trees than if left unthinned. Others think the increase risk of slides from partial removal is minimal and these are an area where thinning should be targeted. Please discuss this question in the NEPA analysis...Steep slope area(s) should be deferred because they are “potentially unstable” and should be included in the riparian reserve system. The impacts of this (sedimentation, mass wasting, habitat for an array of species, including Special Status Species) were not fully disclosed (in RR treatments).*

**Response to #1:** The EA shows that the proposed action maintains current functionality of riparian and aquatic systems by retaining shade on streams, retaining 50% canopy closure within riparian reserves (EA p.15), maintaining owl dispersal habitat (EA p. 79), retaining a forest environment (photos 1-4, EA p. 28), maintaining water temperatures, physical integrity of the stream channels, stream flows (EA p. 30-31). Results from previous thinnings have shown an increase in tree diameters because of more spacing as a result of thinning. More space between trees allows the remaining trees more room to grow and results in an overall increase in tree diameters over the next 20 years.

The ACS objectives were examined at the site scale (DR section 5.0). Thinning near or adjacent to perennial streams is not expected to have adverse effects on the water quality and aquatic habitat within those streams. All perennial streams have 60-100' stream protection zones (SPZ). The new road proposed for construction is located on gently sloped terrain; therefore it is not likely to cause stream sedimentation. The new road does cross one intermittent stream; however, because the terrain is flat at the crossing the likelihood for sedimentation entering the stream is very low.

In addition, EA p. 35 discusses that dry season hauling will minimize sediment entering streams. Therefore it is unlikely that this proposal will lead to a measurable change in sediment regime, including increases in sediment delivery to streams, stream turbidity, or the alteration of stream substrate composition or sediment transport regime. EA p. 32 states that tree removal, and road renovation and construction will not occur on steep unstable slopes where the potential for mass wasting adjacent to stream reaches is high. Therefore, increases in sediment delivery to streams due to mass wasting are unlikely to result from these actions.

2. Design Features: *The agency cannot assume that the implementation of BMPs will sufficiently mitigate any problems that the proposed project will have on aquatic systems...Despite the lengthy praise given to BMPs in the EA, there is no proof of “demonstrated ability” of BMPs to be successful in diminishing harm. ..In order to mitigate potential fire hazards, the EA/FONSI requires that pile burning take place during the wet season only. This stipulation is in direct opposition to BMPs insisting that any sediment-causing activities occur during dry months only. How do you plan to uphold both stipulations simultaneously?*

**Response to #2:** Best management practices (BMPs) applied to timber harvest operations and related forest management activities are the primary means of achieving state water quality standards on forestlands. To review an example, the reader can see the following EPA web site: <http://www.epa.gov/owow/nps/forestrygmt/>. BMPs are continually being evaluated both for implementation and effectiveness by federal and state agencies, researchers and private land owners. There are numerous examples in the scientific literature of studies in which BMPs have been evaluated for effectiveness at controlling non-point pollution; several of these articles were cited in the specialist reports to the EAs.

For an example of BMP effectiveness at controlling sediment related water quality impacts the reader is directed to Effectiveness of Timber Harvest Practices for Controlling Sediment Related Water Quality Impacts ( Rashin et al., Journal of the American Water Resources Association 42(5):1307-1327. “Stream buffers were effective at preventing chronic sediment delivery to streams and physical disturbance of stream channels.” (From the abstract).

Pile burning does not cause sediment. Pile burning may result in exposed soil surfaces that are approximately 10-20 feet in diameter and widely scattered. However, exposed soil surfaces following pile burning are unlikely to result in sediment delivery to local streams, even during the rainy season because pile burning takes place after an adequate amount of rain has fallen in order to prevent the fire in the pile from spreading. In our numerous years of burning piles in the Cascades we have not observed any areas where erosion occurred because a pile was burned. There is generally unburned or charred debris (10-20% of the original pile) left on site along with surrounding vegetation that helps to contain any movement of ash or soil.

3. Fish: *The effects determination for Threatened anadromous fish populations must consider the impervious surface areas outside of project units and factor in sedimentation from this surrounding land. Sedimentation from surrounding development must be factored into the effects determination. Until this is accounted for, project activities cannot proceed.*

**Response to #3:** The main impervious surface areas in the vicinity of the Missouri Ridge Thinning timber sale units, outside of the project units are roads. Since timber hauling is limited to periods of dry road conditions and conditions where sediment will not be delivered to streams, road related sediment inputs to streams are expected to be negligible (EA p. 34). The 60-100' stream protection zones on perennial streams and 35-60' stream protection zones on intermittent streams are expected to prevent any decrease in stream shade that could result in an increase in stream temperature. See also response to comment 13.

The determination of “no effect” is based on the distances from proposed project units to ESA listed fish habitat 1-7 miles to steelhead habitat, 11-14 miles to chinook habitat (EA p. 107) and on the factors stated above that will prevent increases in sediment input, stream turbidity or temperature to stream reaches potentially occupied by ESA listed fish species (EA p. 76). The short term increase in sediment from the culvert replacement of the Cotton Creek road addressed on page 76 of the EA is not part of the project since the culvert replacement has already taken place (See DR section 3.0).

#### **Soil Productivity/ Fuels Treatments**

4. Organic soil components: *There are specific problems with the EA/FONSI’s total lack of information on organic soil components.*

**Response to #4:** Organic soil components and soil organisms are included in the effects to soils (EA pp. 37-39). EA p. 39 addresses the cumulative effects of the proposed action on soil. Efforts to minimize any soil disturbance or compaction are outlined in EA pp. 18-19.

5. Ground based yarding: *Our observation of serious soil damage in other ground-based logging operations raises our concerns about this logging method... Machine piling of fuels and pile burning can have serious adverse impacts on soils.*

**Response to #5:** EA pp. 18-19 discuss design features to minimize soil productivity loss by ground based logging. Effects to soils are described in EA pp 37-39. By burning slash piles during the cool, wet fall weather the amount of heat that is produced is reduced. Most of the slash piles will be located on ground already compacted by logging operations.

6. Soil mycorrhizae: *Without a discussion of the impacts to soil mycorrhizae, both Bark and the decision maker are precluded from making an informed decision regarding the proposed project, and the USFS cannot assert that there will be no permanent impairment of the soil. The EA/FONSI fails to address how past logging has affected mycorrhizae in areas within the analysis area.*

**Response to #6:** Mycorrhizae is considered a component of soil and is addressed in the EA as soil. Design features are being implemented to reduce impacts such as compaction and erosion (EA pp. 18-19). The project has been designed to not adversely impact more than 10% of the area as directed in the RMP. In addition, Mycorrhizal fungi are not listed as a Special Status Species or a Special Attention Species therefore does not require additional survey or management.

#### **Late Seral Habitat, Northern Spotted Owl, Snags and Coarse Woody Debris (CWD)**

7. Owl Habitat: *The project will result in 1,882 acres of (northern spotted owl) Dispersal Habitat downgraded, including the loss of 171 acres of NRF suitable habitat, which will no longer support nesting, roosting, and/or foraging behavior. All stands that are late Successional old growth; in other words 80 years or older, should be excluded entirely from this project, staying completely out of LSOG stands.*



**Response to #7:** Timber stands within the Missouri Ridge timber sale are 30-70 years old and do not contain old growth, LSOG, NRF or late-successional habitat. The selected action is a light to moderate thinning in dispersal habitat (EA p. 109-110).

8. Design Features: *The Proposed Action fails to adhere to conservation stipulations enacted for the protection of the northern spotted owl and therefore should be withdrawn. ..Furthermore, this project very poorly adheres to BMPs concerning spotted owl protection. During the critical nesting period, While there might not be a nest located at the time of the survey, allowing logging and hauling could assure that there would not be nests there in the near future due to disturbance....Just because FWS does not require surveys for Threatened spotted owls, NEPA has an independent mandate to become well-informed of the actual consequences of major federal actions. Before deciding to log suitable habitat the agency must conduct protocol surveys for spotted owls and their prey major species. Further, we understand that the agency took advantage of its new authority to reach an effects determination without consulting the US Fish and Wildlife Service.*

**Response to #8:** The selected action follows current management direction with regard to northern spotted owl. No nesting, roosting, or foraging habitat is being affected by the proposed thinning. The BLM did not survey for northern spotted owl in the Missouri Ridge project area for the following reasons. The EA (p. 78) states that for the Missouri Ridge project:

The proposed thinning units provide 246 acres of dispersal habitat however, dispersal capability is impaired due to its location on the edge of the Willamette Valley. The proposal also includes 35 acres of capable non-habitat consisting of young stands less than 30 years of age. Spotted owls have never been observed in the vicinity of the proposed units.... The closest known spotted owl site is located 8 to 10 miles to the southeast. There are no unmapped LSRs in the vicinity of the proposed units.

Consultation for this project is described in DR section 6.0.

9. Snags: *We agree that large snags (>20" dbh) snags are the most critical to retain, but smaller snag are also ecologically valuable and efforts should be made to protect all snags >10" to the extent possible. The agency must avoid any reduction of existing or future snags and logs (including as part of this project) until the applicable management plans are rewritten to update the snag retention standards...Snags should be carefully inventoried by species, size, decay status, quality, and location during project planning, and they should be treated as "special habitats" and given special protection during project planning and implementation (i.e. keep workers out of the vicinity of snags so that OSHA doesn't order them cut).*

**Response to #9:** Most wildlife species that utilize snags are associated with snags greater than 14 inches, and about a third of these species use snags >29" dbh (Rose et. al., 2001). Page 109 of the EA summarizes the CWD and snags within the project area. Design features common to all project areas will retain existing large snags (>20" dbh) and old growth trees (EA pp. 19, 41). Any snags cut or incidentally knocked down, including those snags under 20" dbh, will be left on site as down logs and CWD, which is also valuable wildlife habitat and important for nutrient cycling. In addition, by accelerating the growth of the residual trees left after treatment, larger material will be available sooner (than without thinning) to contribute additional large snags to the future stand. The project meets the standards and guidelines set forth in the RMP. Changing stand retention guidelines is outside the scope of this project.

Also, because the selected action thins 148 fewer acres than the proposed action, the selected action will disturb fewer snags.

### **Other Forest Habitat**

10. *Microhabitat Drying: The EA/FONSI predicts that microhabitat drying will persist unabated for 10-20 years after thinning, at which time it would only begin to decrease. However, as explained in the EA, future harvest activities may restart as soon as the canopy closes (resulting in more microhabitat drying).*

**Response to #10:** Some microhabitat drying could occur at the forest floor as canopies are opened-up, however, this will be minimal due to the high green tree retention after thinning (EA p. 43). Forest stands will continue to provide shade because the selected action will retain 60 to 120+ trees per acre and 40 to 50% canopy closure.

### **Other Species of Concern/ Survey and Manage Species**

11. *The EA claims to protect BLM Special Status plant and animal species and relies upon statutes and regulations listed on page 3, including the 2004 Final Supplemental Environmental Impact Statement to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines (“2004 SEIS”) Now that the survey and manage ROD has been declared illegal by Judge Pechman, the BLM should survey for red tree voles and other survey and manage species at least in all stands older than 80 years old.*

**Response to #11:** The selected action follows current Survey and Manage direction. Compliance with Survey and Manage direction is described in DR section 5.0.

### **Road Building And Road Renovation**

12. *Management should focus on thinning stands that are accessible from existing roads. If young stand thinning requires construction of temporary roads, the agency should do an analysis that illuminates how many acres of thinning are reached by each road segment so that we can distinguish between short segments of spur that allow access to large areas (big benefit, small cost) and long spurs that access small areas (small benefit, big cost). This can help inform the decision-maker’s balancing of the costs and benefits of thinning and roading... The agency assumes that temporary and semi-permanent new roads will have no effect because they are temporary. The agency has shown no scientific evidence for this assumption...The NEPA analysis must account for this (described in text) increased risk of temporary roads compared to permanent roads)...Temporary roads still cause serious adverse impacts to soil, water and wildlife, and spread weeds.... Decommissioning such roads is not entirely successful and the soil compaction effects can last for decades.....The agency should consider avoiding building spurs by treating some areas non-commercially (e.g. thin lightly, create lots of snags, and leave the material on site)...The NEPA analysis must address the significant cumulative watershed effects caused by past, present and foreseeable future road construction.*

**Response to #12:** EA p. 70 with an update in DR section 2.0 discuss road work associated with this project. Effects associated with new (temporary) road construction are described in the EA pp. 30-34, 71, 73-77. The project does not propose to build any more road than necessary to meet the purpose and need. Because BLM was unable to secure needed rights-of-way, additional road construction was necessary to access BLM land.

Project design features such as constructing roads in dry seasons, decommissioning roads, re-seeding, and use of erosion mats to stabilize soil will reduce the risk of effects to soil and aquatic systems.

Additionally, the new road construction will take place on gentle stable slopes without connectivity to perennial waterways. With regard to invasive species, all ground disturbing machines are required to be cleaned so as not to spread off site soil, plant parts and seeds (EA p. 19). Since the road system is behind locked gates access is regulated further reducing the potential for spreading invasive species. EA pp. 33-34 address cumulative effects common to all project areas. Within this section new road construction and existing road use are reviewed for possible cumulative effects specifically pertaining to watershed hydrology, and water quality.

### **Cumulative Effects Analysis**

13. *The EA does not actually analyze the cumulative impacts of this project and other past, current, and foreseeable future projects, including timber sales, livestock grazing, herbicide use, mining projects, off-road vehicle use, and other recreation and management activities on the watershed...In order for the finding of no significant impact to meet the fifth stipulation listed in the EA/FONSI, future anticipated thinning projects must be factored in the cumulative effects determination...The EA fails to disclose the watershed consequences at all spatial scales, as necessary for informed decision-making and as required by NEPA. Adequate cumulative effects analysis cannot be achieved with so many projects spanning such a wide range in various conditions.*

**Response to #13:** The interdisciplinary team evaluated the project areas in context of past, present and reasonably foreseeable actions [40 CFR 1508.27(b) (7)] (EA p. 4). Cumulative effects to resources are addressed on pages 4-5, 22-25, 33-34, 35, 39, 44, 49 of the EA.

### **Invasive Weeds**

14. *This EA provides very little in the way of mitigation, requiring only “Ground disturbing equipment would be cleaned as needed to be free of off-site soil, plant parts and seed (e.g. noxious weeds) prior to entering the project area” (EA, 19).*

**Response to #14:** Limited access due to the road system being behind locked gates, requiring ground disturbing equipment to be cleaned, and planting sites disturbed by timber sale activities (e.g. landings, skid trails) are effective ways to prevent the spread of invaders from one area to another.

### **Mitigation Measures**

15. *Where an environmental assessment relies on mitigation measures to reach a finding of no significant impact, that mitigation must be assured to occur and must “completely compensate for any possible adverse environmental impacts.” Cabinet Mountains Wilderness/Scotchman's Peak Grizzly Bears v. Peterson , 685 F.2d 678, 682 (D.C. Cir. 1982). Until the BLM is able to substantiate its proposed mitigation measures – i.e., that they are appropriate, will be implemented, and will be effective – the agency must withdraw the proposed project.*

**Response to #15:** For this project, mitigation measures are not being applied after significant effects have been determined. Instead, the project has been designed to meet the standards and guidelines of the Resource Management Plan. These standards and guidelines are designed to reduce the risk of effect to resources. The project design features incorporated into the development of this project tie directly to the RMP standards and guidelines and the results of ESA consultation (e.g. BMPs, seasonal restrictions).

### **Multi-project EA**

16. *This practice of large-scale NEPA analyses should be reserved for truly non-controversial projects, such as those in which focus exclusively on stands younger than 80 years old, minimal road construction, and using variable density thinning prescriptions. Since this project includes some controversial aspects, we are not highly supportive of the merged analysis in this case. Although the proposed actions may be similar for each of the 4 projects, their geographic range precludes the likelihood of similar environmental impacts.*

**Response to #16:** All aspects of the proposal are consistent with an existing EIS (the Salem RMP). With regard to effects to aquatic systems, there is no physical mechanism for the proposed action in one watershed to translate across a topographic divide and directly affect a channel in a separate watershed (EA p. 30). Though the EA analysis covers four project areas scattered over a large area, any decision for individual project areas is independent of the others. The Missouri Ridge project will thin stands 30-70 years of age (DR section 2.0).