

MIDDLE FALL CREEK THINNING ENVIRONMENTAL ASSESSMENT AND
FINDING OF NO SIGNIFICANT IMPACT

Environmental Assessment Number OR-080-04-03

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United States Department of the Interior
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Salem District
Mary's Peak Resource Area
Benton County, Oregon

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Abstract: This environmental assessment discloses the predicted environmental effects of three projects on federal land located in Township 14 South, Range 7 West, Sections 26 and 35, Willamette Meridian; and within the Upper Alsea River Watershed. Project 1 is a proposal to conduct commercial thinning on approximately 229 acres of 40-55 year old stands within Matrix (GFMA) and Riparian Reserve land use allocations. Project 2 is a proposal to determine if 1 to 3 trees per acre are functioning as hard snags/logs within the Riparian Reserve. If monitoring determines an inadequate level of hard snags/logs per acre, then 1 to 3 trees per acre (within the Riparian Reserve of the treatment areas of Project 1) and outside of fungi protection areas would be girdled, topped, or felled to achieve the target. Project 3 is a proposal to cut approximately 4 overstory conifers per acre (approximately 84 trees total) to release the crowns of large wolf trees or to release understory conifers within the Riparian Reserve of the recreation management area in Unit 35 B (see Alternative 2 map).

FINDING OF NO SIGNIFICANT IMPACT

Introduction

The Bureau of Land Management (BLM) has conducted an environmental analysis (Environmental Assessment Number OR080-04-03) for three projects. Project 1 is a proposal to commercially thin 40 to 55 year-old stands which include 106 acres in Matrix and 123 acres of Riparian Reserve land use allocation to increase structural diversity. The project area is within Township 14 South, Range 7 West, Sections 26 and 35, Willamette Meridian. Project 2 is a proposal to determine if 1 to 3 trees per acre are functioning as hard snags/logs within the Riparian Reserve. If monitoring determines an inadequate level of hard snags/logs per acre, then 1 to 3 trees per acre (within the Riparian Reserve of the treatment areas of Project 1) would be girdled, topped, or felled to achieve this target. Project 3 is a proposal within the Riparian Reserve of the recreation management area in Unit 35 B (see Alternative 2 map). Approximately 4 over story conifers per acre (approximately 84 trees total) would be cut to release the crowns of large wolf trees or to release understory conifers.

Implementation of the proposed action will conform to management actions and direction contained in the attached Middle Fall Creek Thinning Environmental Assessment (EA). The EA is attached to and incorporated by reference in this Finding of No Significant Impact (FONSI) determination. The project is subject to and is in compliance with the *Salem District Record of Decision and Resource Management Plan (RMP)*; *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl*; *Standards and Guidelines for Management of Habitat for Late Successional and Old Growth Related Species Within the Range of the Northern Spotted Owl (April 1994)*; *Record of Decision to Remove or Modify the Survey and Manage Mitigation Measure Standards*; and *Guidelines in Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl*, March 2004.

The EA and FONSI will be made available for public August 20, 2004 to September 20, 2004. The notice for public comment will be published in a legal notice by the Gazette Times newspaper and posted on the Internet at <http://www.or.blm.gov/salem/html/planning/index.htm> under Environmental Assessments. Comments received by the Marys Peak Resource Area of the Salem District Office, 1717 Fabry Road SE, Salem, Oregon 97306, on or before September 20, 2004 will be considered in making the final decisions for this project.

Finding of No Significant Impact

Based upon review of the EA and supporting documents, I have determined that the three projects are not major federal actions and would not significantly affect the quality of the human environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in context or intensity as defined in 40 CFR 1508.27. Therefore, an environmental impact statement is not needed. This finding is based on the following discussion:

Context:

Potential effects resulting from the implementation of the three projects have been analyzed within the context of the Upper Alsea River 5th-field Watershed and the project area boundaries. The three projects would occur on approximately 241 acres of BLM Matrix (General Forest Management Area [GFMA]) and Riparian Reserve land use allocations, encompassing less than 0.3 % of the Upper Alsea River Watershed [40 CFR 1508.27(a)].

Intensity:

1. Projects 1, 2 and 3 are unlikely to have any significant impacts on vegetation/botany, soils, air quality/fuels, water, fish, riparian reserves, recreation or wildlife resources. Any potential effects to these resources are anticipated to be site-specific and/or not measurable (i.e. undetectable over the watershed, downstream, and/or outside of the project area) [40 CFR 1508.27(b)(1), EA Chapter 2, 3 and 4 pp. (4-45)].
 - a. *Project 1 (Thinning)*: The following is a summary of the design features that would reduce the risk of affecting the above resources:
 - Retaining all coarse woody debris and snags, where possible, for wildlife habitat.
 - Seasonally restricting ground-based yarding and road construction operations to avoid runoff and sedimentation.
 - Operating equipment on top of slash and logging debris to minimize compaction.
 - Installing erosion control measures as needed [water bars, sediment traps in ditch lines, silt fences, straw bales, and grass seeding exposed mineral soil areas.
 - Establishing stream protection zones adjacent to all project area streams to maintain canopy cover, water quality, and channel morphology.
 - Providing protection to the *Allotropa virgata*, *Clitocybe senilis*, *Ramaria maculatipes*, *Ramaria araiospora*, *Ramaria gelatinaurantia*, *Ramaria botrytoides* and *Ramaria celerivirescens* known sites. All botanical protection areas would be protected and no activities/disturbances would occur in these areas. These sites would be protected from any activities in projects 1-3 including alternatives 1 and 2.
 - b. *Project 2 (CWD)*: Any disturbance to soil would be localized (outside of the stream protection zones) and unlikely to affect stream sedimentation, turbidity, temperature, or channel function. Because of the small amount of canopy and ground cover affected, this project would be unlikely to contribute to cumulative effects in the watershed.
 - c. *Project 3 (Conifer Release)*: Project is unlikely to have any measurable impact on water resources, unless a tree is felled into a stream. Where conifers would be cut and left on site, any disturbance to soil would be localized and unlikely to affect stream sedimentation, turbidity, temperature, or channel function. Because of the small amount of canopy and ground cover affected, the project would be unlikely to contribute to cumulative effects in the watershed.

Felling logs into a stream may temporarily increase amounts of suspended sediment and flow turbidity. However, these increases are likely to occur during and immediately following the project and would likely not be detectable downstream.

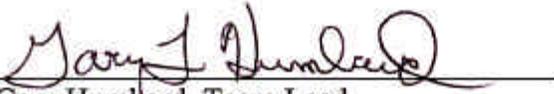
Over the long term, adding wood into stream channels would slow stream velocities, increase sedimentation, increase the retention of organic matter, and could raise the channel bed level.

2. *Projects 1, 2 and 3* would not affect:
 - Public health or safety [40 CFR 1508.27(b)(2)] (EA Tables 2, 6 and 7);
 - Unique characteristics of the geographic area [40 CFR 1508.27(b) (3)]. There are no historic or cultural resources, parklands, prime farmlands, wild and scenic rivers, wilderness, or ecologically critical areas located within the project area.
 - Districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places, nor would the proposed action cause loss or destruction of significant scientific, cultural, or historical resources [40 CFR 1508.27(b)(8)] (EA Tables 2, 6 and 7).
 - Botanical protection areas as these sites would be protected from any disturbances.
3. *Projects 1, 2 and 3* are not unique or unusual. The BLM has experience implementing similar actions in similar areas without highly controversial [40 CFR 1508.27(b) (4)], highly uncertain, or unique or unknown risks [40 CFR 1508.27(b) (5)].
4. *Projects 1, 2 and 3* do not set a precedent for future actions that may have significant effects, nor does it represent a decision in principle about a future consideration [40 CFR 1508.27(b)(6)].
5. The interdisciplinary team evaluated the three projects in context of past, present and reasonably foreseeable actions [40 CFR 1508.27(b) (7)]. Potential cumulative effects are described in the attached EA. These effects are not likely to be significant because of the projects' scope (effects are likely to be too small to be measurable), scale (project area of 241 acres, less than 0.3% of the total 5th-field watershed), and duration (direct effects would occur over a maximum period of 3 to 5 years).
6. *Projects 1, 2 and 3* are not expected to adversely affect endangered or threatened species or habitat under the Endangered Species Act (ESA) of 1973 [40 CFR 1508.27(b) (9)].

Wildlife: The proposed projects have been determined to be “no effect” to the northern spotted owl, marbled murrelet, and bald eagle. However, project 1 “may affect” northern spotted owl critical habitat. To address concerns for modification to northern spotted owl critical habitat, the proposed actions have been consulted on with the U.S. Fish and Wildlife Service. The resulting Biological Opinion (BO# 1-7-2002-F-958) concluded that this project, along with other similar projects that were consulted upon, would not result in jeopardy to the northern spotted, and would not adversely modify northern spotted owl critical habitat. All of the proposed projects described in this EA have incorporated the applicable design standards that are required for compliance with the Terms and Conditions set forth in the Biological Opinion.

Fish: The proposed actions location has three streams which flow into the South Fork Alsea River. The South Fork Alsea River provides habitat for Oregon Coast Coho salmon (approximately one mile down stream from the project area), which are listed as threatened under the Endangered Species Act. Consultation with NOAA Fisheries will be conducted under current BLM policy. A “*May Affect, Not Likely to Adversely Affect*” determination due to the small size, scope, and duration of this project was submitted to NOAA Fisheries in the biological assessment. A decision would not be made on this project until a letter of concurrence is received.

7. *Projects 1, 2 and 3* do not violate any known Federal, State, or local law or requirement imposed for the protection of the environment [40 CFR 1508.27(b)(10)] (EA Tables 2, 6 and 7).

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8/17/04
Date

Reviewed by: 
Carolyn Sands, NEPA

8/17/04
Date

Approved by: 
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ENVIRONMENTAL ASSESSMENT

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1.0 INTRODUCTION

1.1 Projects Covered in this EA

Three projects will be analyzed in this EA. Project 1 (Middle Fall Creek Thinning) is a proposal to perform commercial thinning on approximately 229 acres in the Matrix (General Forest Management Area) and Riparian Reserve land use allocations. Project 2 (Future Monitoring/Potential Creation of Coarse Woody Debris) is a proposal to monitor natural mortality recruitment to determine if three trees per acre are functioning as hard snags/logs (Class 1 or 2) within Riparian Reserve and to create CWD if deemed necessary. Project 3 (Release of existing conifer regeneration) is a proposal to release the crowns of large wolf trees or to release understory conifers within Riparian Reserve (specifically in the Recreation Management Area, Alternative 2 of project 1).

1.1.1 Relationship between Projects

- All three projects are located within the project area.
- Project 1 (thinning) and Project 2 (CWD creation) would occur within the same treatment areas.
- Project 2 (CWD creation) would occur within 3 to 5 years after the completion of Project 1 (Thinning).
- Project 3 (Conifer Release) would occur within the Recreation Protection Area (Alternative 2) within 3 to 5 years after completion of Project 1 (Thinning).
- Project 1 (Thinning) would be implemented within the scope of a timber sale and Projects 2 (CWD Creation) and Project 3 (Conifer Release) would be implemented if funding is provided.

1.2 Project Area Location

The project area is located approximately 7 air miles southwest of Alpine, Oregon, Benton County, on forested land managed by the Marys Peak Resource Area, Salem District of the Bureau of Land Management (BLM). The project area lies within the Upper Alsea River Watershed and is within Township 14 South, Range 7 West, Sections 26 and 35, Willamette Meridian (Map 1).

1.3 Compliance or Conformance with Land Use Plans, Policies, and Programs

Projects 1, 2, and 3 are subject to the Salem District Record of Decision and Resource Management Plan, May 1995 (**RMP**) and tier to the Salem District Proposed Resource Management Plan/Final Environmental Impact Statement, September 1994 (**RMP FEIS**). The discussion in this EA is site-specific and supplements analysis found in RMP/FEIS.

All projects are in conformance with the following documents which provide the legal framework, standards, and guidelines for management of BLM lands in the Mary's Peak Resource Area: 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 (NWFP); 3/ *Oregon Coast Province - Southern Portion Late-Successional Reserve Assessment (LSRA)*, 4/ *South Fork Alsea Watershed Analysis (The South Fork Alsea Watershed Analysis was completed in October 1995. p. 88 identifies potential density management opportunities within and outside of Riparian Reserve)*; 5/ *Record of Decision to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines in Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl*, March 2004 (SSSP).

The above documents are available for review in the Salem District Office. Additional information about the proposed Middle Fall Creek project is available in the Middle Fall Creek Timber Sale NEPA/EA Analysis File (MFAF), also available at the Salem District Office.

1.4 Decision to be made

Brad Keller, Marys Peak Field Manager is the official responsible for deciding whether or not to prepare an environmental impact statement, and whether to approve the projects as proposed, not at all, or to some other extent.

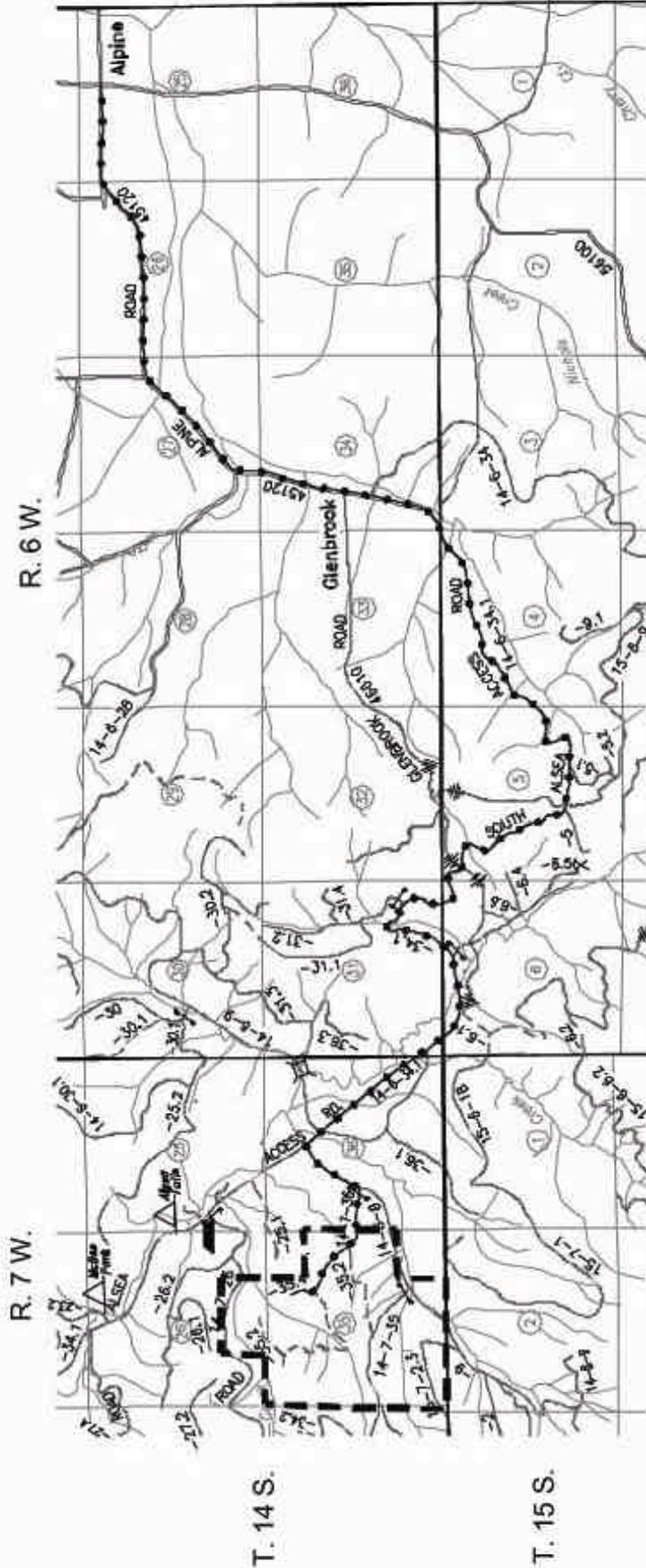
Map 1: Vicinity Map

United States Department of the Interior
BUREAU OF LAND MANAGEMENT

T. 14 S., R. 7 W., Sections 26 and 35, W.M. - SALEM DISTRICT - OREGON

Middle Fall Creek Thinning
Vicinity Map

Scale: 1" = 1 mile



Project Location



Access Route

2.0 PROJECT 1-MIDDLE FALL CREEK THINNING

2.1 Purpose of and Need for Action

Marys Peak Resource Area staff performed a comprehensive, landscape level analysis to determine relative priority of watershed areas within the Resource Area for ecosystem management. Assessments of watershed, wildlife, silviculture, transportation, and ownership conditions were made in comparison with provincial strategies to identify opportunities and needs and their relative urgency. The Upper Alsea watershed emerged as one of the highest priority areas to perform density management of forest stands, improve late successional habitat for marbled murrelet and northern spotted owl, and to improve watershed function and the road system.

As a follow up to the findings of the *South Fork Alsea Watershed Analysis*, the Marys Peak Resource Area silviculture and wildlife staff began prioritizing areas within the Resource Area that would benefit from density management and which would contribute to the provincial strategies for recovering conditions across the landscape. Stand exams were completed that focused on managed stands within the *South Fork Alsea Watershed Analysis* corridor. The proposed project is intended to implement a subset of specific management opportunities that were identified in the Watershed Analysis. The purpose of this project is to:

- Contribute toward District timber management goals and local economic diversity.
- Manage timber stands on Matrix lands for a sustainable supply of timber and other forest commodities for future harvest and other management options.
- Manage the roads in the area to meet transportation needs and Aquatic Conservation Strategy (ACS) objectives.
- Increase the structural diversity of forest stands in portions of the Riparian Reserve to meet ACS habitat objectives.
- Manage recreation opportunities within the adjacent Alsea Falls Recreation Area by retaining existing hiking/biking trails.

There is a need for:

- Reduced tree densities within stands in the project area in order to increase tree diameter growth.
- Increased late successional forest characteristics within Riparian Reserves, including terrestrial down wood and snags and the development of multilayered stands.
- A timber sale that could be successfully offered to purchasers, to meet timber harvest target objectives for this year (contributing to a stable timber supply). Additional needs to accomplish this would include:
 - Logging systems appropriate to the topography and to the silviculture prescription.
 - Access to the stands appropriate to logging the stand efficiently.
 - Roads which are hydrologically stable.

2.2 Alternatives

2.2.1 Alternative Development

Pursuant to Section 102 (2) (E) of NEPA (National Environmental Policy Act of 1969, as amended), Federal agencies shall “Study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” An unresolved conflict concerning alternative uses of available resources was identified between road construction/timber harvest activities and recreational use of an existing biking/hiking trail system within the project area. The project area is within close proximity of the Alsea Falls Recreation Area. Existing biking/hiking trails are located within the project area and portions of the trails would be obliterated by road construction and harvest operations. The area adjacent to the trails would be visually modified by thinning and logging operations.

An alternative proposing reduced acres of density management and road construction on existing trails would meet the purpose and need of the project and address these conflicts. Therefore, this EA will analyze the effects of the Alternative 1 (proposed action), Alternative 2 (would protect additional recreation opportunities) and Alternative 3 (No action).

2.2.2 Alternative 1 (Proposed Action)

This project consists of commercially thinning approximately 229 acres of a 40-55 year old stand within matrix (GFMA) and Riparian Reserve land use allocation. This project would occur through a timber sale (Middle Fall Creek thinning). Within the Matrix Land Use Allocation (LUA) approximately 7 acres would be thinned from below to achieve an average basal area of 140 sq ft/acre and approximately 99 acres would be thinned from below to achieve an average basal area of 120 sq ft/acre. Approximately 123 acres would be thinned to an average basal area of 120 sq ft/acre in the Riparian Reserve LUA. Trees would be skyline yarded on approximately 176 acres and ground based yarded on approximately 53 acres. New road construction and road renovation would also be a part of the proposed action.

2.2.2.1 Connected Actions

1. Road Work: Approximately 3,300 feet of road would be constructed predominantly on or near ridge top locations. Drain dips would be installed where cross drainage is necessary. Road renovation could include brushing, blading, and spot rocking at deficient locations and stream crossings on approximately 6,000 feet of existing roads. Drainage structure improvement and/or replacement would occur on approximately 21 cross drains and/or stream crossings. New culverts installed would meet 100 year flood design criteria.

Cut and fill slopes would be grass seeded and riprap would be placed as needed. Following harvest, all of the new construction (except P3) would be water barred and blocked to vehicular traffic. The P3 new construction would be decommissioned following harvest operations. Decommissioning could include: water-barring, ripping road surface, blocking access, piling slash and grass seeding exposed surfaces.

2. **Fuels Treatments:** Debris cleared during road construction would be scattered along the length of rights-of-way. Logging debris caused by falling and yarding operations would be cleared from approximately 4,500 feet of existing bike trail (Trail #2, #3 and #4) by hand. At the conclusion of yarding operations in Units 35A and 35B, the logging debris would be hand piled within a twenty (20) foot wide cleared corridor of bike trails 2, 3 and 4. Debris accumulations on landings and roads that are a result of yarding units 26A, 35A, 35B and 35C would be machine piled, covered with plastic and burned under favorable smoke dispersal conditions in the fall, in compliance with the State Smoke Management Plan.
3. **Skid Trail Construction:** Constructing new skid trails would be avoided where possible. New skid trail construction would follow the project design features described in section 2.2.2.2.
4. **Blocking Skid Trails:** After operations, skid trails would be water barred and grass seeded to mitigate soil erosion.
5. **Special forest product permits for floral greenery,** such as Oregon grape, sword-fern, and salal, and transplants such as vine maple, would be available by permit before and after harvest operations as appropriate for Matrix and Riparian Reserve designated lands in this portion of the Marys Peak Resource Area.
6. **If firewood is present on the landings after completion of the logging contract,** firewood permits may be made available to the public. Prescribed burning would be delayed one or more seasons in order to accommodate firewood cutting.

2.2.2.2 Project Design Features

The following is a summary of the design features that reduce the risk of effects to the affected elements of the environment described in EA section 2.3. The proposed activities would follow the standards and guidelines described in the RMP. Design features are organized by RMP objectives.

General

All logging activities would utilize the Best Management Practices (BMPs) required by the Federal Clean Water Act (as amended by the Water Quality Act of 1987).

Season of Operation/ Operating Conditions

Table 1: Season of Operation/ Operating Conditions

Season of Operation or Operating Conditions	Applies to Operation	Objective
July 15-April 15	Yarding outside of road right of ways (Skyline yarding)	Protecting the bark and cambium of residual trees
During periods of low precipitation, generally June 15-October 30	Ground based yarding (harvester/forwarder)	Minimize soil compaction and erosion
During periods of low precipitation, generally May 1-October 31	Road Construction	Minimize soil erosion
During periods of low soil moisture, generally July 15-October 15	Ground based yarding (tractor yarding)	Minimize soil compaction and erosion
During periods of dry weather and low soil moisture, generally May1-October 31	Timber hauling on the following roads: Road 14-7-36 from the jct. of Rd. 14-7-35.2 to its termination and Roads 14-7-35.3 and P3	Minimize soil erosion/ stream sedimentation

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

- Ground based yarding with either crawler tractors or harvester/forwarders would generally take place on slopes less than 35 percent in Units 26A, 35A 35B and 35C.
- Harvester/forwarder use would require that logs would be transported free of the ground. The equipment would be either rubber tired or track mounted, and have rear tires or tracks greater than 18 inches in width. Yarding corridors would be spaced approximately 60 feet apart and be less than 15 feet in width. Logging debris would be placed in yarding corridors in front of equipment to minimize the need for machines to go on bare soil.
- Crawler tractor use would require utilization of pre-designated skid trails spaced at least approximately 150 feet apart where they intersect boundaries and utilize existing skid trails as much as practical.
- Water bars would be constructed where they are determined to be necessary by the Authorized Officer.
- Areas of exposed soil within all new road construction and on ground-based yarding roads and landing locations would be seeded with Oregon certified (blue tagged) red fescue at a rate equal to 40 pounds per acre. The extent of soil disturbance would be determined in cable yarding corridors at the completion of yarding.
- Yarding with tractors would be restricted to periods of low soil moisture; generally between July 15 and October 15.

- Yarding with harvesters/forwarders would be restricted to periods of low soil moisture; generally between June 15 and October 30.
- In the skyline yarding area, one end suspension of logs would be required over as much of the area as possible to minimize soil compaction, damage to reserve trees, and disturbance. Yarding corridors would average approximately 150 feet apart where they intersect boundaries and be 15 feet or less in width. Lateral systems capable of yarding up to 75 feet from the skyline using an energized locking carriage would be required.
- To provide a minimum of one-end suspension, approximately 20 skyline corridors would be located outside the unit boundaries and within the stream protection zone. No yarding would be permitted in or through any stream protection zone within the harvest area. Trees in the corridors and within the stream protection zone which pose a safety hazard would be felled where practical toward the stream and left on site.
- Road construction would be restricted to periods of low precipitation (generally May through October).
- Generally, during road construction where grades are 8 percent or less, the roads would be outsloped and because the road locations where grades exceed 8 percent are located on the ridge top, the running surface would be crowned.
- Following logging Road P1 and P4 would be blocked to vehicular traffic.
- Log hauling would be allowed year-round on rock surfaced roads except as noted below.
- Log hauling would be permitted only during periods of dry weather, generally between May 1 and October 31 on the following roads: Road 14-7-36 from the jct. of Rd. 14-7-35.2 to its termination and Roads 14-7-35.3 and P3.
- During periods of rainfall when water is flowing off of road surfaces, the contract administrator may restrict log hauling to minimize water quality impacts, and/ or require the Purchaser to install silt fences, bark bags or apply additional road surface rock.

To meet the objectives of the “Aquatic Conservation Strategy (ACS)”

Riparian Reserves (ACS Component #1):

- Stream Protection Zones would be established along all streams and identified wet areas within the harvest area. These zones would be a minimum of approximately 50 feet from the high water mark (See MFAF).
- To protect water quality, trees would be felled away from all stream protection zones within the harvest area. If a cut tree does fall within a stream protection zone, the portion of the tree within the stream protection zone would remain in place. No yarding would be permitted in or through any stream protection zone within the harvest area.
- In-stream work would be allowed between July 1 and August 31, the period recommended by the Oregon Department of Fish and Wildlife.

To protect and enhance stand diversity and wildlife habitat components:

- Priorities for tree marking (upland and riparian) would be based on marking guidelines contained within the Silvicultural Prescription and Riparian Reserves Report, respectively (see MFAF).

- Except in yarding corridors, species diversity would be maintained by reserving all trees (merchantable and non merchantable) other than Douglas fir and western hemlock.
- All open grown wolf trees, existing snags and coarse woody debris would be reserved, except where they pose a safety risk or affect access and operability. Any snags or logs felled or moved for these purposes would remain on site within the project area.
- Within the riparian reserves additional trees would be cut around seedlings and understory trees in order to increase spacing variability. The number of reserved trees would keep the prescribed basal area described in section 2.2.2.
- Within the Riparian Reserve LUA any green trees intended to be part of the residual stand that are incidentally felled to facilitate access and operability (yarding corridors, hang-ups, tailholds) would be treated as follows:
 - Trees that are 20 inches DBHOB or greater would be retained on site.
 - Trees less than 20 inches DBHOB would be available for removal.
- At least 2 green trees/acre intended to be part of the residual stand would be felled/topped for CWD creation following harvest operations. Trees to be utilized for snag/down log creation would be stand average or larger diameter breast height (DBH). Incidentally felled trees or topped trees (tailtrees, intermediate support trees) that are left by harvest operations would be counted toward this target.

To protect the residual stand:

- One tree selected for its superior genetic quality would be protected, by reserving adjacent trees around it.
- In addition to seasonal restrictions to protect soil, water and wildlife resources, no skidding or yarding (except use of forwarder) would be allowed during the spring growing season (typically April 15 – July 15) when bark and cambium are easily damaged by those operations.

To protect Special Status, or uncommon Plants, Fungi and Animals:

- Although not included as Bureau special status species, uncommon coral fungi, *Clitocybe senilis*, *Ramaria maculatipes*, *Ramaria araiospora*, *Ramaria gelatinauriantia*, *Ramaria botrytoides* and *Ramaria celerivirescens*, known sites would be protected from harvest and are shown on the EA Maps (Alternatives 1 and 2) as Botanical Protection Areas. No activities/disturbances would occur in these areas.

To protect air quality:

- Fuel Treatment: Burning of machine piles would be done under favorable smoke dispersal conditions in the fall, in compliance with the State Smoke Management Plan.

To reduce fire hazard risk:

- Debris cleared during road construction would be scattered along the length of rights-of-way. Large accumulations and piles of debris that may later pose higher than necessary fire hazards would be avoided or would be covered with polyethylene and burned along with the landing piles.

- Debris accumulations on landings and along roads would be machine piled, covered with polyethelene plastic and burned under favorable smoke dispersal conditions in the fall, in compliance with the State smoke management plan.
- Debris accumulations on bike trails would be hand piled, covered with polyethelene plastic and burned under favorable smoke dispersal conditions in the fall, in compliance with the State smoke management plan.
- In order to mitigate fire risk the area would be monitored for the need of closing or restricting access during periods of high fire danger. During the closed fire season the first year following harvest activities, while fuels are in the red needle stage, the entire area would be posted closed to all off road motor vehicle use.

To maintain recreation management opportunities:

- New road construction (P1 and P4) on existing trails (Trail #3 and #4) would be blocked upon completion of operations.
- Trees would be felled away from trails where practicable.
- Yarding of logs across trails would be minimized where practicable.
- Right-of-way clearing limits would be minimized within new construction on existing bike trails (P1, P2 and P4).
- Tree seedlings would be planted and grass seed applied in disturbed areas adjacent to the trail system.

To protect Cultural Resources:

- No cultural or paleontological resources are known to exist in the project area. A post-harvest survey would be done upon completion of the project according to *Protocol for Managing Cultural Resources on Lands Administered by the BLM in Oregon; Appendix D* (August 5, 1998). If any sites are identified during timber harvesting, the operations would be immediately halted and the Field Manager would be notified. Operations would be resumed only with the Field Manager's approval, and only after appropriate mitigation measures are designed and implemented to provide any needed protection of those resources.

2.2.3 Alternative 2 - Reduced Density Management Treatment Area (Inclusion of Recreation Management Protection Area), and Reduced New Road Construction on Existing Bike Trail.

This project consists of thinning on approximately 213 acres of a 40-55 year old stand within matrix (GFMA) and Riparian Reserve land use allocation. Approximately 7 acres would be thinned from below to achieve an average basal area of 140 sq ft/acre and approximately 95 acres would be thinned from below to achieve an average basal area of 120 sq ft/acre in uplands. Approximately 111 acres would be thinned to an average basal area of 120 sq ft/acre in riparian reserves. The intent of the action is to create stand structural diversity, maintain recreational opportunities and produce a timber sale to be offered in fiscal year 2005. Trees would be skyline yarded on approximately 188 acres and ground based yarded on approximately 25 acres.

Approximately 2,140 feet of new ridgetop road would be constructed in Unit 35B and Unit 26A. The Connected Actions, Project Design Features and Cumulative Actions are identical to Alternative 1 with the following exceptions noted below.

2.2.3.1 Connected Actions

See connected actions for proposed action.

2.2.3.2 Project Design Features

The following design features would provide the recreation user a more diverse environment in an area that has been recently thinned and harvested. These features are important due to the minimal amount of designated recreation opportunities the BLM is currently able to provide in the Marys Peak RA. Alternative 2 would provide less visual disturbance over the short term to trail users. Alternative 2 complies with the RMP by managing scenic and natural resources to enhance visitor recreation experiences and satisfy public land users.

The following project design is described for Alternative 2, only where it differs from the proposed action.

To maintain recreation management opportunities:

- Approximately 2,000 feet of existing trail (Trail #3) would not be disturbed.
- Logging debris caused by falling and yarding operations would be cleared from approximately 3,000 feet of existing trail (Trail #2 and #4) by hand.
- In order to maintain some natural forest characteristics within the project area, approximately 16 acres of area identified in need of density management would be deferred as a recreation management area.
- Harvest operations including landings would not be allowed along a portion of Rd. 14-7-36 (milepost 1.56 to milepost 1.69).
- The visual effect of management activities would be minimized through careful locations, minimal disturbance, and repeating the basic elements of form, line, color and texture.

2.2.4 No Action Alternative

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

2.2.5 Maps of the Action Alternatives

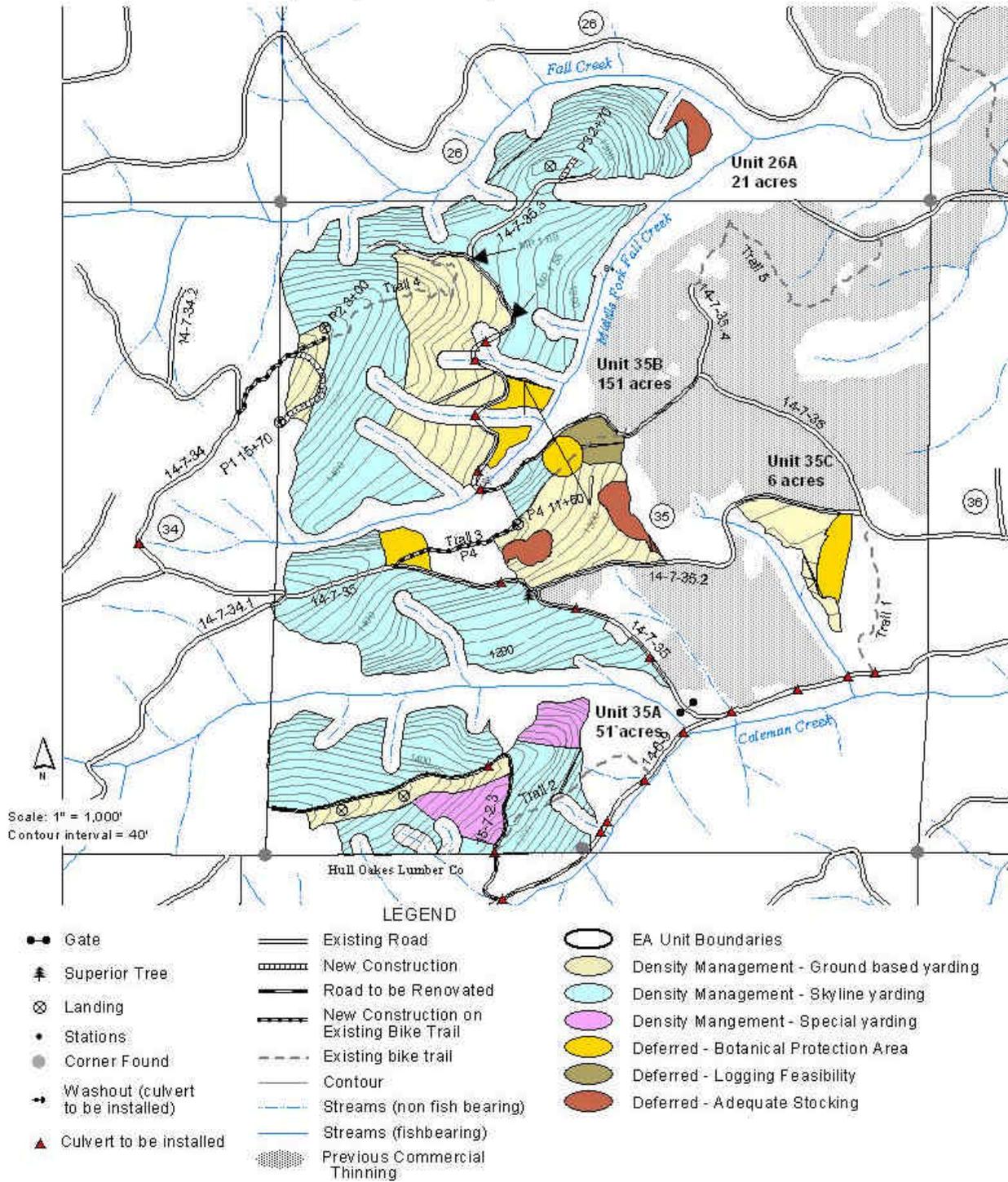
Map 2: Alternative 1 (Proposed Action)

July 13, 2004

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
MIDDLE FORK FALL CREEK EA MAP

**Alternative 1
(Proposed action)**

T. 14 S., R. 7 W., Sections 26 and 35, W. M. - SALEM DISTRICT - OREGON



Map 3: Alternative 2

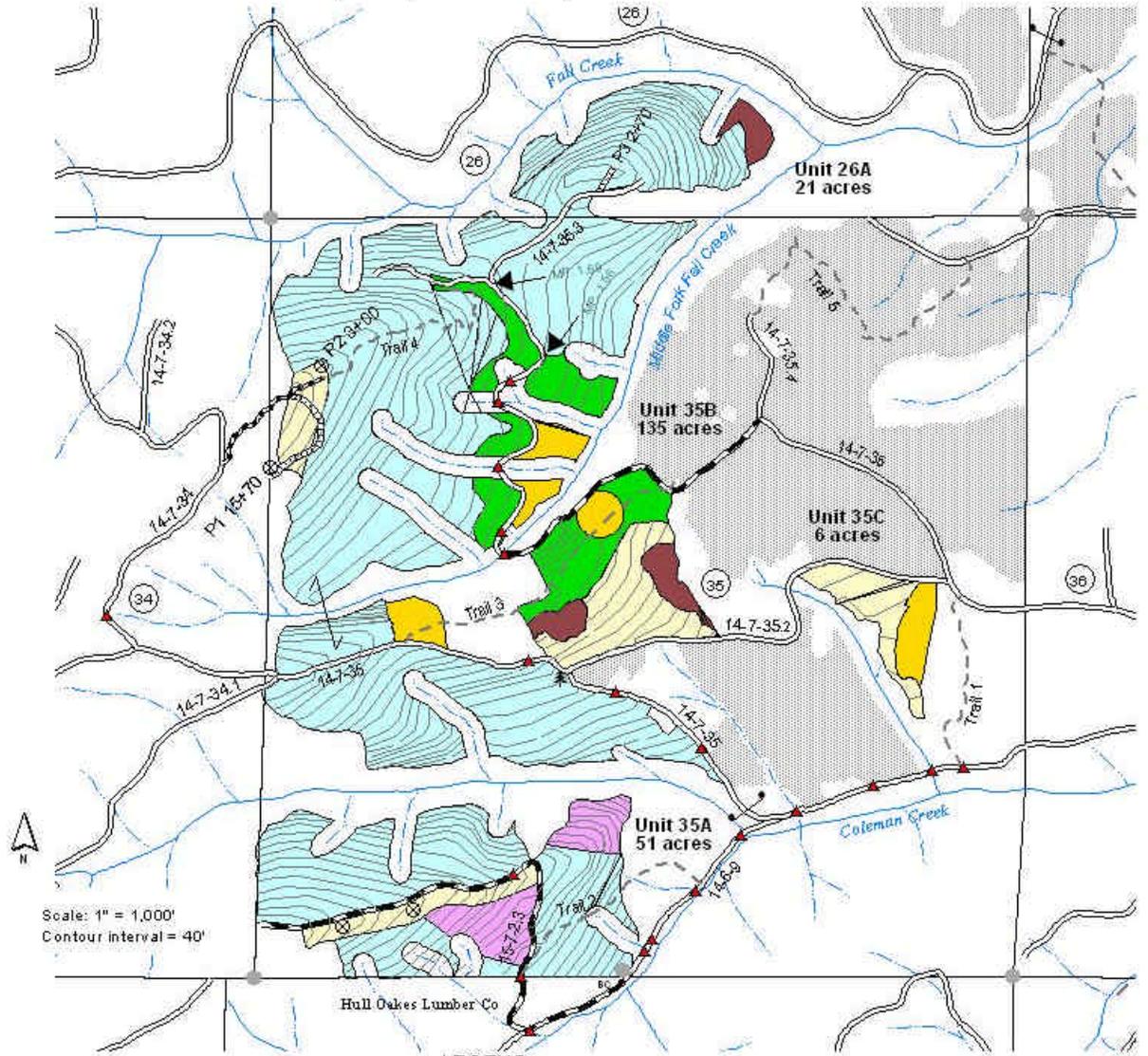
July 14, 2004

United States Department of the Interior
BUREAU OF LAND MANAGEMENT

Alternative 2

MIDDLE FORK FALL CREEK EA MAP

T. 14 S., R. 7 W., Sections 26 and 35, W. M. - SALEM DISTRICT - OREGON



LEGEND

●—● Gate	— Existing Road	○ EA Unit Boundaries
♣ Superior Tree	▨ New Construction	○ Density Management - Ground based yarding
⊗ Landing	— Road to be Renovated	○ Density Management - Skyline yarding
• Stations	— New Construction on Existing Bike Trail	○ Density Management - Special yarding
● Corner Found	--- Existing bike trail	○ Deferred - Botanical Protection Area
→ Washout (culvert to be installed)	— Contour	○ Deferred - Logging Feasibility
▲ Culvert to be installed	— Streams (non fish bearing)	○ Deferred - Adequate Stocking
	— Streams (fishbearing)	○ Deferred - Recreation Management Area
	▨ Previous Commercial Thinning	

2.3 Identification of Affected Elements of the Environment

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

Table 2: Affected Elements of the Environment

PROJECT 1 – MIDDLE FALL CREEK TIMBER SALE			
Elements Of The Human Environment	Status: (i.e., Not Present, Not Affected, or Affected)	Does this project contribute to cumulative effects? Yes/No	Remarks If not affected, why?
<i>Adverse Impacts on the National Energy Policy</i>	<i>Not Affected</i>	<i>No</i>	<i>There are no known energy resources located in the project area. The proposed action would have no effect on energy development, production, supply and/or distribution.</i>
Air Quality	Affected	Yes	<i>Effects to air quality are described in EA section 2.4.8 (Middle Fall Creek Thinning Timber Sale Proposal Fuels/Soils Report pp. 10)</i>
<i>Areas of Critical Environmental Concern</i>	<i>Not Present</i>	<i>No</i>	
<i>Cultural Resources</i>	<i>Not Affected</i>	<i>No</i>	<i>No pre-project surveys required as outlined in the Protocol for Managing Cultural Resources on Land Administered by the Bureau of Land Management in Oregon: (Cultural Resource/ Archeological Report pp.1)</i>
<i>Environmental Justice (Executive Order 12898)</i>	<i>Not Affected</i>	<i>No</i>	<i>The proposed action is not anticipated to have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.</i>
<i>Prime or Unique Farm Lands</i>	<i>Not Present</i>	<i>No</i>	
<i>Flood Plains</i>	<i>Not Affected</i>	<i>No</i>	<i>The proposed action does not involve occupancy and modification of floodplains, and would not increase the risk of flood plain loss.</i>
<i>Hazardous or Solid Wastes</i>	<i>Not Present</i>	<i>No</i>	
<i>Invasive, Nonnative Species (plants) (Executive Order 13112)</i>	<i>Affected</i>	<i>No</i>	<i>Effects to invasive/nonnative species are described in EA section 2.4.6 (Marys Peak Resource Area Botanical Report pp.5)</i>
<i>Native American Religious Concerns</i>	<i>Not Affected</i>	<i>No</i>	<i>No Native American religious concerns were identified during the public scoping period.</i>
<i>Threatened or Endangered (T/E) Fish Species or Habitat</i>	<i>Not Affected</i>	<i>No</i>	<i>Coastal Coho salmon are down stream approximately one mile (Aelsea Falls, natural fish barrier) from the project area. (Middle Fall Timber Sale Fish Input pp. 1-4)</i>

Elements Of The Human Environment	Status: (i.e., Not Present , Not Affected, or Affected)	Does this project contribute to cumulative effects? Yes/No	Remarks If not affected, why?
<i>Threatened or Endangered (T/E) Plant Species or Habitat</i>	<i>Not Present</i>	<i>No</i>	<i>(Marys Peak Resource Area Botanical Report pp. 1-6)</i>
Threatened or Endangered (T/E) Wildlife Species or Habitat	Northern Spotted Owl - Affected <i>Marbled Murrelet – Not Affected</i>	<i>Yes</i>	Effects to northern spotted owl are described in EA section 2.4.7. <i>The thinning and density management project would have no impact on marbled murrelet potential or suitable habitat and would not create a noise disturbance to nesting murrelets. The long-term impact of density management on murrelet habitat in the Riparian Reserve would be positive as it would develop into suitable habitat sooner then if left unthinned. (Biological Evaluation for Terrestrial Wildlife pp. 1-5)</i>
Water Quality (Surface and Ground)	<i>Affected</i>	<i>Yes</i>	Effects to Water Quality are described in EA section 2.4.3 <i>(Middle Fall Creek Hydrology Report pp.1-11) (Cumulative Effects Analysis for Fall Creek and Coleman Creek Catchments pp.1-5)</i>
Wetlands/Riparian Zones	Riparian Affected <i>Wetlands not present</i>	<i>Yes</i>	Effects to Riparian Zones (including structural diversity) are described in EA section 2.4.5 <i>(Middle Fall Creek Timber Sale Proposal Riparian Reserves report, pp. 1-11)</i>
<i>Wild and Scenic Rivers</i>	<i>Not Present</i>	<i>No</i>	
<i>Wilderness</i>	<i>Not Present</i>	<i>No</i>	
<i>Coastal zone</i>	<i>Not Affected</i>	<i>No</i>	
Fire Hazard/Risk	Affected	No	Effects to Fire Hazard/Risk are described in EA section 2.4.9 <i>(Middle Fall Creek Thinning Timber Sale Proposal Fuels/Soils Report pp. 1-12)</i>
Fish Species with Bureau Status (except T/E) and Essential Fish Habitat	Affected	No	Effects to Fish Species with Bureau Status and Essential Fish Habitat are described in EA section 2.4.4
<i>Land Uses (right-of-ways, permits, etc)</i>	<i>Not Present</i>	<i>No</i>	
<i>Late Successional and Old Growth Species Habitat</i>	<i>Not Present</i>	<i>No</i>	
<i>Mineral Resources</i>	<i>Not Present</i>	<i>No</i>	
Recreation	Affected	No	Effects to Recreation are described in EA section 2.4.10 (Middle Fall Creek Visual, Recreation and Rural Interface Input pp.1-5)
<i>Rural Interface Areas</i>	<i>Not Present</i>	<i>No</i>	
Soils	Affected	No	Effects to Soils are described in EA section 2.4.2 (Middle Fall Creek Thinning Timber Sale Proposal Fuels/Soils Report pp. 1-12)
<i>Special Areas outside ACECs (Within or Adjacent) (RMP pp. 33-35)</i>	<i>Not Present</i>	<i>No</i>	

Elements Of The Human Environment	Status: (i.e., Not Present , Not Affected, or Affected)	Does this project contribute to cumulative effects? Yes/No	Remarks If not affected, why?
Special Status and rare or uncommon(except T/E) Plant Species/Habitat	Not Affected	No	There are no “known” sites of any special status fungi, vascular plants, lichens, bryophytes, nor were any found during subsequent surveys. Several rare or uncommon fungi and one vascular plant species sites would be protected. (Marys Peak Resource Area Botanical Report pp.1-6)
Special Status (except T/E) Wildlife Species/Habitat	Not Present	No	(Biological Evaluation for Terrestrial Wildlife pp. 1-5)
Visual Resources	Affected	No	Effects to Visual Resources are described in EA section 2.4.11 There is no cumulative effect on Visuals or Recreation. The proposed action of thinning would not measurably alter the landscape. (Middle Fall Creek Visual, Recreation and Rural Interface Input pp.1-5)
Water Resources – Other (303d listed streams, DEQ 319 assessment, Downstream Beneficial Uses; water quantity, Key watershed, municipal watershed)	Affected	No	Effects to Aquatic Conservation Strategy Objectives are described in EA section 2.4.12, and Appendix 1. Because impacts to water quality are likely to be not measurable they are not likely to affect listed streams downstream or beneficial uses. The project is not located in a key watershed or a municipal watershed. (Middle Fall Creek Hydrology Environmental Assessment pp.1-11)
Wildlife Structural Components (Snags/CWD/Wolf trees)	Affected	No	Effects to wildlife structural components are described in EA section 2.4.7. (Biological Evaluation for Terrestrial Wildlife pp. 1-5)

2.4 Affected Environment and Environmental Effects

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

2.4.1 General Setting/ Affected Environment

The project area was clear-cut (tractor) logged in the 1950’s and 1960’s, making the current stands approximately 40 to 55 years old. The current over-story throughout the area is dominated by Douglas-fir and western hemlock with scattered hardwoods and approximately 14 snags per acre. Large coarse woody debris is present in decay classes 4 and 5. The area is bordered on the west; north and east by BLM administered lands. The land on the east has been recently (2002, 2003) commercially thinned and the area to the west and north consists of stands much like that of the proposed project area. The private land to the south consists of mature forest stands.

Riparian Reserve Habitat: Riparian Reserves within the project area are associated with mid-seral conifer timber types. These stands originated from the logging operations that occurred during the 1950's and 1960's. Average tree size is approximately 10 inches in diameter and there are an inadequate number of snags.

Aquatic Environment: The Middle Fall Creek Thinning project area contains headwater tributaries to Fall Creek, Middle Fork Fall Creek, Coleman Creek, and a south fork of Coleman Creek, which flow directly into the South Fork Alsea River. These streams contain high loads of sediment and coarse woody debris (CWD) from hill slope raveling (colluvium) and previous land management activities. Streamside shading from riparian vegetation is adequate to buffer streams from summer temperature increases and all channels viewed in the field appear in "Proper Functioning Condition".

Fall Creek and Coleman Creek have small step pool/pool riffle habitat types that are dominated by cobble and gravel. Both of these streams lack large amounts of large woody debris and complex habitat types. Middle Fall Creek is a smaller stream that has a lower gradient and is dominated by silt/ sand and gravel. Middle Fall Creek has numerous pieces of old large wood that are buried and interact with the stream channel. All of these streams support resident cutthroat trout (*Oncorhynchus clarkia*) and sculpin (*Cottus sp.*). Coastal Coho salmon (*Oncorhynchus kisutch*) are down stream from the project area approximately one mile at Alsea Falls, a natural fish barrier.

In addition:

- BLM administered lands comprise approximately 52 % of the Upper Alsea watershed.
- The project is not within a municipal or key watershed.
- Slopes present within the proposed harvest area range from 5 to 80 percent and soils are stable. A very small portion of the area has 80 percent slopes. Some residual compaction from old skid trails exists within the area.
- Current fuel loading present in the project area varies from 10 to 30 tons per acre.
- Recreational activities which may occur here include hunting, target shooting, hiking and mountain bike riding. A hiking/biking trail system open to hikers and bikers to the south of Alsea Falls Recreation Site has undergone two recent commercial thinning activities (2002, 2003) much like the proposed action.

2.4.2 Soils

(Middle Fall Creek Thinning Timber Sale Proposal Fuels/Soils Report pp. 1-12)

Environmental Effects

2.4.2.1 Alternative 1 (Proposed Action):

New construction of spur roads would result in approximately 1.4 acres of forest land being converted to non-forest (about 0.6% of the total project area), however following logging, 270 feet of new road would be ripped. The remaining new construction would be blocked. Renovating 6000 feet of existing road would result in approximately 2.8 acres of current non-forest land to remain in a non-forested condition. Several cross drains, stream crossings (culverts) and one failed log-stringer bridge would be added, improved or replaced.

This would improve the condition of the site to withstand future high water events. These improvements would provide better drainage and road surface conditions resulting in less road surface erosion into streams and a lowered risk of culvert or fill failures. The improvement work is expected to result in some minor short term roadside ditch erosion where established vegetation in the ditch and culvert catchment areas is removed during the cleaning and reshaping or culvert installment operations. Vegetation generally re-establishes within one-two seasons and erosion rates return to very low levels thereafter. The addition of extra cross drain culverts would reduce the volume of water flowing in the ditches and should reduce the potential for future erosion.

Skyline and harvester/forwarder yarding is expected to result in minimal or no measurable reduction in long term site productivity. Landing construction and tractor yarding is expected to reduce long term site productivity by a maximum of 0.2 % for the total project area (10% reduction for the approximate 5.25 acres impacted).

2.4.2.2 *Alternative 2:*

Effects from road work on soil resources would be the same as for proposed action except that the amount of new construction would be less. Constructing 2140 feet of new spur roads would result in loss of top soil and compaction of sub-soil on approximately 0.9 acres (about 0.4% of the total project area).

Effects from skidding and yarding would be the same as for the proposed action with the following adjustments for skyline yarding: about 3% of the skyline area would be affected by yarding roads or approximately 5.7 acres, as a percentage of the total project area approximately 2.7. Skyline landings alone amount to 0.8 acres (as a percentage of the total project area less than 0.4). The affect on overall site productivity from light compaction by skyline yarding systems on less than 2.7% of the total area is expected to be low (probably no measurable reduction in overall yield for the project area).

If yarding is done using crawler tractors for the entire ground based area (25 acs), the percentage of total tractor unit area impacted by surface disturbance and soil compaction as a result of: landings would be approximately 0.3% (approximately 0.1 acre); from tractor yarding roads approximately 6%-9% (approximately 1.5 – 2.25 acre) percent of total project area affected: approximately 0.7% - 1.0 %. For tractor yarding plus all landings the expected reduction in productivity for the 3.15 acres of landings and yarding roads is a 10% reduction in yield. The affect on overall project site productivity resulting from the impacted 3.15 acres is expected to be less than 0.14% reduction in overall yield for the 215 acre project area.

If a harvester/forwarder system is used for the entire ground based area (25 acres), the percentage of total ground based unit area impacted by surface disturbance and soil compaction as a result of: landings would be approximately 0.3 % (approximately 0.1 acre); from harvester/forwarder roads approximately 2%-5% (approximately 0.5 – 1.25 acre); percent of total project area affected: approximately 0.2% - 0.6%.

For harvester/forwarder systems: The effect on overall site productivity from light to moderate compaction on less than 0.6% of the total area is expected to be low (no measurable reduction in overall yield for the project area).

2.4.2.3 No Action Alternative:

Everything would remain in its current state. Existing road conditions would continue to deteriorate possibly leading to future fill failures.

2.4.3 Water

(Middle Fall Creek Hydrology Report pp.1-11) (Cumulative Effects Analysis for Fall Creek and Coleman Creek Catchments pp.1-5)

Environmental Effects

2.4.3.1 Alternative 1 (Proposed Action):

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

Tree removal and road renovation and construction would not occur on steep, unstable slopes where the potential for mass wasting adjacent to stream reaches is high. Therefore, increases in sediment delivery to streams due to mass wasting are unlikely to result from this action. In addition, potential impacts resulting from tree harvest and road construction/renovation would be mitigated to reduce the potential for measurable sediment delivery to streams, by implementing Best Management Practices (BMPs), such as stream and road no-treatment buffers, minimum road widths, minimal excavation, ensuring appropriate drainage from road sites, seasonally restricting hauling etc. However, short-term, localized increases in stream sediment can be expected during reconstruction of stream crossings. Because the proposed project would affect only 0.4% of the forest cover in the Upper Alsea watershed, it is unlikely to produce any measurable effect on stream flows. Within riparian zones, the riparian canopy would be retained, therefore maintaining riparian microclimate conditions and protecting streams from increases in temperature.

Pile burning along roads and on landings may produce small patches of soil with altered surface properties that restrict infiltration. However, these surfaces are surrounded by large areas that would easily absorb any runoff or sediment that may reach them. Pile burning would occur away from surface water or streams.

In conclusion, this proposal is unlikely to impede and/or prevent attainment of the stream flow and basin hydrology, channel function, or water quality objectives of the Aquatic Conservation Strategy (ACS). Over the long term, this proposal should aid in meeting ACS objectives by speeding the development of older forest characteristics in Riparian Reserves.

Cumulative Effects:

The proposed project is unlikely to contribute to cumulative effects to sedimentation or increases of stream temperature, because it is unlikely to produce any measurable effects on these parameters. Because the mechanical removal of vegetation and road construction in a watershed can result in increases in storm flow volume and earlier, higher peak flows, the proposed action was analyzed for its potential cumulative affects on peak flows.

Two Level 1 analyses for potential increases to peak flows in the Fall Creek and Coleman Creek catchments (7th-field watersheds) determined the risk of increasing flows to be “low”. In general, these catchments are dominated by BLM ownership (81%), have 81% of their land within the “rain dominated precipitation zone” (less than 2000 feet), and are covered by mature forest (greater than 70% total crown closure and less than 75% of the crown in hardwoods or shrubs). Since the Middle Fall Creek thinning project would maintain crown closures of 50-60%, the proposed action would result in no additional risk of enhancing peak flow events.

BLM management actions are likely to dominate the cumulative impacts to these catchments and to the Upper Alsea River watershed during the next decade. Current and likely future management actions in the watershed include: stand density management through timber sales, road maintenance (drainage improvements, renovations, decommissioning), maintenance of recreation facilities, fish habitat restoration, and riparian treatments (see Hydrology Report p. 10).

2.4.3.2 *Alternative 2:*

Direct and indirect effects to water quality, hydrologic function and stream channel condition would not be measurably different from the proposed action. The smaller number of acres being treated would reduce any potential effects from harvesting and yarding operations. Less road construction would reduce any potential impacts from construction operations or road compaction. However, differences in impacts between the two alternatives on hydrologic resources are not likely to be considerable. Consequently, cumulative effects are not likely to be considerably different between the two alternatives.

2.4.3.3 *No Action Alternative:*

The “No Action” alternative would result in a continuation of current conditions and trends as described in the Description of the Affected Resource section of this report, the Hydrologist Report in the Middle Fall Creek NEPA File, and in the *South Fork Alsea River Watershed Analysis* document.

Cumulative effects to the watershed could result from other BLM proposed activities and limited development (primarily timber harvesting and new road construction) of private lands.

2.4.4 Fisheries/ Aquatic Habitat

(Middle Fall Creek Fisheries Report - pp. 1-4)

Environmental Effects

2.4.4.1 Alternative 1 (Proposed Action):

The proposed logging action would not adversely affect the aquatic environment, resident or anadromous fish. Skyline yarding in sloped areas with a minimum of one end suspension, the small amount and size of timber being hauled out in conjunction with stream protection zones and seasonal restrictions would keep sediment delivery to a minimal level. Remaining trees, vegetation, duff, and stream protection zones would keep the chances of mass wasting into streams low. Due to stream protection zones (50 foot minimum), remaining trees, and topographic relief, there is very little chance that these streams would increase in temperature.

Trees that remain after thinning would benefit from increased sunlight and would grow fuller crowns, allowing them to grow faster. This would increase the amount of future potential quality large diameter wood for in-stream function, complexity and riparian dependant species. Thinning within the riparian reserve also allows for a secondary canopy to establish, more species diversity, and more complex habitat within the riparian reserve to develop.

Approximately 20 skyline cable corridors would go across area streams. Mainstem Fall Creek would have up to eight corridors and Coleman Creek would have up to 12 corridors. Most corridors would not require trees to be cut, but would create a corridor through lateral cable movement (cable breaking branches). Corridors can be up to 12 feet wide, but are usually smaller. Both streams have large numbers of alders dominating the banks, and have topographic shading. Any trees that are cut for the purpose of skyline yarding cables or safety would be left onsite. Where practical, trees would be felled into area streams. These small “openings” next to area streams would not increase stream temperature due to topographic shading, large numbers of alders close to area streams, and the very small increase in direct solar radiation.

The road work that is associated with this project would have a short term impact due to increases in turbidity. This increase in turbidity would be small and would occur within Coleman Creek and Middle Fall Creek. It is unlikely to harm fish and other aquatic organisms due to most of the culverts being cross drains on intermittent streams that would be replaced when no water is running (seasonal restrictions-dry season only). Streams that are perennial would be dammed and water would be pumped around the work area until the new pipe was in place and ready for the stream to flow through the new culvert. Most culvert replacements on Coleman Creek are cross drains and would not have much impact on area fish due to limited increases in turbidity and Coleman Creek flushing itself.

Culvert replacements on Middle Fall Creek would have a more direct impact on increase in turbidity due to the amount of fill for each culvert to be replaced; however, only one culvert to be placed on Middle Fall Creek would be on a perennial reach. The increase in turbidity from this culvert would occur immediately following construction during low summer flows, and again as the channel adjusts during high winter flows. Due to the low gradient of this stream, the amount of large woody debris that is in the channel, and seasonal restrictions, the increases in turbidity that are expected from this culvert placement would be short in duration (one year or less). Turbidity would dissipate and not travel too far down stream and would not have a long term negative impact on resident fish. Fish within the vicinity of this culvert may leave the area, but most fish are downstream of this culvert during the summer due to limited flows.

2.4.4.2 Alternative 2:

This proposal would entail less road construction (1160 feet) and fewer acres (16 acres) of commercial thinning and ground based yarding within the riparian reserves. The reduction in road construction and ground based yarding would reduce the impacts from these activities.

2.4.4.3 No Action Alternative:

Current stream habitat conditions would continue. Riparian Reserves would not be thinned and trees would continue to compete for sunlight. Over time, trees would thin themselves, but remaining trees would be of smaller diameter and have smaller crowns. Trees that die and fall would be smaller diameter. Smaller diameter trees would not function on the ground and in stream as long or as well as larger diameter trees. Road drainage improvements would not occur and ditch lines that currently run directly into streams would continue to funnel road sediment into area streams.

2.4.5 Riparian

(Middle Fall Creek Riparian Reserves Report - pp. 1-11)

Environmental Effects

2.4.5.1 Alternative 1 (Proposed Action):

The proposed action would increase the amount of light penetrating the canopy. Increased light levels would promote growth and development of vegetation found at mid canopy and ground levels. In the short term, a more complex understory would develop consisting of more shrub species, which are important habitat components for aquatic insects which are a major food source for fish, amphibians and birds. Understory initiation of shade tolerant conifers associated with canopy layering would be promoted in areas of increased light over the long term. Trees would be removed in a variable spacing, providing both openings for understory tree and shrub development, and areas of higher density. This would provide habitat for a wider variety of species than a densely spaced uniform stand.

Residual trees would increase in diameter and crown depth/width. Limb diameter on large limby trees would be maintained by releasing those trees to an open grown condition. The long-term results of density management would be larger average DBH and deeper crowns at any given age, compared to the no treatment option. Average stand diameters 30 years in the future in the treated stands would be 25 to 30 percent larger than if the stands were not thinned. Average stand crown ratios, which is an indicator of wind firmness and crown depth, would average 30 percent higher.

Opening up the canopy may cause such ground level microclimatic changes as increased light levels, increased temperatures, lower humidity and increased wind speed. These effects vary depending on aspect, slope and vegetation removed and are difficult to quantify. Most of these effects adjacent to streams would be of short duration and would decrease as crowns close and brush covers the ground.

Large amounts of smaller wood would continue to fall from within the untreated stream protection zones, and larger wood would begin to be recruited from higher up the slopes as the treated stands reach heights of 200 feet. Thus, wood with a larger range of sizes would potentially be recruited into streams over the long term. Stream shading would not be affected by the proposed treatments. Stream protection zone widths average 60 feet wide, with some areas up to 100 feet in width and none less than 50 feet. In addition, topographic shading occurs on many of the small streams where the draws have steep side slopes.

There would be a short term elevated risk of blow down which would be minimized by selecting leave trees with good crowns and grouping them where possible.

Cumulative Effects: There would be no cumulative effects to the vegetation in the Riparian Reserves, as the effects from the project would be local, and there would be no other uses affecting this resource.

2.4.5.2 Alternative 2:

Approximately 12 fewer acres of Riparian Reserves would be treated. Environmental effects for the remaining 111 acres would be the same as for the proposed action.

2.4.5.3 No Action Alternative:

There would be no disturbance and consequently no microclimate changes in the Riparian Reserves.

2.4.6 Vegetation

(Middle Fall Creek Thinning Silvicultural Prescription pp.1-8 and Middle Fall Creek Botany Report pp.1-6)

Environmental Effects

2.4.6.1 Alternative 1 (Proposed Action):

The growth rate of the leave trees would accelerate compared to untreated trees. The leave trees would maintain larger crowns than would ones in an un-thinned stand. Diameter growth would increase on leave trees when suppressed trees are removed and light is available in the lower crown. Increased light would also increase the low brush growth. There would be less tree mortality and generally a healthier stand.

Stand species diversity would be increased. The present single story Douglas-fir stand would gain a diverse young stand component with a potential of developing a middle story component over time. The proposed action would decrease the existing coniferous canopy cover through thinning. The decrease in the canopy cover would allow for an increased amount of sunlight to reach the understory species and forest floor species (shrubs, forbs, ferns and grasses). The increase in sunlight may allow these species to increase in density. Many open slash covered areas could become dominated by shrub and/or fern species. All existing vegetation in the forested areas where roads are to be constructed would be scraped to mineral soil and a road constructed. Timber falling and yarding operations would also disrupt areas of duff and expose mineral soil, especially in yarding corridors. Non-native species may become established in any exposed mineral soil areas. These non-native species often persist for several years but soon decline as native vegetation increases within the thinned areas.

Any ground disturbing activity may lead to an increase in the noxious weeds known from the project area. Known species from the area are priority III noxious weeds and are well established and widespread throughout the Marys Peak Resource Area, Salem District BLM and Western Oregon. Eradication is not practical using any proposed treatment methods. Grass seeding exposed soil areas tends to abate the establishment of noxious weeds. With the implementation of this design feature, effects from noxious weeds are not anticipated. The risk rating for the long-term establishment of noxious weed species and adverse effects on this project area is low.

This project would not directly affect any T&E or Bureau special status vascular plant, lichen, bryophyte or fungi species since there are no known sites within the project area or adjacent to the project. Several rare or uncommon fungi and one vascular plant species sites would be protected within the Botanical Protection Areas.

2.4.6.2 Alternative 2:

Approximately 4 fewer acres of GFMA and 12 fewer acres of Riparian Reserve would be treated. Environmental effects for the remaining 111 acres of Riparian Reserve and 102 acres of GFMA would be the same as for the proposed action.

2.4.6.3 No Action Alternative:

Growth model runs indicate individual tree growth would be slower and more mortality would occur in the No Action Alternative compared to the Proposed Action and/or Alternative 2, resulting in slower attainment of desired tree density and stand composition for General Forest Management objectives. The moderate ground cover and single canopy conditions would remain until the stand begins to self thin as the canopy closes over time, creating small diameter CWD in the short term, and openings in the canopy. Self-thinning would increase the light level in the stand thus increasing ground and shrub growth, but at a later date. The stand would have less vertical structure and poor height to diameter ratio (overcrowded trees tend to develop a condition of small diameter relative to height which makes them prone to wind throw) than the managed stand due to the past crowded stand conditions. The residual trees with reduced crowns size would not be as vigorous as the managed stand.

Without any human caused disturbances in the proposed project area the established noxious weed populations would remain at their current level.

2.4.7 Wildlife

(Biological Evaluation for Terrestrial Wildlife (pp. 1-5):

Environmental Effects

2.4.7.1 Alternative 1 (Proposed Action):

The proposed thinning harvest of about 229 acres would change the existing forest structure and alter the development of future forest stand conditions. The direct and indirect changes anticipated to occur to forest habitat characteristics from this project are:

short-term (less than 10 years)

- light to moderate reduction of canopy closure (resulting canopy greater than 40%) over entire treatment area which represents less than 1% of the mid-seral forests within the watershed;
- minor reduction and disturbance to existing CWD material (snags and down logs) resulting from felling, yarding and road construction;
- reduced recruitment rate of CWD on GFMA allocation, and immediate creation of new hard CWD of desirable size and quality in Riparian Reserve allocation;
- retention and enhancement of hardwood tree and shrub diversity.

long-term (greater than 10 years)

- transition in structural characteristics of the treated stand to more closely resemble late-seral forest habitat (larger diameter trees, sub-canopy development, greater tree species diversity, greater size of hard CWD), especially within Riparian Reserve allocation;
- extended persistence of hardwood tree and shrub cover diversity;
- eventual regeneration harvest of some portion of the GFMA allocation is likely.

The proposed action is considered a “may affect” to spotted owl critical habitat, because it would modify a very small percentage of the available dispersal habitat within critical habitat unit (OR-48). The short-term reduction in canopy closure may slightly diminish the quality of dispersal habitat for owls, but since the entire project area would average more than 40% canopy closure, the treated stands are anticipated to continue to function as dispersal habitat for spotted owls in the short-term and would likely achieve suitable habitat quality for spotted owls in the long-term at a faster rate than if left untreated. This project would not contribute to the need to list any special status species. Site specific concerns for all wildlife species, and in particular the northern spotted owl, have been adequately addressed and mitigated by design features incorporated within the proposed project.

Cumulative Effects: Within the South Fork Alsea Watershed, BLM has commercially thinned about 1200 acres of mid-seral forest stands within the past 10 years (about 10% of mid-seral forest stands on BLM administered lands in the watershed). Due to ecological succession and forest management (mostly private land harvests), the amount of habitat in each seral stage within this watershed is not stagnant, but constantly in transition from early open habitats toward mature forest stands. Ecological succession would move about 29% of this mid-seral habitat toward late-seral forest conditions over the next 20 years.

Clear-cut harvests on private lands could remove as much as 45% of this mid-seral habitat type in the next 20 years. In the near future, BLM may evaluate the commercial thinning of about 1300 acres of early to mid-seral forests within this watershed. While thinning harvests would alter forest structure, such treatments do not result in loss of habitat for most of the wildlife species that are known or suspected to use these forests. Treated stands are still anticipated to function as dispersal habitat for spotted owls after treatment. The cumulative impact on habitat availability for wildlife species of concern as a result of current and foreseeable thinning treatments is considered minor.

2.4.7.2 Alternative 2:

About 213 acres would be thinned, and less road construction would occur. At the watershed scale (82,000 acres), the difference between the proposed action and Alternative 2 is negligible. The area deferred from thinning treatment in this alternative is primarily Riparian Reserve. This alternative is anticipated to have essentially identical effects to wildlife species and their habitat as the proposed action.

2.4.7.3 No Action Alternative:

This alternative would result in no change to the affected environment. Short-term impacts to wildlife species and habitats as described in the proposed action would be avoided. However, immediate enhancements to forest structure would not be achieved.

2.4.8 Air Quality

(Middle Fall Creek Thinning Timber Sale Proposal Fuels/Soils Report pp. 8)

Environmental Effects

2.4.8.1 Alternative 1 (Proposed Action):

Pile burning would take place in the Fall under good atmospheric mixing conditions when the threat of impacting air quality in designated areas would be very low. Fuels would be piled and mostly dry which would improve combustion and reduce smoke. Any residual smoke should be of short duration and occur during a period of the year when there is less outdoor activity. During this time of the year, good mixing conditions and an increasing likelihood of rain storms would scour the air shed and extinguish residual fire fairly quickly.

Cumulative Effects: Cumulative effects from burning on air quality would be negligible considering the minimal amount of burning that occurs on public and private land.

2.4.8.2 Alternative 2:

Effects would be the same as for the proposed action with a slight reduction in tons of piled slash to be burned along bike trails, new road construction and existing roads.

2.4.8.3 No Action Alternative:

The current state of air quality conditions in the project area would continue. Current air quality is weather dependent and this area is not in a stagnant airshed.

2.4.9 Fire Hazard/Risk

(Middle Fall Creek Thinning Timber Sale Proposal Fuels/Soils Report pp. 1-9)

Environmental Effects

2.4.9.1 Alternative 1 (Proposed Action):

Vegetation cleared for new road construction would result in creation of approximately 50 tons of slash that would be scattered and / or piled along the right-of-way (R-of-W). Most of this material would end up being piled and burned following harvest operations while some material would remain scattered in the areas adjacent to the R-of-W.

This would increase risk for a fire start along the R-of-W while the roads are in use, but following completion of logging all concentrations and piles would be covered and later burned. After the project has been completed and the piles burned, the change in fire risk from the road construction debris would be negligible.

Renovation and reconstruction would result in very small amounts of slash created along the roads. This slash would be scattered in the areas adjacent to the roads being worked on and should create little additional fire risk. If any concentrations of slash are created, the operator would be instructed to pile and cover the slash or haul it to a suitable area where it can be burned.

Following completion of logging all concentrations of fuels in the 6" and smaller diameter sizes within 20' of the trails would be piled and covered with plastic. The piled slash along the bike trails would amount to approximately 45-50 tons that would be burned in the fall. After the piles are burned, the change in fire risk along the trails would be low enough to allow public entry.

The increase in slash created by the proposed thinning would result in a higher risk of fire on the thinned sites following logging. The dead fuel loading is expected to be increased by 5 to 15 tons per acre with a discontinuous arrangement. Total dead fuel loadings would range from approximately 15 to 35 tons per acre. Overall, the risk of fire following this action would be moderate due to several factors:

- Access to most of the site is controlled by gated roads that are kept closed.
- The new construction would be blocked to vehicle access.
- The continued existence of a tree canopy shading the fuels would maintain cooler temperatures and higher humidity on the site.

Risk of fire would be greatest during the period when attached needles dry out the first season following cutting. Fire risk would continue to diminish as the area "greens up" with understory vegetation, and the fine twigs and branches in the slash begin to break down. Burning of landing piles and slash concentrations along roads would substantially reduce risk of a fire start from human ignition sources.

2.4.9.2 Alternative 2:

Effects would be the same as for the proposed action with a slight reduction in tons of piled slash along the bike trails to about 40 tons, and a reduction in vegetation cleared for new road construction, to approximately 30-35 tons of slash.

2.4.9.3 No Action Alternative:

With no treatment fire hazard/fuels would be left in their current state.

2.4.10 Recreation

(Middle Fall Creek Visual, Recreation and Rural Interface Input pp.1-5)

Environmental Effects

2.4.10.1 Alternative 1 (Proposed Action):

To the casual observer, this thinning would look the same as the surrounding forests thinned within the past few years. Trails would look thinned giving trail users the same scenery on all trails except trail 1. There is a potential to affect mountain bike riders to a greater extent since they can travel a longer distance in far less time it takes a hiker. A forest setting would still be maintained, and vegetation disturbed by logging activities would be expected to return within five years. The thinning of the unit would open up the stand, which may make it easier to walk through the units and provide forage for big game animals. Slash in the areas along the bike trails would prevent use of the trails until the project is completed and the trails reopened for public use. Any recreational use in the proposed units would be restricted during thinning operations. Recreational use of the units behind gates is expected to increase over time. Closed gates and barriers would continue to limit vehicle passage to portions of the trail system.

Cumulative Effects: Two recent thinning sales have occurred in sections adjacent to this thinning sale. The end result of this thinning would look much like the previous thinning sales, giving the casual observer a uniform forest. This landscape has and would continually be altered by the BLM and private companies. Clear cutting changes the view more than a thinning. Recreation visitors want a variety of scenery. As with any timber management activity, off-highway vehicle use is an issue and should be curtailed with the proposed design features in this EA.

2.4.10.2 Alternative 2:

In addition to the proposed action's environmental effects, visitors would be somewhat shielded from trail side forest disturbance. Visual impact to hikers and bikers who use the trails would be less because of the buffering effect of the deferred recreation management area. Similarly, road 14-7-36 would have a buffer from the same activities including the restriction of landings between milepost 1.56 and 1.69. This alternative provides more visual buffers than Alternative 1. The recreation buffer on trail 3 would protect trail users' viewshed down slope by limiting the distance the thinning operation is in site. Similarly, road 14-7-36 would have a buffer from the harvest activities including the elimination of landings between milepost 1.56 and 1.69. On trails 2 and 4 thinning practices would occur.

2.4.10.3 No Action Alternative:

With the exception of unexpected changes (i.e. wildfire or disease), the project area would continue to provide a forest setting for dispersed recreational activities and the Alsea Falls trail system. A short-term increase in log truck traffic, noise and other inconveniences related to the harvest of the unit would not occur. However, these inconveniences from other lands in the vicinity would most likely continue.

2.4.11 Visual Quality

Environmental Effects

2.4.11.1 Alternative 1 (Proposed Action):

The project area is classified as VRM class IV. Changes to the landscape character are expected to be low and would comply with Class IV guidelines. Most of the disturbance would be associated with modifications to vegetation. The proposed thinning would maintain some canopy cover. There would also be some short-term (days) decline in visual quality as a result of the smoke created if debris piles are burned.

Cumulative Effects: There is no cumulative effect on Visuals. The proposed action of thinning and road construction would not considerably alter the landscape.

2.4.11.2 Alternative 2:

Visitors would be somewhat shielded from thinning practices (see Recreation, Alternative 2 above).

2.4.11.3 No Action Alternative:

With the exception of unplanned changes (i.e. wildfire, disease etc.), no modifications to the landscape character of the project area would be expected to occur. Modifications to the landscape character in the general area around the unit would still be expected, as a result of harvesting activities on other lands.

2.4.12 Comparison of Alternatives

2.4.12.1 By Affected Resource

Table 3: Comparison of Alternatives by Affected Resource

Affected Resource	No Action	Alternative 1 (Proposed Action)	Alternative 2
Soils	Existing road conditions would continue to deteriorate possibly leading to new fill failures in the future.	Road crossing improvements would improve the condition of the site to withstand future high water events. These improvements would provide better drainage and road surface conditions resulting in less road surface erosion into streams and a lowered risk of culvert or fill failures. New construction would result in forest land being converted to non-forest (0.6% of the total project area). Landing construction and tractor yarding would reduce long term site productivity by 0.2% for the total project area.	Same effects from proposed action except the amount of new road construction would be less. Effect on overall site productivity would be 0.14% reduction in overall yield for the 213 acre project area.
Water	Continuation of current conditions and trends. Roads would continue to add sediment into project area streams.	Unlikely to impede stream flow and basin hydrology, channel function, or water quality. Short-term, localized increases in stream sediment can be expected during reconstruction of stream crossings.	Not be measurably different from the proposed action, with a reduction in short-term sedimentation from reduced road construction and harvest acres.

Affected Resource	No Action	Alternative 1 (Proposed Action)	Alternative 2
Fish/Aquatic	Road drainage improvements would not occur and ditch lines that currently run directly into streams would continue to funnel road sediment into area streams.	Logging action would not adversely affect the aquatic environment, resident or anadromous fish. Road work would have a short term impact due to increases in turbidity.	Same impact as the proposed action, except reduced impacts from road construction and ground based yarding.
Riparian	There would be no disturbance and consequently no microclimate changes in the Riparian Reserves.	Opening up the canopy may cause such ground level microclimatic changes as increased light levels, increased temperatures, lower humidity and increased wind speed. These effects vary depending on aspect, slope and vegetation removed and are difficult to quantify. Most of these effects adjacent to streams would be of short duration and would decrease as crowns close and brush covers the ground.	Approximately 12 fewer acres of Riparian Reserves would be treated. Environmental effects for the remaining 111 acres would be the same as for the proposed action.
Vegetation	Individual tree growth would be slower and more mortality would occur. Moderate ground cover and single canopy conditions would remain until the stand begins to self thin, creating small diameter CWD in the short term. Residual trees with reduced crowns size would not be as vigorous as the managed stand.	Growth rate of leave trees would accelerate. Increased low brush growth. Less tree mortality and a healthier stand. The present single story Douglas-fir stand would gain a diverse young stand component with a potential of developing a middle story component over time. Stand species diversity would be increased.	Essentially the same as Alternative 1 except 16 fewer acres would be treated.
Wildlife	Short-term impacts to wildlife species and habitats as described in the proposed action would be avoided. However, immediate enhancements to forest structure would not be achieved.	Light to moderate reduction of canopy closure. Minor reduction and disturbance to existing CWD material. Reduced recruitment rate of CWD on GFMA and immediate creation of new hard CWD of desirable size and quality in Riparian Reserve. Retention and enhancement of hardwood tree and shrub diversity.	Anticipated to have essentially identical effects to wildlife species and their habitat as the proposed action.

Affected Resource	No Action	Alternative 1 (Proposed Action)	Alternative 2
Recreation/ Visual Quality	Continue to provide a forest setting for dispersed recreational activities.	To the casual observer a forest setting would still be maintained, and vegetation disturbed by logging activities would be expected to return within ten years.	Visual impacts to trail users would be less than Alternative 1 because of deferred recreation management area buffers. Approximately 2,000 feet of existing trail (Trail #3) would not be disturbed. The recreation buffer on trail 3 would protect trail users' viewshed down slope by limiting the distance the thinning operation is in site.

2.4.12.2 With Regard to the Purpose and Need

Table 4: Comparison of Alternative by Purpose and Need

Purpose and Need	No Action	Alternative 1 (Proposed Action)	Alternative 2
Contribute to District timber management goals and local economic diversity.	No timber harvest would occur.	Density management on approximately 229 acres of 40-55 year old stand within matrix (GFMA) and riparian reserves.	Density management on approximately 213 acres of a 40-55 year old stand within matrix (GFMA) and riparian reserves.
Manage timber stands on Matrix lands for a sustainable supply of timber and other forest commodities for future harvest and other management options.	No timber management would occur.	Approximately 1,500 MBF of timber harvest would occur from 106 acres of Matrix land.	Approximately 1,400 MBF of timber harvest would occur from 102 acres of Matrix land.
Manage the roads in the area to meet transportation needs and ACS objectives	Existing road conditions would continue to deteriorate possibly leading to future fill failures.	Proposed road improvements would provide better drainage and road surface conditions resulting in less road surface erosion into streams and a lowered risk of culvert or fill failures.	Generally same as Alternative 1 except approximately 1160 feet of new road construction would not occur.
Increase the structural diversity of forest stands in portions of the Riparian Reserve to meet ACS habitat objectives	No action would result in continued even aged homogenous stands in the Riparian Reserves.	A more complex understory would develop consisting of more shrub species. Understory initiation of shade tolerant conifers associated with canopy layering would be promoted in areas of increased light over the long term.	Approximately 12 fewer acres of Riparian Reserves would be treated.

Purpose and Need	No Action	Alternative 1 (Proposed Action)	Alternative 2
Increase amount of large down wood and snags and increase diameter growth	Smaller diameter trees that die and fall would not function as well as larger diameter trees.	By density management to achieve future potential coarse woody debris and instream large wood sources, structural characteristics of the treated stand would more closely resemble late-seral forest habitat. The amount of future potential quality large diameter wood for in-stream function would increase.	Approximately 12 fewer acres of Riparian Reserves would be treated.
Manage recreation opportunities within the adjacent Alsea Falls Recreation Area by retaining existing hiking/biking trails.	Continue to provide a forest setting for dispersed recreational activities.	Approximately 1,160 feet of existing trail would be obliterated. Approximately 21 acres of area identified in need of visual buffer would be disturbed (felling and yarding).	Approximately 1,160 feet of existing trail would not be disturbed. Logging debris would be cleared from approximately 3,000 feet of existing trail by hand. Approximately 21 acres of area identified in need of density management would be deferred. Harvest operations (landings) would not be allowed along a portion of Rd. 14-7-36 (milepost 1.56 to milepost 1.69).

2.4.12.3 Comparing Alternatives 1 and 2

Table 5 shows the differences between Alternatives 1 and 2.

Selected Parameters	Alternative 1	Alternative 2
Road Construction (feet)	3,300	2,140
Skyline Acres	176	188
Ground Based Acres	53	25
Total Number of Acres	229	213

3.0 PROJECT 2 (FUTURE MONITORING/POTENTIAL CREATION OF COARSE WOODY DEBRIS)

3.1 Purpose of and Need for Action

The project area is currently lacking coarse woody debris and snags, particularly in decay class 1 and 2 (approximately 7 snags/acre and 100 cubic feet respectively). The purpose of this project is to increase coarse woody debris and snags, providing habitat for amphibians, small mammals and invertebrates.

3.2 Alternatives

3.2.1 Alternative Development

No unresolved conflicts concerning alternative uses of available resources (section 102(2) (E) of NEPA) were identified. No alternatives were identified that would meet the purpose and need of the project and have meaningful differences in environmental effects from the proposed action. Therefore, this EA will analyze the effects of the “proposed action” and the “no action alternative”.

3.2.2 Proposed Action

Within 3 to 5 years after completion of project 1, monitoring of harvest and natural mortality recruitment (as a result from project 1) would determine if 1 to 3 trees per acre are functioning as hard snags/logs within the Riparian Reserve. If monitoring determines there is less than the target level of hard snags/logs per acre, then 1 to 3 trees per acre (within the Riparian Reserve of the treatment areas of Project 1) having a greater than average stand diameter (post treatment) would be girdled, topped, or felled to achieve the target. Such treatments would be contingent on available funding and would be accomplished within 3 to 5 years after completion of Project 1.

3.2.3 No Action Alternative

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

3.3 Identification of Affected Elements of the Environment

Table 6: Identification of Affected Elements of the Environment

Critical Elements of the Human Environment (BLM H-1790-1, Appendix 5) are in *italics*. Affected elements are **bold**. All entries apply to the proposed action, unless otherwise noted.

PROJECT 2- Future Monitoring/Potential Creation of Coarse Woody Debris			
Elements Of The Human Environment	Status: (i.e., Not Present , Not Affected, or Affected)	Does this project contribute to cumulative effects?	Remarks If not affected, why?
<i>Adverse Impacts on the National Energy Policy</i>	<i>Not Affected</i>	<i>No</i>	<i>There are no known energy resources located in the project area. The proposed action would have no effect on energy development, production, supply and/or distribution.</i>
<i>Air Quality</i>	<i>Not Affected</i>	<i>No</i>	<i>No burning would occur</i>
<i>Areas of Critical Environmental Concern</i>	<i>Not Present</i>	<i>No</i>	

PROJECT 2- Future Monitoring/Potential Creation of Coarse Woody Debris			
Elements Of The Human Environment	Status: (i.e., Not Present , Not Affected, or Affected)	Does this project contribute to cumulative effects?	Remarks If not affected, why?
<i>Cultural Resources</i>	<i>Not Affected</i>	<i>No</i>	<i>No pre-project surveys required as outlined in the Protocol for Managing Cultural Resources on Land Administered by the Bureau of Land Management in Oregon: (Cultural Resource/ Archeological Report pp.1) (Cultural Resource/ Archeological Report pp.1)</i>
<i>Environmental Justice (Executive Order 12898)</i>	<i>Not Affected</i>	<i>No</i>	<i>The proposed action is not anticipated to have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.</i>
<i>Prime or Unique Farm Lands</i>	<i>Not Present</i>	<i>No</i>	
<i>Flood Plains</i>	<i>Not Affected</i>	<i>No</i>	<i>The proposed action does not involve occupancy and modification of floodplains, and would not increase the risk of flood loss.</i>
<i>Hazardous or Solid Wastes</i>	<i>Not Present</i>	<i>No</i>	
<i>Invasive, Nonnative Species (plants) (Executive Order 13112)</i>	<i>Not Affected</i>	<i>No</i>	<i>(Marys Peak Resource Area Botanical Report pp.1-6)</i>
<i>Native American Religious Concerns</i>	<i>Not Affected</i>	<i>No</i>	<i>No Native American religious concerns were identified during the public scoping period.</i>
<i>Threatened or Endangered (T/E) Fish Species or Habitat</i>	<i>Affected</i>	<i>No</i>	<i>Coastal Coho salmon are down stream approximately one mile from the project area. (Middle Fall Timber Sale Fish Input pp. 1-4)</i>
<i>Threatened or Endangered (T/E) Plant Species or Habitat</i>	<i>Not Present</i>	<i>No</i>	<i>(Marys Peak Resource Area Botanical Report pp. 1-6)</i>
<i>Threatened or Endangered (T/E) Wildlife Species or Habitat</i>	<i>Northern Spotted Owl – Not Affected Marbled Murrelet – Not Affected</i>	<i>No</i>	<i>This project would have a negligible effect on canopy closure of the treatment area, while enhancing habitat conditions in the short-term and long-term for wildlife species that are associated with coarse woody debris. Short-term impacts to wildlife species are considered negligible. (Biological Evaluation for Terrestrial Wildlife pp. 1-5)</i>
<i>Water Quality (Surface and Ground)</i>	<i>Not Affected</i>	<i>No</i>	<i>The girdling and/or topping of trees for snags and felling of trees for increased coarse woody debris are unlikely to have any measurable impact on water resources. Any disturbance to soil would be localized (outside of the stream protection zones) and unlikely to affect stream sedimentation, turbidity, temperature, or channel function. Because of the small amount of canopy and ground cover affected, this project would be unlikely to contribute to cumulative effects in the watershed. (Middle Fall Creek Hydrology Report pp.1-11) (Cumulative Effects Analysis for Fall Creek and Coleman Creek Catchment pp.1-5)</i>
<i>Wetlands/Riparian Zones</i>	<i>Riparian Affected Wetlands not present</i>	<i>No</i>	<i>Effects to Riparian Zones (including structural diversity) are described in EA section 3.4.3 (Middle Fall Creek Timber Sale Proposal Riparian Reserves report, pp. 1-5)</i>
<i>Wild and Scenic Rivers</i>	<i>Not Present</i>	<i>No</i>	
<i>Wilderness</i>	<i>Not Present</i>	<i>No</i>	

PROJECT 2- Future Monitoring/Potential Creation of Coarse Woody Debris			
Elements Of The Human Environment	Status: (i.e., Not Present , Not Affected, or Affected)	Does this project contribute to cumulative effects?	Remarks If not affected, why?
Coastal zone	Not Affected	No	
Fire Hazard/Risk	Affected	No	Effects to Fire Hazard/Risk are described in EA section 3.4.4. (Middle Fall Creek Thinning Timber Sale Proposal Fuels/Soils Report pp. 1-12)
Fish Species with Bureau Status (except T/E) and Essential Fish Habitat	Affected	No	Effects to Fish Species with Bureau Status and Essential Fish Habitat are described in EA section 3.4.1.
Land Uses (right-of-ways, permits, etc)	Not present	No	
Late Successional and Old Growth Species Habitat	Not Present	No	
Mineral Resources	Not Present	No	
Recreation	Not Affected	No	Minimal amount of girdling and falling of trees would not occur adjacent to hiking/biking trails.
Rural Interface Areas	Not Present	No	
Soils (productivity, erodibility, mass wasting, etc.)	Not Affected	No	
Special Areas outside ACECs (Within or Adjacent) (RMP pp. 33-35)	Not Present	No	
Special Status and rare or uncommon (except T/E) Plant Species/Habitat	Not Affected	No	Based on survey results: There are no "known" sites of any special status fungi, vascular plants, lichens, bryophytes, nor were any found during subsequent surveys. No trees would be felled or girdled in the botanical reserve areas. (Marys Peak Resource Area Botanical Report pp.1-6)
Special Status (except T/E) Wildlife Species/Habitat	Not Present	No	Wildlife Report (pp. 1-5)
Visual Resources	Not Affected	No	The proposed action of girdling and falling of 1 to 3 trees within 123 acres would not considerably alter the landscape.
Water Resources – Other (303d listed streams, DEQ 319 assessment, Downstream Beneficial Uses; water quantity, Key watershed, municipal watershed)	Not Affected	No	Because impacts to water quality and quantity are not likely to be measurable they are not likely to affect listed streams downstream. BMP's would be implemented to protect beneficial uses of project area streamflow. The project is not located in a Key Watershed. The closest domestic water user is located approx. 9 miles downstream of the project area. (Middle Fall Creek Hydrology Environmental Assessment pp.1-11)
Wildlife Structural Components (Snags/CWD/Wolf trees)	Affected	No	(Biological Evaluation for Terrestrial Wildlife pp. 1-5) Effects are described in EA section 3.4.3.

3.4 Affected Environment and Environmental Effects

Those elements of the human environment that were determined to be affected are *fisheries/aquatic habitat, Riparian, wildlife and fire hazard/risk*. This section describes the current condition and trend of those affected elements, and the environmental effects of the alternatives on those elements.

3.4.1 Fisheries/ Aquatic Habitat

(Middle Fall Creek Fisheries Report - pp. 1-4)

Environmental Effects

3.4.1.1 Proposed Action:

Falling of additional trees would not impact the aquatic environment, unless trees were felled directly into stream channels. If trees are dropped into stream channels an increase in turbidity could occur. This would be short term and would not negatively affect fish. A long term impact would be an increase in habitat complexity and cover for fish and other aquatic organisms.

3.4.1.2 No Action:

Current stream habitat conditions would continue.

3.4.2 Riparian

(Middle Fall Creek Riparian Reserves Report - pp. 1-11)

Environmental Effects

3.4.2.1 Proposed Action:

Coarse woody debris and snags, which are currently lacking, especially in decay class 1 and 2, would be increased. Increased CWD and snags would provide habitat for amphibians, small mammals and invertebrates. There would be a short term elevated risk of Douglas-fir bark beetle infestation in healthy standing trees, due to unyarded cut trees. Bark beetle infestation risk may be minimized by following guidelines developed for the Siuslaw National Forest (see MFAF).

3.4.2.2 No Action Alternative:

Coarse woody debris and snags would continue in their current condition and numbers.

3.4.3 Wildlife

(Biological Evaluation for Terrestrial Wildlife (pp. 1-5))

Environmental Effects

3.4.3.1 Proposed Action:

This project would create up to three snags or down logs per acre within the proposed treatment units of Project 1. This project would have a negligible effect on canopy closure of the treatment area, while enhancing habitat conditions in the short-term and long-term for wildlife species that are associated with coarse woody debris. Short-term impacts to wildlife species are considered negligible.

3.4.3.2 No Action Alternative:

This alternative would forego the beneficial effects of creating coarse woody debris within proposed thinning units. Natural processes such as wind throw, insect damage, and disease would contribute CWD over time, but may not provide the immediate input, distribution, and quality of this proposed project.

3.4.4 Fire Hazard/Risk

(Middle Fall Creek Thinning Timber Sale Proposal Fuels/Soils Report pp. 1-12)

Environmental Effects

3.4.4.1 Proposed Action:

Cutting, girdling or topping a few scattered trees within a thinned stand would not have a statistically substantial effect on the fuels resource, or fire risk.

3.4.4.2 No Action Alternative:

Natural processes such as wind throw, insect damage, and disease would contribute CWD over time, but may not provide the immediate input, distribution, and quality of this proposed project.

4.0 PROJECT 3 (RELEASE OF EXISTING CONIFER REGENERATION AND ENHANCEMENT OF WOLF TREES)

4.1 Purpose of and Need for Action

Desired vegetation characteristics required for proper Riparian Reserve function include large trees, abundant and well distributed mature and understory conifers, diverse shrub species, and large woody debris in stream channels and on floodplains. The Riparian Reserve stands in the proposed project area lack many of these characteristics.

4.2 Alternatives

4.2.1 Alternative Development

No unresolved conflicts concerning alternative uses of available resources (section 102(2) (E) of NEPA) were identified. No alternatives were identified that would meet the purpose and need of the project and have meaningful differences in environmental effects from the proposed action. Therefore, this EA will analyze the effects of the “proposed action” and the “no action alternative”.

4.2.2 Proposed Action:

Within the Riparian Reserve of the recreation management area in Unit 35 B (see Alternative 2 map) approximately 4 overstory conifers per acre (approximately 84 trees total) would be cut to release the crowns of large wolf trees or to release understory conifers. Crowns of wolf trees (large thick branches, deep crowns) would be opened up completely, felling all the trees around them. Over story conifers close enough to fall into adjacent streams would be felled toward the streams to create stream structure. Over story conifers would be felled around existing conifer regeneration to allow approximately 60 percent of total potential light to reach each released tree crown. Only conifer regeneration which indicates a good chance for survival would be released. Over story conifers would remain on site and would provide class I coarse woody debris.

4.2.2.1 No Action Alternative:

The local plant and animal communities would be dependent on and respond to ecological processes that would continue to occur based on the existing condition. This alternative serves to set the environmental baseline for comparing effects to the proposed action.

4.3 Identification of Affected Elements of the Environment

Critical Elements of the Human Environment (BLM H-1790-1, Appendix 5) are in *italics*. Affected elements are **bold**. All entries apply to the proposed action, unless otherwise noted.

Table 7: Identification of Affected Elements of the Environment

PROJECT 3- Release of existing conifer regeneration and enhancement of wolf trees			
Elements Of The Human Environment	Status: (i.e., Not Present, Not Affected, or Affected)	Does this project contribute to cumulative effects?	Remarks If not affected, why?
<i>Adverse Impacts on the National Energy Policy</i>	<i>Not Affected</i>	<i>No</i>	<i>There are no known energy resources located in the project area. The proposed action would have no effect on energy development, production, supply and/or distribution.</i>
<i>Air Quality</i>	<i>Not Affected</i>	<i>No</i>	<i>No burning would occur.</i>
<i>Areas of Critical Environmental Concern</i>	<i>Not Present</i>	<i>No</i>	

PROJECT 3- Release of existing conifer regeneration and enhancement of wolf trees			
Elements Of The Human Environment	Status: (i.e., Not Present , Not Affected, or Affected)	Does this project contribute to cumulative effects?	Remarks If not affected, why?
<i>Cultural Resources</i>	<i>Not Affected</i>	<i>No</i>	<i>No pre-project surveys required as outlined in the Protocol for Managing Cultural Resources on Land Administered by the Bureau of Land Management in Oregon: (Cultural Resource/ Archeological Report pp.1) (Cultural Resource/ Archeological Report pp.1)</i>
<i>Environmental Justice (Executive Order 12898)</i>	<i>Not Affected</i>	<i>No</i>	<i>The proposed action is not anticipated to have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.</i>
<i>Prime or Unique Farm Lands</i>	<i>Not Present</i>	<i>No</i>	
<i>Flood Plains</i>	<i>Not Present</i>	<i>No</i>	
<i>Hazardous or Solid Wastes</i>	<i>Not Present</i>	<i>No</i>	
<i>Invasive, Nonnative Species (plants) (Executive Order 13112)</i>	<i>Not Affected</i>	<i>No</i>	<i>(Marys Peak Resource Area Botanical Report pp. 1-6)</i>
<i>Native American Religious Concerns</i>	<i>Not Affected</i>	<i>No</i>	<i>No Native American religious concerns were identified during the public scoping period.</i>
<i>Threatened or Endangered (T/E) Fish Species or Habitat</i>	<i>Not Present</i>	<i>No</i>	
<i>Threatened or Endangered (T/E) Plant Species or Habitat</i>	<i>Not Affected</i>	<i>No</i>	<i>(Marys Peak Resource Area Botanical Report pp. 1-6)</i>
<i>Threatened or Endangered (T/E) Wildlife Species or Habitat</i>	<i>Northern Spotted Owl - Affected</i> <i>Marbled Murrelet – Not Affected</i>	<i>No</i>	<i>(Biological Evaluation for Terrestrial Wildlife pp. 1-5) Effects to wildlife are described in EA section 4.4.4.</i>
<i>Water Quality (Surface and Ground)</i>	<i>Affected</i>	<i>No</i>	<i>Effects to Water Quality are described in EA section 4.4.1. (Middle Fall Creek Hydrology Report pp.1-11) (Cumulative Effects Analysis for Fall Creek and Coleman Creek Catchments pp.1-5)</i>
<i>Wetlands/Riparian Zones</i>	<i>Riparian Affected</i> <i>Wetlands not present</i>	<i>No</i>	<i>Effects to Riparian Zones are described in EA section 4.4.3 (Middle Fall Creek Timber Sale Proposal Riparian Reserves report, pp. 1-5)</i>
<i>Wild and Scenic Rivers</i>	<i>Not Present</i>	<i>No</i>	
<i>Wilderness</i>	<i>Not Present</i>	<i>No</i>	
<i>Coastal zone</i>	<i>Not Affected</i>	<i>No</i>	
<i>Fire Hazard/Risk</i>	<i>Affected</i>	<i>No</i>	<i>Effects to Fire Hazard/Risk are described in EA section 4.4.5 (Middle Fall Creek Thinning Timber Sale Proposal Fuels/Soils Report pp. 1-12)</i>
<i>Fish Species with Bureau Status (except T/E) and Essential Fish Habitat</i>	<i>Affected</i>	<i>No</i>	<i>Effects to Fish Species with Bureau Status and Essential Fish Habitat are described in EA section 4.4.2.</i>
<i>Land Uses (right-of-ways, permits, etc)</i>	<i>Not present</i>	<i>No</i>	
<i>Late Successional and Old Growth Species Habitat</i>	<i>Not Present</i>	<i>No</i>	

PROJECT 3- Release of existing conifer regeneration and enhancement of wolf trees			
Elements Of The Human Environment	Status: (i.e., Not Present , Not Affected, or Affected)	Does this project contribute to cumulative effects?	Remarks If not affected, why?
Mineral Resources	Not Present	No	
Recreation	Not Affected	No	Felling of approximately 84 trees within 21 acres and not immediately adjacent to hiking/biking trails would not affect the recreationist.
Rural Interface Areas	Not Present	No	
Soils (productivity, erodibility, mass wasting, etc.)	Not Affected	No	Minimal soil disturbance would occur since the trees would be felled and left in place.
Special Areas outside ACECs (Within or Adjacent) (RMP pp. 33-35)	Not Present	No	
Special Status, rare or uncommon (except T/E) Plant Species/Habitat	Not Affected	No	Based on survey results: There are no "known" sites of any special status fungi, vascular plants, lichens, bryophytes, nor were any found during subsequent surveys. No trees would be felled or girdled in the botanical reserve areas. (Marys Peak Resource Area Botanical Report pp.1-6)
Special Status (except T/E) Wildlife Species/Habitat	Not Present	No	Wildlife Report (pp. 1-5)
Visual Resources	Not Affected	No	There is no cumulative effect on Visuals or Recreation. The proposed action of felling 84 scattered trees within 21 acres would not considerably alter the landscape. (Middle Fall Creek Visual, Recreation and Rural Interface Input pp.1-5)
Water Resources – Other (303d listed streams, DEQ 319 assessment, Downstream Beneficial Uses; water quantity, Key watershed, municipal watershed)	Not Affected	No	Because impacts to water quality are likely to be not measurable they are not likely to affect listed streams downstream. No effects are anticipated on beneficial uses of project area streamflow and the project is not located in a key watershed. The closest domestic water user is located approx. 9 miles downstream of the project area on the South Fork Alsea River. (Middle Fall Creek Hydrology Environmental Assessment pp.1-11)
Wildlife Structural Components (Snags/CWD/Wolf trees)	Affected	No	(Biological Evaluation for Terrestrial Wildlife pp. 1-5) Effects are described in EA section 4.4.4.

4.4 Affected Environment and Environmental Effects

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

4.4.1 Water

(Middle Fall Creek Hydrology Report pp.1-11) (Cumulative Effects Analysis for the Lower South Fork Alsea River Catchments pp.1-5)

Environmental Effects

4.4.1.1 Proposed Action:

Project 3 is unlikely to have any measurable impact on water resources, unless a tree is felled into a stream. Where conifers would be cut and left on site, any disturbance to soil would be localized and unlikely to affect stream sedimentation, turbidity, temperature, or channel function. Because of the small amount of canopy and ground cover affected, the project would be unlikely to contribute to cumulative effects in the watershed.

Felling logs into a stream may temporarily increase amounts of suspended sediment and flow turbidity. However, these increases are likely to occur during and immediately following the project and would likely not be detectable downstream. Over the long term, adding wood to stream channels would slow stream velocities, increase sedimentation, increase the retention of organic matter, and could raise the channel bed level.

Since the immediate effects of this action are likely to be localized and occur during project implementation, they would be unlikely to contribute to cumulative effects. However, as the aquatic habitat in this stream reach is slowly restored, this project would likely positively contribute to the overall function of streams in the Upper Alsea River watershed.

4.4.1.2 No Action:

No action would result in the continuation of current conditions and trends in project area streams. The Upper Alsea watershed would continue to be depleted of LWD and CWD over historic conditions.

4.4.2 Fisheries/Aquatic Habitat

(Middle Fall Creek Fisheries Report - pp. 1-4)

Environmental Effects

4.4.2.1 Proposed Action:

Falling of trees would not impact the aquatic environment, unless trees were felled directly into stream channels. If trees are dropped into stream channels an increase in turbidity could occur. This would be short term and would not negatively affect fish. Long term impacts would be an increase in habitat complexity and cover for fish and other aquatic organisms.

4.4.2.2 No Action:

Current stream habitat conditions would continue. Large woody debris would not be created immediately and trees would continue to compete for sunlight. Over time, trees would thin themselves but remaining trees would be of smaller diameter and have smaller crowns. Consequently trees that die and fall would be smaller diameter. Smaller diameter trees would not function on the ground and in-stream as long or as well as larger diameter trees.

4.4.3 Riparian

(Middle Fall Creek Riparian Reserves Report - pp. 1-11)

Environmental Effects

4.4.3.1 Proposed Action:

Coarse woody debris and snags, which are currently lacking, particularly in decay class 1 and 2, would be increased, providing habitat for amphibians, small mammals and invertebrates. There would be a short term elevated risk of Douglas-fir bark beetle infestation in healthy standing trees, due to unyarded cut trees. Bark beetle infestation risk may be minimized by following guidelines developed for the Siuslaw National Forest (see MFAF).

4.4.3.2 No Action Alternative:

Coarse woody debris and snags would continue in their current condition and quantities.

4.4.4 Wildlife

(Biological Evaluation for Terrestrial Wildlife (pp. 1-5))

Environmental Effects

4.4.4.1 Proposed Action:

This project would have a negligible effect on canopy closure of the treatment area, while enhancing habitat conditions in the short-term and long-term for wildlife species that are associated with coarse woody debris. Short-term impacts to wildlife species are considered negligible.

4.4.4.2 No Action Alternative:

This alternative would forego the beneficial effects of releasing selected large conifers and enhancing coarse woody debris conditions. Natural processes such as wind throw, insect damage, and disease would contribute CWD over time, and may enable some large conifers to further differentiate, but may not provide the immediate input, distribution, and quality of this proposed project.

4.4.5 Fire Hazard/Risk

(Middle Fall Creek Thinning Timber Sale Proposal Fuels/Soils Report pp. 1-12)

Environmental Effects

4.4.5.1 Proposed Action:

Any effects on the fuels resource from cutting scattered trees for coarse woody debris retention within the Recreation Management area (un-thinned stand) would raise the fuel loading by approximately 2-4 tons per acre in the greater than 9" size classes. The increase in fuel loading in the less than 9" size classes would be minimal, (less than ½ ton per acre). No considerable increase in fire risk is expected.

4.4.5.2 No Action:

With no treatment the fire hazard/risk would be left in its current state.

4.4.6 Comparison of Alternatives

4.4.6.1 With Regard to the Purpose and Need

Table 8: Comparison of Alternative by Purpose and Need

Purpose and Need	No Action	Proposed Action
Riparian Reserve stands lack many of the desired vegetation characteristics for proper Riparian Reserve function including large trees, abundant and well distributed mature and understory conifers, diverse shrub species, and large woody debris in stream channels and on floodplains.	Over time trees would thin themselves, but remaining trees would be of smaller diameter and have smaller crowns. Trees that die and fall would be smaller diameter. Smaller diameter trees would not function on the ground and in stream as long or as well as larger diameter trees.	Falling of trees into stream channels would increase habitat complexity and cover for fish and other aquatic organisms. Habitat conditions would be enhanced for wildlife species that are associated with coarse woody debris and open grown conifer trees. These conditions would be met in the short and long term.

5.0 COMPLIANCE WITH COMPONENTS AQUATIC CONSERVATION STRATEGY OBJECTIVES

Table 9 describes the projects' consistency with the four components of the Aquatic Conservation Strategy (1/ Riparian Reserves, 2/ Key Watersheds, 3/ Watershed Analysis and 4/ Watershed Restoration). Unless otherwise specified, the entries apply to all three projects.

Table 9: Projects' Compliance of Components of the Aquatic Conservation Strategy Objectives

ACS Component	Project Consistency
Component 1 – Riparian Reserves	The Riparian Reserve boundaries would be established consistent with direction from the Salem District Resource Management Plan (p. 10). Projects 1 and 2: Maintaining canopy cover along all streams would protect stream bank stability and water temperature. Additionally, there would be no road construction within the Riparian Reserve. Project 3: Release of large wolf trees and creation of coarse woody debris would restore Riparian Reserve function.
Component 2 - Key Watershed	The project is located within the Upper Alsea River watershed, which is not designated as a key watershed.

ACS Component	Project Consistency
Component 3 - Watershed Analysis	The South Fork Alsea River Watershed Analysis document was completed in October 1995. The project is consistent with the recommendations in the Watershed Analysis.
Component 4 - Watershed Restoration	Increasing stand diversity in Riparian Reserves addresses this component.

Project 1: Middle Fall Creek Thinning - See EA Appendix 1

Project 2: Future Monitoring/Potential Creation of Coarse Woody Debris within Riparian Reserve. Short-term localized increases in stream sediment can be expected if trees are felled into streams. An increase in turbidity would be short term and would not affect fish. A long term impact would be an increase in habitat complexity and cover for fish and other aquatic organisms. This project would have a negligible effect on canopy closure of the treatment area, while enhancing habitat conditions in the short-term and long-term for wildlife species that are associated with coarse woody debris.

Project 3: Release of existing conifer regeneration and enhancement of "wooly trees"-Short-term localized increases in stream sediment can be expected if trees are felled into streams. However, these increases are likely to occur during and immediately following the project and would likely not be detectable downstream. Where conifers would be cut and left on site, any disturbance to soil would be localized and unlikely to affect stream sedimentation, turbidity, temperature, or channel function. Over the long term, adding wood into stream channels would slow stream velocities, increase sedimentation, increase the retention of organic matter, and could raise the channel bed level. Coarse woody debris and snags, which are currently lacking, particularly in decay class 1 and 2, would be increased, providing habitat for amphibians, small mammals and invertebrates. This project would have a negligible effect on canopy closure of the treatment area, while enhancing habitat conditions in the short-term and long-term for wildlife species that are associated with coarse woody debris. Short-term impacts to wildlife species are considered negligible.

6.0 LIST OF PREPARERS

Table 1: List of Preparers

Resource	Name	Initial	Date
Cultural Resources	Tom Vanderhoof	TMV	8/14/04
Hydrology	Ashley La Forge	ALF	8/16/04
Soils/Fuels	Tom Tomczyk	TST	8/12/04
Riparian Ecology	Amy Haynes	AH	8/12/04
Vegetation (upland stand structure)	Bill Caldwell	BC	8/16/04
Botany TES and Special Status Plant Species	Ron Exeter	RE	Aug 16 2004
Wildlife TES and Special Status Animal Species	Scott Hopkins	SH	8/16/04
Fisheries/Aquatic	Steve Liebhardt	SL	8/16/04

Resource	Name	Initial	Date
Recreation Sites, Visual Resources Management and Rural Interface	Traci Meredith	TMM	8/12/04
NEPA / Plans	Carolyn Sands	CS	8/17/04

7.0 CONTACTS AND CONSULTATION

7.1 Agencies, Organizations, and Persons Consulted

7.1.1 ESA Section 7 Consultation

1. **US Fish and Wildlife Service** - The Middle Fall Creek proposal has been consulted upon under the Programmatic Biological Assessment in the *North Coast Province for Fiscal Year 2003-2004 Projects Which Would Modify the Habitats of Bald Eagles, Northern Spotted Owls, and Marble Murrelets* (July 24, 2002). A biological opinion was issued by the US Fish and Wildlife Service based upon the information provided in the biological assessment (FWS reference # 1-7-02-F-956).
2. **NOAA Fisheries (NMFS)** - The area where the projects are located have three streams which flow into the South Fork Alsea River. The South Fork Alsea River provides habitat for Oregon Coast Coho salmon (approximately one mile down stream from the project area), which are listed as threatened under the Endangered Species Act. Consultation with NOAA Fisheries will be conducted under current BLM policy. A "*May Affect, Not Likely to Adversely Affect*" determination due to the small size, scope, and duration of this project was submitted to NOAA Fisheries in the biological assessment. A decision would not be made on this project until a letter of concurrence is received.

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

Under the Cultural Resource Survey Guidelines, pre-project surveys are no longer undertaken. The guides are based on the results of the Protocol for Managing Cultural Resources on Lands Administered by the Bureau of Land Management: Appendix D – "Coast Range Inventory Plan". The "Plan" in part states; "the lack of important historic properties found by previous inventories concluded that the chances of finding important historic properties in the area are so minimal that further expenditure of agency funds for cultural resource surveys prior to project implementation are not justified".

7.2 Public Scoping and Notification

7.2.1 Tribal Governments, Adjacent Landowners, General Public, and State, County and local government offices:

A scoping letter dated September 9, 2003 was sent to 24 potentially affected and/or interested individuals, groups, and agencies. – No responses were received during the scoping period.

7.2.2 30-day public comment period:

The EA and FONSI will be made available for public review from August 20, 2004 to September 20, 2004. The notice for public comment will be published in a legal notice by local newspapers of general circulation (Corvallis Gazette Times); sent to those individuals, organizations, and agencies that have requested to be involved in the environmental planning and decision making processes; and posted on the Internet at <http://www.or.blm.gov/salem/html/planning/index.htm> under Environmental Assessments. Comments received in the Marys Peak Resource Area Office, 1717 Fabry Road SE, Salem, Oregon 97306, on or before September 20, 2004 at 4:00 PM, Pacific Daylight Saving Time, will be considered in making the final decisions for these projects.

8.0 MAJOR SOURCES AND COMMON ACRONYMS

8.1 Major Sources:

Specialists' reports can be found in the Middle Fall Creek Project file. These reports are available for review at the Salem District Office.

Caldwell, W. 2003. *Middle Fall Creek Density Management Silviculture Prescription*. Marys Peak Resource Area, Salem District, Bureau of Land Management. Salem, OR.

Exeter, R. 2003. *Marys Peak Resource Area Botanical Report*. Marys Peak Resource Area, Salem District, Bureau of Land Management. Salem, OR.

Haynes, A. 2003. *Middle Fall Creek Timber Sale Proposal Riparian Reserves Report*. Marys Peak Resource Area, Salem District, Bureau of Land Management. Salem, OR.

Hopkins, S. 2003. *Biological Evaluation for Terrestrial Wildlife*. Marys Peak Resource Area, Salem District, Bureau of Land Management. Salem, OR.

La Forge, A. 2003. *Middle Fall Creek Hydrology Report*. Marys Peak Resource Area, Salem District, Bureau of Land Management. Salem, OR.

La Forge, A. 2003. *Cumulative Effects Analysis for Fall Creek and Coleman Creek Catchments*. Marys Peak Resource Area, Salem District, Bureau of Land Management. Salem, OR.

Liebhardt, S. 2003. *Middle Fall Creek Thinning Project Fish EA Input*. Marys Peak Resource Area, Salem District, Bureau of Land Management. Salem, OR.

Meredith, T. 2003. *Middle Fall Creek Visual, Recreation and Rural Interface Input*. Marys Peak Resource Area, Salem District, Bureau of Land Management. Salem, OR.

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

USDI. Bureau of Land Management. 1995. *South Fork Alsea River Watershed Analysis*.

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

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

USDI. Bureau of Land Management. 1992. *Final Record of Decision for Western Oregon Program Management of Competing Vegetation*. (August 1992).

USDI. Fish and Wildlife Service 2002. *Programmatic Biological Assessment in the North Coast Province for Fiscal Year 2003-2004 Projects Which Would Modify the Habitats of Bald Eagles, Northern Spotted Owls, and Marbled Murrelets*. Biological Opinion – FWS reference: 1-7-02-F-956]. Portland, OR.

USDA. Forest Service, USDI. Bureau of Land Management. 2004. *Record of Decision to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines in Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl*.

8.2 Common Acronyms

ACS – Aquatic Conservation Strategy

BLM – Bureau of Land Management

BMP – Best Management Practice(s)

BO – Biological Opinion

CWD – Coarse Woody Debris

DBH – Diameter Breast Height

EA - Environmental Assessment

ESA – Endangered Species Act

FONSI – Finding of No Significant Impact

GFMA – General Forest Management Area land use allocation (Matrix)

LSRA – Late Successional Reserve Assessment (1996)

LWD – Large Woody Debris

NEPA – National Environmental Policy Act (1969)

NOAA – National Oceanic Atmospheric Administration (National Marine Fisheries Service (NMFS) is now called NOAA Fisheries)

NWFP – Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl and Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Related Species within the Range of the Northern Spotted Owl (1994) (Northwest Forest Plan)
RMP – Salem District Record of Decision and Resource Management Plan (1995)
RMPFEIS – Salem District Proposed Resource Management Plan / Final Environmental Impact Statement (1994)
ROW – Right-of-Way (roads)
RR – Riparian Reserves (land use allocation)
SFAWA – South Fork Alsea Watershed Analysis (1995)
SPZ – Stream Protection Zone (no-cut protection zone/no-cut buffer/no-treatment zone/stream buffer)
USDI – United States Department of the Interior
USFWS – United States Fish and Wildlife Service
VMFEIS - Western Oregon Program-Management of Competing Vegetation Final Environmental Impact Statement (1989)
SSSP - Record of Decision to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines in Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl, March 2004

9.0 APPENDICES

9.1 Appendix 1: Aquatic Conservation Strategy Objectives Review Summary

Table 11: Aquatic Conservation Strategy Objectives Review for Project 1

(Note - See RMP pg 5-6 for more detailed explanations of the ACS objectives)

ACS Objective	How The Proposed Action Meets the ACS Objective
1. Maintain and restore distribution, diversity, and complexity of watershed and landscape features to ensure protection of aquatic systems.	Riparian Reserves in the analysis area as a whole are characterized by a lack of late-seral and old-growth habitat. Riparian stands older than 80 years account for 29 percent of the analysis area's total riparian acreage (South Fork Alsea River Watershed Analysis [SFAWA], USDI BLM. October, 1995, p. R&CC-19). The watershed also generally lacks large woody debris (SFAWA-63). The proposed thinning project would be a means to enhance late-successional forest conditions and speed up attainment of these conditions across the landscape. Since Riparian Reserves provide travel corridors and resources for aquatic, riparian-dependant and other riparian and/or late-successional associated plants and animals, the increased structural and plant diversity would ensure protection of aquatic systems by maintaining and restoring the distribution, diversity and complexity of watershed and landscape features.
2. Maintain and restore spatial connectivity within and between watersheds.	<p>Long term connectivity of terrestrial watershed features would be improved by enhancing conditions for understory development (structural diversity), increasing the proportion of minor species in the stand (species diversity), and increasing growth rates on remaining trees. In time, these reserves would improve in functioning as refugia for late successional, aquatic and riparian associated and dependent species.</p> <p>No stream crossing culverts would be used that would potentially hinder movement of aquatic species; therefore no aquatic barriers would be created.</p> <p>Both terrestrial and aquatic connectivity would be maintained, and over the long-term, as Riparian Reserves develop late successional characteristics, lateral, longitudinal and drainage connectivity would be restored.</p>
3. Maintain and restore physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.	<p>A no cut stream protection zone (SPZ) would maintain the integrity of shorelines, banks and bottom configurations. Criteria used to designate SPZ's were riparian vegetation, major slope breaks, active floodplain or high water tables, and areas contributing to stream shading. All SPZ's are a minimum of approximately 50 feet. Trees would be directionally felled within one tree height of SPZ's and any part that falls within them would remain (EA p. 8), thereby preventing disturbance to stream banks and bottom configurations.</p> <p>Because of the small amount of forest affected by the proposed projects, the proposed actions are unlikely to alter the current condition of the aquatic systems either by affecting their physical integrity, water quality, sediment regime or in-stream flows (EA p. 19).</p>

ACS Objective	How The Proposed Action Meets the ACS Objective
4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems.	<p>The proposed logging action would not adversely affect the aquatic environment. (EA p. 21). The proposed project is unlikely to contribute to cumulative effects to sedimentation or increases of stream temperature, because it is unlikely to produce any measurable effects on these parameters EA p.21. Within riparian zones, substantial portions of the riparian canopy would be retained, therefore maintaining riparian microclimate conditions and protecting streams from increases in temperature (EA p. 19). Streams would also be protected from potential increases in sediment and turbidity. Potential impacts resulting from tree harvest and road construction/renovation would be mitigated to reduce the potential for measurable sediment delivery to streams, by implementing Best Management Practices (BMPs), such as stream and road no-treatment buffers, minimum road widths, minimal excavation, ensuring appropriate drainage from road sites, seasonally restricting hauling etc. All timber hauling and road construction would be restricted if necessary to avoid excessive increases in sedimentation (EA p. 19).</p> <p>Tree removal and road renovation/construction would not occur on steep, unstable slopes where the potential for mass wasting adjacent to stream reaches is high. Therefore, increases in sediment delivery to streams due to mass wasting are unlikely to result from this action. Other water quality parameters (nutrients, dissolved oxygen, etc.) are unlikely to be affected by these projects.</p>
5. Maintain and restore the sediment regime under which the system evolved.	<p>Short-term localized increases in stream sediment can be expected during reconstruction of stream crossings. (EA p. 19), but best management practices (BMPs) and mitigation measures would be implemented to limit acceleration of sediment delivery to streams in the project area.</p> <p>Tree removal would not occur on steep, unstable slopes where the potential for mass wasting adjacent to stream reaches is high. Therefore, increases in sediment delivery to streams due to mass wasting are unlikely to result from this action (EA, p. 19).</p> <p>Project design features would maintain the physical integrity of the hill slopes and channel; no long-term alteration of the current sediment regime is expected.</p>
6. Maintain and restore in-stream flows.	<p>Two Level 1 analyses for potential increases to peak flows in the Fall Creek and Coleman Creek catchments (7th-field watersheds) determined the risk of increasing flows to be “low” (EA, p. 20).</p>
7. Maintain and restore the timing, variability and duration of floodplain inundation and water table elevation in meadows and wetlands.	<p>The proposed project would not alter existing patterns of floodplain inundation or water table elevation as it would have no effects or only negligible short-term effects on existing flow patterns and stream channel conditions.</p> <p>Over the long term, reductions in stand density would likely increase riparian forest health and tree size. This would lead to increased large wood recruitment for stream channels, an important factor in proper channel function. Additional large wood in project area channels would ultimately slow stream velocity, increase retention of organic material, capture bed load, and improve aquatic habitat.</p> <p>There are no meadows or wetlands in the proposed project area.</p>

ACS Objective	How The Proposed Action Meets the ACS Objective
<p>8. Maintain and restore the species composition and structural diversity of plant communities in riparian zones and wetlands to provide thermal regulation, nutrient filtering, and appropriate rates of bank erosion, channel migration and CWD accumulations.</p>	<p>The actual riparian areas (as defined by criteria in EA project file, <i>Riparian Reserves Report</i>) along streams would be excluded from treatment, by designating stream protection zones, and only the upslope portions of the Riparian Reserves would be included in the density management treatment.</p> <p>Stream protection zones and residual trees would continue shading streams.</p> <p>Structural components of late-seral forests (large trees, multiple canopy layers, large hard snags, heavy accumulations of down wood, and species diversity) are generally lacking in the young stands surrounding and including the project area. In addition, the proposed project would restore the species composition and structural diversity of plant communities by enhancing conditions for understory development (structural diversity), increasing the proportion of minor species in the stand (species diversity), increasing growth rates on remaining trees and creating CWD.</p>
<p>9. Maintain and restore habitat to support well distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.</p>	<p>Habitat to support well distributed riparian-dependent and riparian associated species would be restored by reducing overstocked stands, increasing tree species diversity, and altering forest structural characteristics.</p> <p>Density management within the Riparian Reserves would enhance stand conditions, growing trees faster than if the stand were to grow naturally. This would increase the potential for high quality in-stream large woody debris.</p> <p>Species linked to Riparian Reserves issues are mostly associated with late-seral forest conditions, which would be enhanced within this stand with negligible affects to existing function of the local Riparian Reserves corridors. Development of stand and individual tree characteristics desirable for riparian and old growth associated species would be accelerated by restoring structural complexity to the stands and by accelerating development of desired tree characteristics (increased diameter and increased crown depth/width).</p>