UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SALEM DISTRICT OFFICE
MARYS PEAK RESOURCE AREA

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT FOR FALLS-OVER PROJECT

EA NUMBER : OR-080-00-17
PREPARED BY: Interdisciplinary Team; Patrick Hawe, Team Lead
AREA ENVIRONMENTAL COORDINATOR: Belle Smith

Summary: This document is an Environmental Assessment and Finding of No Significant Impact for the proposed Falls-over stream project. The project area is located in Township 14 South, Range 7 West, Sections 25 and 36 Willamette Meridian, Benton County. The land use allocations are Matrix (General Forest Management Area [GFMA]), Late-Successional Reserve and Riparian Reserve.

Alternative 1, the proposed action, would utilize draft animals (teams of horses) to pull over live Douglas-fir trees adjacent to the main South Fork Alsea into the stream channel.

Alternative 2 is the No Action alternative.

The environmental analysis focuses on the following issues identified through scoping and by an interdisciplinary team of BLM resource specialists:

> <u>Vegetation</u>: Effects on native vegetation and special status/SEIS special attention species and habitats and noxious weeds.
> <u>Soils/Fuels:</u> Effects on soil erosion. Effects on fuel loading and fire risk.
> <u>Water/Riparian</u>: Effects on stream flow, channel conditions, water quality and aquatic conservation strategy objectives.
> <u>Wildlife:</u> Effects on special status, special attention and other wildlife species and their habitats.
> <u>Fisheries</u>: Effects on fisheries and their habitats.
> <u>Recreation</u>: Effects on existing recreation resources in the area.

For further information, contact Patrick Hawe (503-315-5974), 1717 Fabry Rd. S.E., Salem, Oregon, 97306. Comments on this environmental assessment are due January 7, 2002.

FINDING OF NO SIGNIFICANT IMPACT

Introduction

The Bureau of Land Management (BLM), Marys Peak Resource Area has analyzed the potential effects of pulling over Douglas-fir trees into the South Fork Alsea channel in the upper drainage (T. 14 S., R. 7 W., Secs. 25 and 36 W.M.) of the South Fork Alsea River Watershed, Benton County, Oregon. The action described in this environmental assessment (EA) is proposed to increase the quantity of large wood in the South Fork Alsea channel. This action will help to "restore the distribution, diversity, and complexity of watershed and landscape features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted;" one of the objectives identified in the Aquatic Conservation Strategy (ACS) on page 5-6 of the *Salem District Record of Decision and Resource Management Plan* (RMP, May 1995). In addition, the proposed action would provide a baseline for meeting the standard of "80 pieces/mile of large woody debris, >24 inch minimum diameter and > 50 feet in length" as identified in the *South Fork Alsea Watershed Analysis* (p.74-75, October 1995). All applicable direction in the Northwest Forest Plan is incorporated in the *RMP*. The EA is attached to and incorporated by reference in this Finding of No Significant Impact (FONSI) determination.

This FONSI and the EA are being made available for public review prior to making a decision on the action. The public notice of availability for review will be published in Corvallis Gazette-Times on December 6, 2001 of general circulation and through notification of interested individuals, organizations, and state and federal agencies. They will also be available for review on the internet at this address: http://www.or.blm/salem/ (planning).

Finding Rationale

For the alternatives analyzed, significant impacts on the quality of the human environment would not occur based on the following criteria:

1) The alternatives are in conformance with the following documents which describe the objectives, land use allocations, and management actions/direction for BLM-administered lands in the Marys Peak Resource Area:

- *Record of Decision and Standards and Guidelines for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (S&M ROD, January 2001).

- *Final Supplemental Environmental Impact Statement For Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (S&M FSEIS, November 2000).

- Salem District Record of Decision and Resource Management Plan (RMP, May 1995*)*

- *Salem District Proposed Resource Management Plan/Final Environmental Impact Statement* (PRMP/FEIS, September 1994).

- *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (ROD, April 1994) and the *Final Supplemental Environmental Impact Statement on Management of Habitat for Late Successional Forest Related Species Within the Range of the Northern Spotted Owl* (SEIS, February 1994, also known as the Northwest Forest Plan).

- *Late-Successional Reserve Assessment, Oregon Coast Province- Southern Portion (RO267, RO268), version 1.3 June 1997* (LSRA; USDA FS and USDI BLM 1997)

Relationship of Alternatives to Relevant Management Direction

Management Direction	**Relationship of This Action**
Interim Riparian Reserves	Alt. 1 (Proposed Action): Live Douglas-fir trees would be pulled over within Riparian Reserves. Management actions/direction for Riparian Reserve include restoration of the distribution, diversity, and complexity of watershed features, Aquatic Conservation Strategy objectives (RMP p.5-6) Alt. 2: Riparian Reserves would remain undisturbed.
Key Watersheds	The proposed project area is not in a Key Watershed.
Watershed Restoration	Aquatic Conservation Strategy objectives (RMP p.5-6) include restoration of the distribution, diversity, and complexity of watershed features.
Watershed Analysis	The first iteration of the *South Fork Alsea Watershed Analysis* was completed October 1995.

2) The alternatives are consistent with other federal agency and State of Oregon land use plans and with the Benton County land use plan and zoning ordinances. Any permits associated with the implementation of this project would be obtained, and all requirements would be met, including Division of State Lands Regional General Permit (RGP) for Stream Restoration.

3) No wild and scenic rivers, prime or unique farmlands occur within the project area

4) No known cultural or paleontological resources occur in the project area. A post-treatment survey would be done upon completion of the project according to Protocol for Managing Cultural Resources on Lands Administered by the BLM in Oregon.

5) No hazardous materials or solid waste were observed in the project area nor would they be created by the proposed action. Any chemicals or fuel used on the site would be handled using best management practices (RMP, Appendix C).

6) Conformance of the alternatives with the Aquatic Conservation Strategy (ACS) components listed in the RMP (pp. 5 and 6) are displayed in Appendix C.

7) The project area does not qualify for potential wilderness nor has it been nominated as an area of critical environmental concern.

8) Project design features would assure that potential impacts to water quality from this project would be in compliance with the State of Oregon's In-stream Water Quality Standards and thus the Clean Water Act.

9) In accordance with the RMP (see pp. 21-22), the amount of late-successional forest (i.e., 80 years and older) on federal lands was determined for the Upper Alsea Watershed. The 80+ forest age classes occur on approximately 32 percent of the federal lands in the Upper Alsea. This exceeds the RMP standard of 15 percent.

10) The proposed action is within the coastal zone as defined by the Oregon Coastal Management Program. This proposal is consistent with the objectives of the program and the state planning goals which form the foundation for compliance with the requirements of the Coastal Zone Act. Management actions/direction found in the RMP were determined to be consistent with the Oregon Coastal Management Program.

11) Consultation with the National Marine Fisheries Service (NMFS) for Oregon Coast Coho Salmon, will be conducted under normal BLM policy.

The proposed action is local in nature, and potential adverse impacts would be short-term. Impacts were determined based on observation, and professional training and experience of the interdisciplinary team of BLM natural resource specialists. Determining such environmental effects reduces the uncertainties to a level which does not involve unique risks. The design features identified in the EA would assure that no significant site-specific or cumulative impacts would occur to the human environment other than those already addressed in the EIS.

Finding of No Significant Impact Determination

Based on the analysis of information in the attached EA, my determination is that a new EIS or supplement to the existing EIS are unnecessary and will not be prepared. The proposed action would not result in significant environmental impacts affecting the quality of the human environment greater than those addressed in the existing EIS.

Cindy Enstrom 11-30-01

Cindy Enstrom
Marys Peak Field Manager

Date

Comments regarding this environmental assessment should be received by the Bureau of Land Management, Marys Peak Resource Area, by January 7, 2002.

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ENVIRONMENTAL ASSESSMENT

I. PURPOSE AND NEED

A. Introduction

The Marys Peak Resource Area of the Bureau of Land Management (BLM) is proposing to pull over approximately one hundred live Douglas-fir trees into the main South Fork Alsea channel in Township 14 South, Range 7 West, Sections 25 and 36, Willamette Meridian, Benton County, Oregon. The proposed channel restoration work is located seven air miles southwest of Alpine, Oregon.

The proposed action would place live trees in the channel and provide a base for meeting the standard of "80 pieces/mile of large woody debris, >24 inch minimum diameter and > 50 feet in length" as identified in the *South Fork Alsea Watershed Analysis* (p.74-75, October 1995). Live trees adjacent to the channel would be pulled over, root wad attached, by teams of horses. As an alternative, mechanized equipment such as a "Spider" tractor were considered. However, the narrowness of the channel precludes safe and effective tree pulling from positions on the channel bed and most activity would occur in the adjacent riparian zone outside of the channel. Horse teams are preferred over mechanical methods because they can operate in the flood-plain and adjacent riparian zone with minimal disturbance to surface soils and processes.

This action will help to "restore the distribution, diversity, and complexity of watershed and landscape features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted;" one of the objectives identified in the Aquatic Conservation Strategy (ACS) on page 5-6 of the *Salem District Record of Decision and Resource Management Plan* (the RMP). All applicable direction in the Northwest Forest Plan is incorporated in the *RMP*.

This environmental assessment (EA) is tiered to the *Record of Decision and Standards and Guidelines for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (S&M ROD, January 2001) *Final Supplemental Environmental Impact Statement For Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (S&M FSEIS, November 2000). The S&M ROD amends a portion of the Northwest Forest Plan by adopting new standards and guidelines for Survey and Manage, Protection Buffers and other mitigating measures.

This environmental assessment (EA) is also tiered to the *Salem District Record of Decision and Resource Management Plan (RMP, May, 1995)* and the *Salem District Proposed Resource Management Plan/Final Environmental Impact Statement (PRMP/FEIS, Sept., 1994).* The *FEIS* analyzed broad scope issues and impacts to meet the need for forest habitat and forest products (p. 1). The *RMP* provides a comprehensive ecosystem management strategy for BLM managed lands in the Salem District in strict conformance with the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (April 1994).

The *RMP\ROD* was signed by the Oregon/Washington State Director of the Bureau of Land Management (BLM) on May 12, 1995. It is based on a comprehensive ecosystem management strategy for federal lands consisting of management objectives, land use allocations, and management actions/direction. This environmental assessment (EA) analyzes the proposed action, which would place live Douglas-fir trees into the main channel in Matrix, Late Successional Reserve and Riparian Reserve lands. Important ecological components within the project area would be retained.

The project would meet the management criteria as identified in Table 7 (p.42-46) of the LSRA. The lands affected by the project are in the riparian reserve and include the following goals: create stream channel complexity and place CWD in channels.

This EA is a site-specific analysis of the proposed action and alternatives prepared under general management guidance provided in the *RMP*. The *RMP* is available for review in the Salem District Office. A general description of the project area may be found in this EA under Description of Affected Environment/Environmental Consequences. Additional information about the proposed project is available in the Falls-over Project EA file.

B. Scoping

Efforts to involve the public in planning for the proposed action were as follows:

- The general area was shown as Matrix (GFMA), Late-Successional Reserve and Riparian Reserve in the Northwest Forest Plan and the RMP. These documents were widely circulated in the state of Oregon and elsewhere, and public review and comment were requested at each step of the planning process.
- A description of the proposal was included in the Salem Bureau of Land Management *Project Update* and mailed in September 2001 to more than 1200 individuals and organizations on the mailing list. No comments have been received to date concerning the issues and alternatives.
- A news release announcing availability of the EA for public review and comment was submitted to the *Corvallis Gazette-Times*. Letters with the same information were mailed to interested individuals.
- Copies of the EA are being mailed to individuals, interest groups and agencies.

C. Management Objectives by Land Use Allocation and Resource Program

As directed by the Northwest Forest Plan and the RMP, the primary management objectives for the project area are as follows:

Aquatic Conservation Strategy (RMP pp. 5-6)

1. Maintain and restore the distribution, diversity, and complexity of watershed and landscape features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.

Water and Soil Resources (RMP pp. 22-24)

1. Comply with State of Oregon water quality requirements to restore and maintain water quality and to protect recognized beneficial uses in watersheds.
2. Improve and/or maintain soil productivity.

Special Status and SEIS Special Attention Species (RMP pp. 29-31)

1. Protect, manage and/or conserve habitat for these species so as not to elevate their status to any higher level of concern.

Riparian Reserves (RMP pp. 9-15)

1. Provide habitat for special status, SEIS special attention and other terrestrial species.
2. Meet Aquatic Conservation Strategy (ACS) objectives.

Recreation (RMP p. 14)

1. Design and implement fish and wildlife habitat restoration and enhancement activities in a manner that contributes to attainment of ACS objectives.

II. ALTERNATIVES, INCLUDING THE PROPOSED ACTION

A. INTRODUCTION

This section describes alternatives identified by the interdisciplinary (ID) team that helped develop the Falls-over project.

B. SUMMARY OF ALTERNATIVES

Alternative 1 (Proposed Action)

Under the proposed action, 75 to100 Douglas-fir trees within 50 feet of the South Fork Alsea channel would be pulled over, utilizing teams of horses, into a 1.3 mile long section of the channel.

Alternative 2 (No Action)

Current trends and conditions would be maintained.

C. ALTERNATIVE 1 (PROPOSED ACTION)

1. Scoping Issues

The following issues concerning the proposed action were identified through public scoping and by an ID team of BLM natural resource specialists representing various fields of science (see Section V, Interdisciplinary Team Members). Issues that were considered but eliminated from further analysis are documented in Appendix B, Environmental Elements Review Summary.

Vegetation: Effects on native vegetation and special status/SEIS special attention species and habitats and noxious weeds.

Soils/Fuels: Effects on soil erosion. Effects on fuel loading and fire risk.

Water/Riparian: Effects on stream flow, channel conditions, water quality and aquatic conservation strategy objectives.

Wildlife: Effects on special status, SEIS special attention and other wildlife species and their habitats.

Fisheries: Effects on fisheries and their habitats.

Recreation: Effects on existing recreation resources in the area.

D. PROJECT DESIGN FEATURES, MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES

Project design features are operating procedures that would be included in the design and implementation of the proposed action alternative. They also include measures proposed to mitigate potential adverse environmental effects. The design features of this proposal are described below. All numerical units are approximate.

General

! Trees would be pulled over in random orientations relative to the stream channel. Some trees would be repositioned (i.e., pulled completely into the channel, one end cut to "drop" the tree into the channel) after being pulled over.
! Trees would be pulled over with root wads attached. In some instances, where this is not possible, trees would be felled utilizing a chain saw.
! No unstable or potentially dangerous trees would be left in a position that creates a safety hazard.
! Track animals will not be housed on the project site and significant accumulations of animal feces would be removed.
! Minor species (hardwoods, red cedar, hemlock, etc.) would be protected.
! Some small understory trees, shrubs and herbaceous species would be cut and/or trampled to provide access for the necessary equipment (teams of horses) to implement the project. The relatively small sized (average < 10 inches DBH) trees, and all other vegetative materials, would be left onsite. Efforts would be taken to keep disturbance of all understory species at the minimum level necessary to complete the project in an efficient manner.
! Where possible, trees that maintain bank stability would be protected.
! Where possible avoid felling trees that would damage minor conifers.
! Retain all felled trees on the site.

Botany/Survey and Manage

! Management of any newly discovered Survey and Manage Species known sites through any additional surveys would be accomplished in accordance with the *Record of Decision and Standards and Guidelines for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (S&M ROD, January 2001) and the *Final Supplemental Environmental Impact Statement For Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (S&M FSEIS, November 2000).
! Management of all survey and manage known sites located within the proposed project area would be accomplished in accordance with management direction listed on pages 8 through 14 of the standards and guidelines S&M ROD, January 2001. All of the known site locations would be withdrawn from any micro-climate altering activity.
! All exposed mineral soil areas (root-wad holes) would be grass seeded with Oregon Certified (Blue tagged) red fescue (*Festuca rubra*) at a rate equal to 40 pounds per acre.

- If the project is implemented with horses, which are imported from any other watershed than the South Fork Alsea, feces from the animals would be collected in plastic bags and removed from the watershed for disposal.
- Fall all red alders that become a safety hazard as they splinter and break from the weight and force of falling (pulled over) conifers.

Water/Riparian

- Follow ODFW Guidelines for Timing of In-Water Work.
- Efforts would be made to avoid increases in bank instability. Channel crossings would be minimized and located in areas where bank stability would not be compromised.

Soils and Fuels

- All State fire regulations would be complied with during project implementation.
- The project would occur during dry soil conditions prior to significant fall rain storms. If significant rainfall occurs during project implementation, the project would be halted until soils and surface cover have dried enough to avoid compacting or damaging soil surfaces.
- Bare mineral soil is highly erodible. Protect surface soil from excessive disturbance or displacement by minimizing removal of: organic top soil, litter fall, ground debris and / or vegetation.

- Minimize soil compaction by operating during periods of low soil moisture, and try to keep animals on top of surface vegetation and debris. If brush must be cut / cleared away for access, scatter suitable slash on the area where the animals will be walking to help support their weight and protect the soil surface
- Where work is done in the park or near trails or other access points, assess the fuels created by the pulling operation and fallen tree. If accumulations of fine fuels are created and present an increased risk for a fire start, these fuels should be reduced by lopping and scattering or removal to a safe disposal area.

Wildlife and Fisheries

- Action would occur after September 15 and before April 1.
- Do not pull down or cut any open grown wolf trees.
- Do not pull down or cut two adjacent dominant trees.

Recreation

- Project implementation within the campground and day use area would take place after their regularly scheduled closure in late September.
- No trees would be pulled over in a manner that would threaten recreational infrastructure or services (i.e. picnic sites, campsites, and trails). One end of full channel spanning trees would be cut and dropped into the river.
- No full channel spanning trees would be left within the recreational area.
- No unstable or potentially dangerous trees would be left in a position that creates a safety hazard.
- Minimize access points along the river to reduce horse impacts within the project area.
- Replant or re-vegetate areas disturbed by the logging operation.
- Place warning signs during operation.
- Place environmental education or interpretation signs explaining how or what is being done with the project.

Alternative 2: No Action

Project would not occur.

COMPARISON OF ENVIRONMENTAL CONSEQUENCES, BY ALTERNATIVE, FOR IDENTIFIED ISSUES.

Issue	Alternative 1	Alternative 2
Vegetation	There would be a minor disturbances of vegetation along animal access routes. Increased, dispersed canopy openings adjacent to the channel where Douglas-fir trees are pulled over. Remaining trees will fill openings within five years. Dispersed damage (i.e., broken limbs, tops and branches) to red alder canopy that lines the stream channel. Douglas-fir bark beetle infestations may occur in the pulled over trees.	Continuation of current conditions: 50 to 60 year-old Douglas-fir stands with a fringe of 50-60 year old Red Alder along the stream banks. The understory varies from open to fairly dense vine maple or hemlock reproduction. The shrub/forb layer is mostly dominated by salal or sword-fern with some open moss covered areas. The dominant moss in these areas is *Eurhynchium oreganum*.
Soils	Minor residual compaction and surfaces disturbances within RMP standards.	Continuation of current conditions: deep, uncompacted soils with a thick upper layer of duff.
Water/Riparian/Fish	Short-term, variable increase in stream turbidity may occur. See ACS Objectives (pp. 29 to 31) Short term impacts to riparian canopy anticipated. No adverse impacts to fish or fish habitat anticipated.	Continuation of current conditions: poor habitat and WQ conditions would continue for next several decades. Continuation of current conditions and trends. Continuation of current trends
Wildlife	Project would be of a disturbance nature only. No suitable habitat of older forest species would be altered.	Continuation of current habitat conditions and trends.
Recreation	Project may increase vegetation disturbances caused by increased hiking activity. Visual impacts to recreation site users will be high until regrowth of vegetation. May cause long term erosion of hiking trails and recreation sites that exist along the river causing increased site maintenance. Root wads left around Alsea Falls could cause pooling and undercutting of the bank.	Continuation of current habitat conditions and trends.

III. DESCRIPTION OF THE AFFECTED ENVIRONMENT/ ENVIRONMENTAL CONSEQUENCES

This section describes the environmental features affected by the proposed project and associated activities, and the environmental consequences which would result from implementing the alternatives. This information is summarized in Appendix B. Resource values are not described in this section if there are no anticipated site-specific impacts, site-specific impacts are considered negligible, or the cumulative impacts described in the existing RMP EIS are considered adequate.

In accordance with statutes, regulations, and executive policies, some resource values and uses must be reviewed in all environmental assessments. A list of these resources and the results of the review for the project area are presented in Appendix B.

A. GENERAL

The proposed project area is located in Sections 25 and 36, T. 14 S., R. 7 W., W.M., in Benton County. The project area is in the South Fork Alsea River Watershed. Land use allocations for the project area are Matrix (General Forest Management Area [GFMA]), Late- Successional Reserve and Riparian Reserve.

B. TOPOGRAPHY

The project area is situated primarily on a large flat with no distinctive aspect. Elevation varies from 840 to 1,300 feet. Slopes range from 0 to 35 percent, with small areas of up to 50 percent adjacent to the project area.

C. VEGETATION

Issue: Effects on native vegetation and special status/SEIS special attention species and habitats and noxious weeds.

Affected Environment

The proposed project is located in a western hemlock climax forest and traverses through several aged class stands ranging from 30 years to 60 years old. The majority of the project is located in 50 to 60 year-old Douglas-fir stands. The over-story in the uplands of the project area is dominated mostly by Douglas-fir and lesser amounts of western hemlock and western red cedar. The over-story immediately adjacent the aquatic system is mostly dominated by red alders and/or conifers with lesser amounts of big leaf maples.
The under-story in the project area is mostly comprised of vine maple, salmonberry, California hazelnut and oceanspray. Grand fir seedlings are common in a few sites within the project area. The under-story density varies from open to thickets of shrubs.
The shrub and forb layers are mostly dominated by salal, sword-fern, Oregon grape and in

some areas open with moss (*Eurhynchium oreganum*) covered duff.

The major plant grouping as listed in the Salem District Proposed Resource Management Plan/Final Environmental Impact Statement (V.1, chapter 3, pp.29-32) is the Douglas-fir/Red Alder/Salmonberry grouping which occurs on the west slopes of the Oregon Coastal Mountains.

More specifically the area is comprised of a mosaic of the following western hemlock plant associations. Some micro-sites within the project area may be placed within the grand-fir plant associations by splitters but have been retained within the western hemlock plant associations here.

The *w. hemlock/salmonberry* plant association occurs on middle and lower slopes on well watered sites. soils are moist much of the year, but are not as wet or poorly drained as in the devil's club association. Salmonberry occurs along watercourses and continues upslope until a slope break changes subsurface water abundance.

The w. hemlock/Oregon grape plant association is common at upper elevations to upper-slopes with well-drained soils. Soils are either shallow or relatively deep but rocky.

The w. hemlock/salal plant association is common on upper slopes and ridges. The soils are moderately deep and well drained.

The w. hemlock/Oregon grape/salal plant association is mostly a transition area between the above two associations. Its environment is similar to the W, Hemlock/Oregon grape association. It occurs at upper slopes with well drained soils. The soils tend to be less rocky than the W. Hemlock/Oregon grape association and shallower than the W. Hemlock/Oregon grape/salal association.

The w. hemlock/sword-fern plant association is common throughout the forest. It occurs on steep and lower slopes or, less often, on benches and alluvial flats. Soils are well-drained but receive continuous subsurface moisture from upslope. Soils are usually deep and rich in organic matter.

The w. hemlock/vine maple/sword-fern plant association is most common on relatively warm, well-drained middle and lower slopes. This association is similar in many respects to the W. hemlock/sword-fern association.

Vascular plants:

Inventory of the project area for survey and manage vascular plant species was accomplished in accordance with the survey protocols as described on page 3 of survey Protocols for survey and Manage strategy 2 Vascular Plants, version 2.0, December 1998. Specific surveys for all listed special status and special attention vascular plant species were accomplished on July 17 and September 11, 18 and 25th, 2001.

A) Special Status Species

There are no “known sites” of any special status vascular plant species within the project area nor were any found during subsequent surveys.

B) Special Attention Species

There are no “known sites” of any special status vascular plant species within the project area, nor were any found during subsequent surveys.

Lichens:

Inventory of the project area for survey and manage lichens were accomplished in accordance with the survey protocols as described within the Survey Protocols for Component 2 Lichens version 2.0, March 12, 1998. Inventories for newly assigned lichen species into categories "A" and "C" of the Record of Decision and Standards and Guidelines for amendments to the Survey and Manage, Protection buffer, and other Mitigation Measures Standards and Guidelines (S& M ROD) that currently have no protocols were surveyed using the intuitive control method. However, pre-disturbance surveys for these species may not be required for up to two years as described on page 23 of the S&M ROD. Specific surveys for all listed special status and special attention lichen species were accomplished on July 17 and September 11, 18 and 25th, 2001.

A) Special Status Species

There are no “known sites” of any special status lichen species within the project area, nor were any found during subsequent surveys.

B) Special Attention Species

There are no "known sites" of any special attention lichen species within the project area, nor were any found during subsequent surveys.

Bryophytes:

Inventory of the project area for survey and manage bryophytes were accomplished in accordance with the survey protocols as described in Survey Protocols For Survey and Manage Component 2 Bryophytes, version 2.0, December 1997 and Survey Protocols for Protection Buffer Bryophytes, version 2.0, December 1999. Specific surveys for all listed special status and special attention bryophyte species were accomplished on July 17 and September 11, 18 and 25th, 2001.

A) Special Status Species

There are no “known sites” of any special status bryophyte species within the project area, nor were any found during subsequent surveys.

B) Special Attention Species

There are no "known sites" of any special attention bryophyte species within the project area, not were any found during subsequent surveys.

Fungi:

Inventory of the project area for survey and manage fungi species were accomplished in accordance with the survey protocols as described in Survey Protocols for (*Bridgeoporus nobilissimus*) Fungi, version 2.0, May 1998. Specific surveys for all listed special status and special attention fungi species were accomplished on July 17 and September 11, 18 and 25th, 2001.

A) Special Status Species

There are no “known sites” of any special status fungus species within the project area, nor were any found during subsequent surveys.

B) Special Attention Species

There are no "known sites" of any special attention fungus species within the project area, nor were any found during subsequent surveys.

Noxious Weeds:

The following noxious weeds are known from within or adjacent the project area, Tansy ragwort (*Senecio jacobaea*), bull and Canadian thistles (*Cirsium vulgare* and *C. arvense*), St. John’s wort (*Hypericum perforatum*) and Scot’s broom (*Cytisus scoparius*).

Environmental Consequences

The proposed project would pull over approximately 100 conifers along the South Fork Alsea River. The conifers would remain on site as downed woody material for the aquatic system and the adjacent upland areas. Target trees may not always fall in the direction and/or location as planned but would provide valuable downed woody material. Red alder trees would become damaged and/or killed were targeted conifer trees are pulled over toward areas where the canopy is dominated by red alder. Additional red alder trees may be felled where they pose a safety hazard or hazardous situations.

Douglas-fir bark beetle infestations may occur in the pulled over trees. Some additional standing, healthy or weakened trees within the project area may be killed in subsequent years by beetle infestations. It is not anticipated that any widespread infestation would occur through pulling over 100 conifer trees. As the density of pulled over trees in a given area increases so would the risk of a secondary infestation within the stand. However, it is anticipated that few additional trees within the project area would be killed in subsequent years through bark beetle infestations.

<u>Vascular Plants, lichens, bryophytes and fungi</u>:

The proposed action would not affect any special status or special attention vascular plant, lichen, bryophyte or fungi species since none were found during surveys nor are known from the project area.

<u>Noxious weeds</u>:

These species are priority III noxious weeds and are well established and widespread throughout the Mary's Peak Resource Area and the Salem District. Eradication is not practical using any proposed treatment methods. Grass seeding exposed soil areas tends to decrease the establishment of noxious weeds. Any adverse effects from noxious weeds are not anticipated. The risk rating for the long-term establishment of noxious weed species and consequences of adverse effects on this project area is low.

<u>Alternative 2:</u> (No Action:)

No conifer trees would be pulled over and killed. No red alder trees would become broken or damaged from felled conifer trees. The project area would remain low in downed woody materials.

No Douglas-fir bark beetle habitat would be created.

Special Status Species:

The proposed action would not affect any special status vascular plant, lichen, bryophyte or fungi species since none were found or are known from the project area.

Special Attention Species:

The proposed action would not affect any special attention vascular plant, lichen, bryophyte or fungi species since none were found or are known from the project area.

Noxious Weeds:

No mineral soil would be exposed from the proposed action and any existing non-native or noxious weed species would remain low within the project area. Grass seeding would not be necessary to reduce erosion and abate the establishment of any non-native or noxious weeds.

SOILS/FUELS

ISSUE: What effects would employing draft animals to pull over large trees have, on long-term soil productivity and soil erosion potential ?

ISSUE: What effects would pulling over scattered, large trees, have on fuel loading and fire hazard?

Soils/Fuels: Affected Environment
General description of soil characteristics

A variety of similar, highly productive soils, prevail in the area of the proposed action. There are alluvial silts and sands in the areas of close proximity to the stream flood plains and terraces. The upland areas have a variety of predominantly clay loam and gravely loam textured soils. Representative soil series are: Bohannon gravely loam, Blachly clay loam, Bohannon-Slickrock gravelly loam, Klickitat gravelly clay loam and Marty silty clay loam. Much of the area adjacent to the streams is classified as Sandy alluvial land, Loamy alluvial land, or Colluvial and Alluvial land.

These soils are well drained with the exception of a few marshy areas adjacent to the stream across from Alsea Falls Park in SW ¼ of section 25. With the exception of the sandy alluvial soil and Colluvial and Alluvial land, all of these soils have a significant fine particle (silt and clay) component.

The fine particle component causes these soils to be easily compacted when moist. When compacted, the soil pore spaces are crushed smaller and /or become sealed. Under this condition, water infiltration rates will decrease resulting in a higher likelihood of overland flow during storm events. On bare soil, overland flow will result in increasing rates of surface soil erosion as slope angle increases.

The major management concern with the fine textured soils is the risk of soil erosion on bare compacted sloping sites. The silty and sandy alluvial soils are less subject to the effects of compaction on soil pore spaces and also are generally flat to very low gradient; risk of overland flow and serious erosion is very low.

It is unlikely that the proposed action will increase the risk for surface erosion on these sites. Compaction of the surface soil will be minor and dispersed so as to be negligible. The amount of disturbance to surface soils and vegetation will also be very slight. The major disturbance will occur where the root wad pulls out of the ground and exposes a bare soil pocket. On flat stable ground, such as this project area, this disturbance is unlikely to lead to surface erosion and stream turbidity increases. Effects on long term soil productivity are expected to be negligible due to the narrow, dispersed zone of impact.

General description of fuel characteristics

The proposed project passes through a range of fuel types from young Douglas-fir plantations to mature timber stands with remnant old growth trees. The predominant stand type is low elevation 40 to 60 year old Douglas-fir and hemlock with associated coast range understory shrub component. There are scattered old down logs from logging since the 1940's and scattered blown down trees. The larger fuels are in all stages of decay. Fuels presently on the sites are typical for the respective types, there are no unusual or extreme high risk fuel types. Fuel model for most of the stands is a model 8 - timber litter. The recently thinned stands are a combination of Model 8 and model 11 - light logging slash. The estimated total average dead fuel loading existing on site range from 10 to 25 tons/ acre.

The proposed action could slightly increase fuel loading and the risk of fire occurrence during implementation and / or after the trees are on the ground / in the stream. During the pulling operation and clean up, the use of chain saws when fuels are dry poses a fire risk, minor if precautions are taken. The creation of dead fuels from the tree crowns will pose a minor increase in risk but this is expected to diminish within a few years. Most of the project activity will occur in isolated spots away from trails or other points of human activity. Where trees are pulled in the Alsea Falls Park or near any trails or access points, fuels created should be assessed for fire risk and mitigated by removal or scattering if increased risk indicates a need to mitigate.

ENVIRONMENTAL CONSEQUENCES / RESIDUAL IMPACTS / MITIGATING MEASURES

Under the preferred alternative, the extent of any disturbed, displaced or compacted soil will be restricted to the dispersed, discontinuous areas where the draft animals walk. The degree of soil disturbance, displacement or compaction is expected to be very low. Affects on site productivity would be unmeasurable or nil. Soil erosion is also expected to be very low to non-existent. Minor quantities of soil may enter the stream primarily from root wads that get positioned in or immediately adjacent to the stream. Fire risk can be mitigated in large part by following the suggested design features and by the fact that this entire project is located in or immediately adjacent to a perennial stream and the minor amounts of discontinuous slash created, will be mostly away from areas people frequent.

E. Hydrology/Stream Channels/Water Quality

Issue: Effects on stream flow, channel conditions, water quality and aquatic conservation strategy objectives.

Affected Environment

Project area climate and hydrology-

The project area is located in the Oregon coast range at an approximate elevation of 800 feet (244 m). This elevation range is rainfall dominate and not normally subject to rain on snow events (ROS). ROS events have the potential to increase peak flows during winter or spring storms. This area receives approximately 50-60 inches of rain annually and has a mean 2-year precipitation event of 4.5 to 5.0 inches in a 24-hour period (N.O.A.A. Precip Frequency Atlas for Oregon, Volume X. http://www.wrcc.dri.edu/pcpnfreq.html).

The primary stream draining the project area is the South Fork of the Alsea river (SF Alsea), cataloging unit #17100205 (U.S.G.S., 1974). The project area is contained in the upper South Fork Alsea watershed which is approximately 9,500 acres or 14.8 sq-miles in drainage area. Several South Fork Alsea tributaries, including Coleman Creek, Williams Creek, and Fall Creek, drain the area.

Project area stream channels-

The SF Alsea main channel (from Alsea Falls to the confluence with Williams Creek) is primarily a Rosgen F stream type: <1% gradient, with high entrenchment and width/depth ratios and low sinuosity (Rosgen,1996). It is moderately to highly incised in alluvium and appears to have poor bank stability and moderate to high levels of bank erosion in portions, particularly below the confluence with Williams Creek.

An F stream type in this setting (low gradient, unconfined alluvial valley) is often an indication of a channel in an adjustment process following a dramatic change in one or more critical variables such as stream bank stability, sediment supply, stream flow regime or in-channel resistance. Much of the channel reach in the project area is "functional at risk" with low levels of large wood (U.S.D.I., 1998). The quantities of large wood in the project reach have declined since 1996, indicating a downward trend in channel functional condition.

Upstream from Williams Creek, channel stability in the main channel increases and bank erosion decreases. The channel bed is composed primarily of small gravels, sand and silts on top of sandstone bedrock. Adjacent banks are primarily alluvial and consist of sand, silt and gravels. Quantities of large wood increase towards levels normal for un-managed channels in the coast.

Hypothetically, forest management activities in the late 1950s and 1960s included large wood removal from the channel (i.e., reducing channel resistance), harvest in the riparian zone, and the trapping of beaver. These activities, together with several large flood events during that time period, could have initiated the channel instability that is evident today.

There are three main tributary channels in the project area: Fall Creek, Coleman Creek and an unnamed third order channel that enters the main South Fork Alsea in section 36 just upstream from Coleman Creek. For the purposes of this report, the unnamed channel will be referred to as the IP Miller reach. No fish habitat survey data was located for these channels so assessments are based on observation and professional judgement.

Fall Creek enters the project area at its confluence with the main SF Alsea channel just downstream from the Alsea Falls campground footbridge. It is a Rosgen B3 channel type: moderately incised, 2-4% gradient, with gravel/cobble substrate. These channel types tend to be stable and resistant to disturbance. Fall Creek in this reach appears to be properly functioning with a good supply of substrate, moderate meander, stable banks, and good water quality. It also appears to have a fairly large sediment supply (typical for tributaries in this area) and only moderate quantities of large wood, also typical for these streams in a heavily managed forest landscape.

Coleman Creek is also a Rosgen B3 and appears to be in functional condition with stable banks, good water quality and moderate levels of large wood. Coleman has a very large supply of substrates, mostly cobbles and gravels, which appear to be the result of debris torrents and landsliding on higher gradient slopes in the channel's headwaters dating to the 1960s. This bed-load material, together with the smaller supply from Fall Creek, appear to be the main supply of cobbles and gravels to the SF Alsea in the project reach.

The unnamed tributary in section 36, the IP Miller reach, is a "G4" channel type: low gradient (<1%), high meander, deeply entrenched in alluvial materials. The channel at its confluence with the SF Alsea main, and for approximately 0.25 mile upstream, is unstable and appears to be "functional at risk" with several head cuts and severely eroded banks.

Channel substrates are predominately gravels and fines. Above the unstable lower reach, IP Miller typifies a Rosgen "E" type: low gradient, high meander, low width/depth ratio, slightly entrenched. These channel types are stable but highly sensitive to disturbance. It appears that channel instability emanates from the SF Alsea main stem where down-cutting since the 1960s may have initiated an unstable grade and head cutting in this highly sensitive tributary channel.

Project area water quality and beneficial uses-

Grab sample turbidity data and channel substrate samples that have been collected in this watershed indicate that fine sediment (<2mm in diameter) levels in stream substrates and those transported as suspended sediment during winter storm events are within the range of natural variability for coast range streams. It should be noted that the upper SF Alsea watershed has large stretches of low gradient, alluvial channel with active beaver populations. These conditions are conducive to the capture, storage and transport, particularly during storm events, of high concentrations of fine sediment. In addition, bank erosion in the project reach may be a major source area for fines in the SF Alsea main.

Three sets of substrate samples in the upper SF Alsea main channel were sampled by bulk and sieved (methodology from Klingeman and Emmett, 1982). Material <2mm (sand and silts) in subsurface samples was 20%, 20% and 24% respectively. In one study of stream substrates in twenty-one undisturbed Oregon coastal streams, fines averaged 19.4% and ranged from 10.6 to 29.4% (Adams and Beschta, 1980), indicating that the S F Alsea substrate samples are near the mean of samples from undisturbed watersheds. However, these samples were upstream from the project reach where sampling has yet to occur.

Occasional turbidity grab samples have been collected in the upper watershed since 1995 during winter storm events (U.S.D.I. BLM, 2000). Although a reading of 45 Nephlemetric Turbidity Units (NTU) on the mainstem and 100 NTU on Coleman Creek was collected during the 1996 flood, these high levels of turbidity are short-lived. The upper SF Alsea turbidity values ranged from a minimum of 1 NTU to a maximum of 100 NTU with an average median value of 4 NTU and standard deviation of 13 NTU. These levels are well below the maximum NTU levels found on one study of Mill Creek in the Alsea river basin (Beschta,1979) and the median value of 4 NTU is well below the 30 NTU standard Oregon DEQ set for the Umatilla sub-basin Total Maximum Daily Load assessment (ODEQ, 1999).

Although data indicates that fine sediment supply and transport are within the range of natural variability in this watershed, sampling to date has been infrequent. Currently there is not enough sediment data in the watershed to provide a detailed representation of water quality conditions. In addition, other observations of channel and hill slope conditions suggest that fine sediment supply and transport in the watershed may be high. In response to these concerns, physical and biological monitoring in the upper South Fork Alsea channel is ongoing.

Continuous stream temperature measurements were collected at several sites on the upper SF Alsea as well as on lower Fall Creek, Coleman Creek and the IP Miller reach in the summers of 1999-2001 (methods from the Water Quality Monitoring Guide Book, Version 1.03, from the Oregon Plan for Salmon and Watersheds).

Summer stream temperatures in the SF Alsea project area were above the state standard of 17.8° C at all of monitoring sites for several days during both years. However, temperatures showed a cooling trend between the site highest in the watershed at river mile 15 and the lower site near Fall Creek in the Alsea Falls recreation area. Spot measurements above tributary confluences showed that tributary channels such as Fall Creek, which maintained summer stream temperatures well below the state standard in both years, are cooling the main stem of the SF Alsea in the project area.

Based on field and aerial photo observation, current stream side vegetation on tributary channels in this area is likely adequate to shade surface waters during summer base flow. These observations are collaborated by the summer stream temperature data collected in 1999-2000 (they are well within the range of natural variability for mid-coast Oregon). Continued implementation of the North West Forest Plan will likely maintain the current stream temperature regime on public lands in the watershed (or possibly lead to further cooling along the main channel).

Due to the simplified and widened main channel on the upper SF Alsea, riparian vegetation is less effective at providing shade. In addition, portions of the upper main channel flow through open meadow settings and are exposed to direct sunlight for much of the day during summer. Stream temperature may also be above standards in response to extensive beaver dam pools scattered throughout the main stem. Reductions in stream temperatures will probably not occur on the main channel without improvements in channel morphology (i.e., deeper, narrower channel with increased numbers of wood jams, wood cover and deep pools) in some reaches and recovery of older forest characteristics (i.e., multiple canopies, mixed deciduous and conifer) along the banks and adjacent river terraces. However, in response to the high concentration of low gradient, open channel reaches in this watershed it is possible that ambient summer stream temperatures have always been higher relative to other coast range streams.

Additional water quality parameters (e.g., nutrients, dissolved oxygen, pesticide and herbicide residues, etc.) are unlikely to be affected by this proposal and were not reviewed for this analysis (U.S.E.P.A.,1991).

The ***Oregon Department of Environmental Quality's*** **(DEQ)** 1998 303d List of Water Quality Limited Streams (http://waterquality.deq.state.or.us/wq/303dlist/303dpage.htm) is a compilation of streams which do not meet the state's water quality standards. The list has been approved by the Environmental Protection Agency. Neither the SF Alsea or its tributaries are listed in the report. However, the Alsea River is listed as not meeting water quality standards for summer stream temperatures from the mouth to the north/south confluence.

The DEQ has also published an assessment, the 319 Report, which identifies streams with potential non-point water pollution problems (1988 Oregon Statewide Assessment of Nonpoint Sources of Water Pollution). The upper SF Alsea and its tributaries were identified as either having no problem or lacking data (the report does not discriminate between no problem and no data). The lower SF Alsea (but not the upper) was identified as having possible "moderate sedimentation" problems. However, no description of the problem has been offered and no supporting sediment data has been located (i.e., the assessment was based on observation).

Beneficial uses of surface water from the project area are displayed in the following table. There are no known municipal or domestic water users in the project area. Irrigation and livestock watering occur in the Alsea valley, near the town of Alsea, approximately fourteen kilometers downstream from the project area. Additional beneficial uses of the stream-flow in the project area include resident fish, recreation, and esthetic values.

Beneficial uses associated with streams in the project area.

Stream (Watershed)	Project Action	Beneficial Use	Distance from Project Action	Information Source
South Fork Alsea	Tree placement in channel.	Anadromous fish	Immediate (below falls)	BLM
		Resident fish	Immediate	BLM
		Domestic use	> 10 mile	WRIS*
		Irrigation/live-stock watering	5 miles	WRIS*

* WRIS = *Water Rights Information System* of the Oregon Department of Water Resources

Environmental Consequences

Alternative A, Proposed Action

Summary

Measurable effects to stream flow, channel morphology, and water quality as a result of this proposed action are anticipated. By changing channel geometry, the proposal may alter low flow or peak flow events, increase bank erosion, alter sediment transport regime and alter summer stream temperatures and/or levels of dissolved oxygen from the current regime. These effects are anticipated and are expected to meet Aquatic Conservation Strategy objectives (ACS) and to lead to an overall improvement in channel and water quality conditions for aquatic species.

In conclusion, this proposal is expected to support attainment of the stream flow, basin hydrology, channel function, and water quality objectives of the ACS.

Streamflow and Channel Morphology

Alterations in the capture, infiltration and routing (both surface and subsurface) of precipitation, as a consequence of the falling of live trees, are theoretically possible. Some surface runoff near the active channel may be routed directly into the channel from trees which have fallen across streambanks and compacted the surface In addition, some compaction and disturbance of surface soils will likely result from the horse teams. However, the flat grade in the area and the deep duff and vegetative layers covering the soil surface are expected to keep disturbance to a minimum. At these low levels of disturbance dispersed over a large area measurable alterations to streamflow are highly unlikely. For this same reason, increases in surface erosion and fine sediment inputs to the channel, from disturbed surfaces adjacent to the active channel, are unlikely to be significant.

Falling trees into the South Fork Alsea channel is anticipated to directly effect streamflow and channel morphology by altering channel geometry, reducing stream velocity and redirecting flow around the obstructions. Site specific affects can be anticipated, but cannot be precisely predicted. These include: reductions in stream gradient and flow velocity upstream of obstructions with consequent deposition of suspended materials and a fining of (i.e., reduction in the medium particle size) of channel substrates; bed scour and increased velocities downstream of obstructions; increased bank erosion in areas where logs divert stream flow into the bank; reductions in bank erosion in areas where logs divert flows away from the banks.

Overall, the increase in large wood in the channel is expected to decrease transit time for organic and inorganic materials moving through the system, increase hydraulic "complexity," increase bank erosion (for the first several years), increase the quantity of sediment transported in the channel but reduce its rate of transport, increase sediment storage, increase complexity and alter the ratio of bed forms (i.e, pools and riffles), and increase over bank flood flows.

All of these affects are anticipated to be highest immediately after project implementation with a gradual diminution until a form of dynamic equilibrium is reached. Again, this can be anticipated but not precisely predicted because timing of this process will be highly dependent upon the timing, quantity and size of winter peak flow events, which are stochastic in nature. In addition, overtime the retained logs are expected to trap wood moving downstream; trees in the riparian canopy will continue to grow, age and eventually fall into the channel. This will result in continued increases in the quantity and complexity of wood in the channel over the next century. It is anticipated that these alterations to channel morphology and hydraulics will directly increase habitat diversity, aquatic community complexity and structure, and the diversity of aquatic organisms to the benefit of aquatic species in the South Fork Alsea, as documented in research studies (Wallace et al., 1995).

Water Quality

Sediment Delivery to Streams and Turbidity

Two natural erosion processes, mass wasting and surface erosion, are the primary sources for sediment delivery to streams. Mass wasting in this watershed is generally limited to hillslopes with gradients steeper than 60% (SF Alsea WSA) and is unlikely to be effected by this proposal. Surface erosion processes in the Oregon coast range are nearly non-existent on forested land due to the high infiltration capacity of native soils, heavy vegetative growth and deep layers of surface organic material ("duff"). However, practices that compact the soil surface, remove the "duff layer" or concentrate runoff may lead to surface erosion with the potential for delivery to streams and a degradation of water quality.

Best management practices (BMPs) and mitigation measures are proposed to eliminate and/or limit acceleration of sediment delivery to streams in the project area. These include limiting activity to dry soil conditions, limiting animal movement (in particular stream crossings), to the lowest level necessary to efficiently complete the project, and seeding of any surfaces outside the channel that have been exposed and have potential to erode. Together these practices are expected to nearly eliminate any measurable additions of sediment to the stream channel as a result of project implementation.

In addition to mass wasting and surface erosion, the greatest source for in stream sediment is bank erosion. It is anticipated that additions of logs into the channel will lead to an increase in bank erosion as obstructions redirect stream flow into adjacent banks.

Bank erosion is already at high levels in this channel; a direct result of channel incision and the consequent increase in stream power at high flows focused on banks. Channel widening with increased bank erosion is a common process that occurs in unstable streams that have incised into alluvial valleys (Rosgen, 1996). It can be anticipated that bank erosion will continue in the South Fork Alsea, with or without the proposed project, until the channel has achieved a gradient, sinuosity and geometry that is in equilibrium with stream flow, sediment transport and channel roughness elements. It is expected that additions of wood will speed this process and this may result in short term increases in sediment supply and turbidity, especially during winter storm events. However, increases in wood (channel roughness) will slow sediment transport rates and increase storage of sediment and organic material which will be trapped behind obstructions and deposited in bars or on flood plains. These processes, overtime, are expected to reduce fine sediment transport in this channel and improve water quality.

To mitigate potential increases in bank erosion due to additions of wood, placement of trees will be done with consideration for bank erosion processes. Attempts will be made to fall trees in a manner to direct flows away from unstable banks.

Stream Temperature

Shading along all the tributaries in the project area is currently adequate and this proposal will not substantially alter stream side shading here. Forest density and hence shading in the riparian zone adjacent to the mainstem South Fork Alsea will be left virtually unaltered under this proposal. It is anticipated that small holes in the riparian canopy (less than 10 sq-meters) will occur in the vicinity of trees that are pulled over. These will be dispersed along both streambanks for over a mile of channel length. While this has the potential to slightly increase the amount of water surface exposed to direct solar radiation, it is not expected to result in an increase in stream temperatures because the fallen trees will also provide additional shading directly over the channel and riparian canopies will quickly fill in where additional light is available. Over time, increases in the quantity of stored substrates and pools may lead to a slight decrease in summer stream temperatures in the main channel. Stream temperature monitoring will be continued in this channel following project implementation to quantify any affects.

F. WILDLIFE/FISHERIES

Issue: The pulling down or cutting of approximately 100 Douglas-fir (*Pseudotsuga menziessii*) trees in northern spotted owl (*Strix occidentalis caurina*) and marbled murrelet (*Brachyramphus marmoratus*) designated critical habitat may affect these Special Status species. This action may also impact the red tree vole (*Phenacomys longicaudus*), a Special Attention Survey and Manage species.

Issue: Effects on fisheries and fish habitat.

Wildlife: Affected Environment and Environmental Consequences

The project area occurs in mid-seral (55 years) forest habitat and runs along a 1.5 mile reach of the South Fork Alsea River (see attached map). The project is proposed to begin after the Alsea Falls Recreation Area is closed for the season, which occurs around October 1 each year. The land uses within the action area are as follows; Riparian Reserve (RR), Late-Seral Reserve (LSR), Matrix, northern spotted owl critical habitat, marbled murrelet critical habitat, and Alsea Falls Recreation Area. Human activity and noise levels are much higher in the project area than in adjacent forest areas outside the recreation area boundary.

There are no known owl or murrelet sites within 1.5 miles of the action area, however, unsurveyed suitable murrelet habitat occurs within 0.25 mile. The trees to be felled, and the stand in which they occur are not suitable owl or murrelet nesting habitat due to their young age and consequent lack of nesting structure. The stand is currently functioning as owl dispersal habitat.

The felling of approximately 100 trees along a 1.3 mile strip of riparian reserve in this dense mid-seral stand will not destroy or adversely modify critical or dispersal habitat for the owl or the murrelet.

Since the stand is potential red tree vole habitat, each tree marked for felling was surveyed in September 2001 for red tree vole nests. No stick nests were found in the marked trees or in the adjacent canopy

Recommendations & Determinations

The following mitigation measures should be incorporated into the design features of the project:

1. Action should occur after September 15 and before April 1.
2. Do not pull down or cut any open grown wolf trees.
3. Do not pull down or cut two adjacent dominant trees.

If the above mitigation measures are followed, then this action will have no affect on the northern spotted owl or the marbled murrelet.

Fisheries: Affected Environment

All streams within the proposed project area, including the South Fork Alsea River are upstream of Alsea Falls, which is the upstream limit of anadromous fish distribution in the South Fork Alsea River basin. The South Fork Alsea, above Alsea Falls, provides habitat for cutthroat trout. The project area has very limited cover and habitat complexity for fish. The substrate is dominated by bedrock with some gravels, sand and fines. The river channel is straight and water depth is generally shallow. Local tributaries have more complex channels and are dominated by gravels and cobbles. However bed load materials are quickly moved through the project area due to a straight bedrock channel.

Coastal coho salmon are currently a species of concern. The BLM will continue to consult with the National Marine Fisheries Service on all actions taken under this proposal.

Environmental Consequences

Short term impacts may occur due to stream bank scouring. This would most likely occur during the first bank full event and would be taken down stream. This impact would not adversely affect fish other than increasing turbidity short term, during large rain events. Immediate benefits to fish habitat would occur in this reach of the South Fork Alsea River. Logs would provide structure for in-stream diversity, slow water velocity, create pools, increase pool depth and trap gravels for spawning habitat. Pools formed by structures would provide summer and winter rearing habitat and hiding cover. Deeper pools would reduce water temperature during low summer flows. The structures would also slow the velocity of winter flow so small fry would not be prematurely washed down stream.

EFH Determination

This project is covered under the Essential Fish Habitat (EFH) consultation for programmatic activities, that could adversely affect coho and chinook salmon EFH, dated April 4, 2001. The BLM will obtain a grant extension of the instream work window from the Oregon Department of Fish and Wildlife (ODFW).

<u>Alternative 2, (No Action).</u>

This alternative would result in no change to the affected environment.

G. RECREATION

Issue: Effects on existing recreation resources in the area.

Affected Environment

The project area is a forested setting with moderately flat topography. The adjacent Alsea Falls Recreation Area (BLM) provides overnight camping, picnicking, fishing, hiking, swimming, biking, and sightseeing. The area is also used by the public for mushroom gathering, off-highway vehicle use, target shooting, hunting, wildlife observation and nature study.

The paved South Fork Alsea Backcountry Byway which accesses the project area connects the Willamette Valley to Highway 34, a major route for travelers to the Oregon Coast. Concentration of users ranges from low to high depending on the season. Maximum use occurs on sunny summer weekends and holidays. Approximately 15,000 visitor days occur per year within the adjacent recreation sites. Isolation from the sights and sounds of humans exists, with the opportunity to interact with the natural environment.

Environmental Consequences

Alternative 1, (Proposed Action)

The Alsea Falls Recreation Area would continue to be managed as it is currently. The seasonal operation of facilities late May to early October will not change. Year round foot and bicycle access would continue to be allowed. Pooling could increase swimming spots and possibly allow fishing above the falls.

Trees across the river would increase attractive nuisances and would be cut down and placed in the river. Signs would be placed to warn of hazards and inform visitors of when and why the project is being implemented. Within the recreation sites, trees would be scattered to reduce visual impacts that should retain the integrity of expected aesthetic values at Alsea Falls. Aesthetics of the area would be altered until natural vegetation returns. Too much sun exposure could increase blackberry growth. Some larger trees in the area would be pulled over decreasing the public's perception of the forest.

Alternative 2, (No Action)

This alternative would result in no change in the type of recreation opportunities or experience available at Alsea Falls Recreation Project Area.

IV. MONITORING

Monitoring would be accomplished through contract administration and in accordance with monitoring guidelines in Appendix J of the RMP. In addition, effectiveness monitoring to measure project effects on water quality, channel morphology and aquatic species would be implemented (see *Falls-over Project: Effectiveness Monitoring Plan* in the EA file).

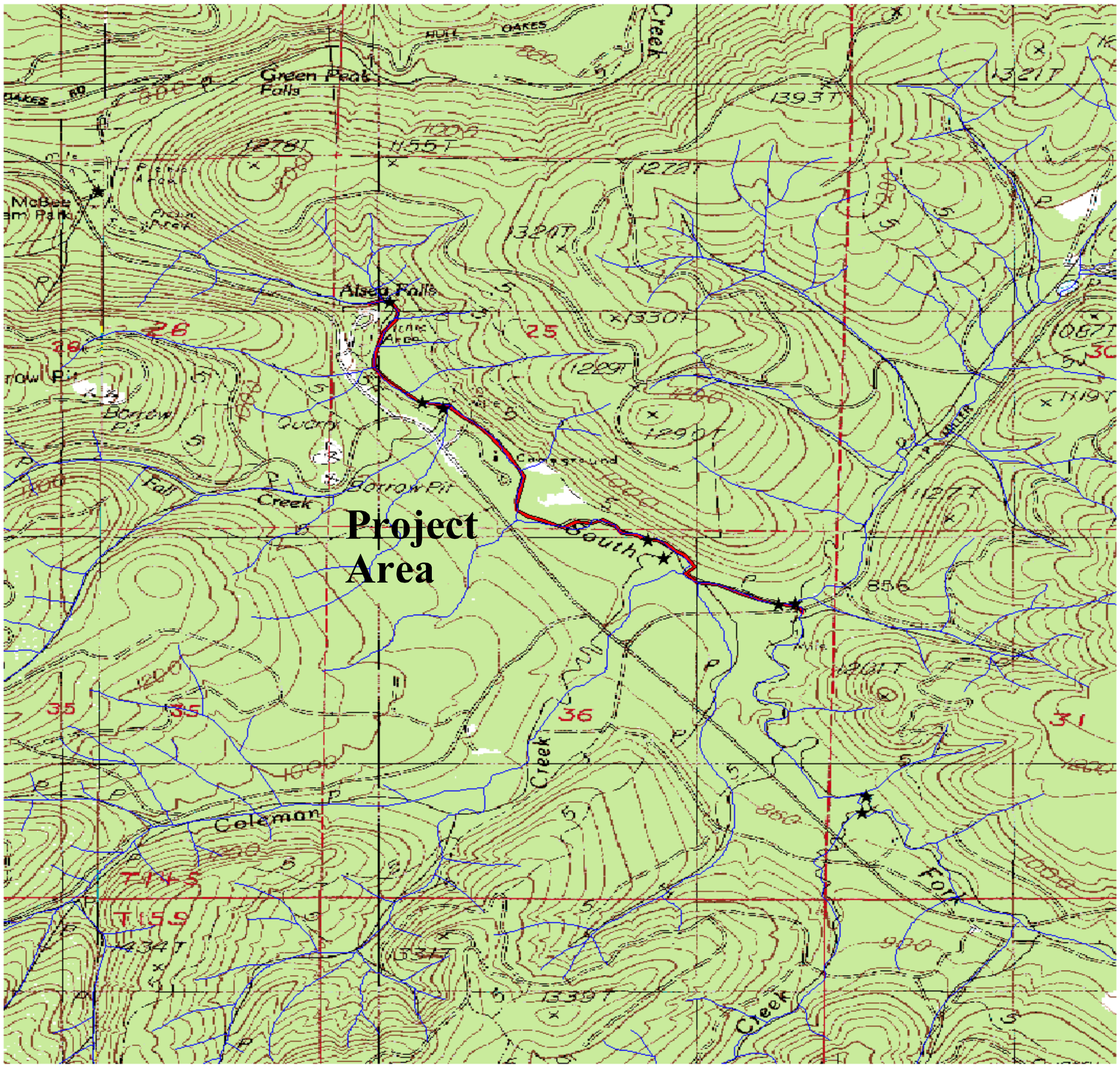
V. CONSULTATION

Oregon Coast Coho Salmon are not currently listed as 'threatened' under the Endangered Species Act. They are a "species of concern" and consultation will continue to be conducted with the NMFS as per BLM policy.

VI. INTERDISCIPLINARY TEAM MEMBERS

NAME	TITLE	DATE/INITIAL
Patrick Hawe	Hydrologist	Patrick Hawe 11/1/01
Gary Licata	Wildlife Biologist	11-06-01 GL
Tom Tomczyk	Soil Scientist/Fuels Specialist	TST 11/1/01
Ron Exeter	Botanist	RE Nov 1, 2001
Tom Vanderhoof	Cultural Specialist	TWV 11/01/01
Steve Liebhardt	Fisheries Biologist	SL 11/01/01
Traci Meredith	Recreation	TMM 11/06/01
Amy Haynes	Riparian Ecologist	AH 11/1/01
Belle Smith	NEPA Coordinator	BS Nov. 1, 2001
Brad Keller	Natural Resource Staff Administrator (management review)	WBK Nov 31, 01

Appendix A Map of Proposed Falls-over Project Area



APPENDIX B ENVIRONMENTAL ELEMENTS REVIEW SUMMARY

The following table summarizes environmental features which the Bureau of Land Management is required by law or policy to consider in all Environmental Documentation (BLM Handbook H- 1790- 1, Appendix 5: Critical Elements of the Human Environment).

Environmental Feature	Affected/Not Affected/May Be Affected	Remarks
Air Quality	Not Affected	Will not affect air quality.
Areas of Critical Environmental Concern (ACEC)	Not Affected	Not in or adjacent to ACEC.
Cultural, Historic, Paleontological	Not Affected	Post survey as indicated in App. D
Prime or Unique Farm Lands	Not Affected	None in area.
Flood Plains	May be affected	See Hydrology section of EA.
Native American Religious Concerns	Not Affected	None known.
Threatened, Endangered, or Special Status Plant Species or Habitat	Not Affected	No sites located during surveys completed on July17 and Sept. 1, 18,25 2001
Threatened, Endangered, or Special Status Animal Species or Habitat	Wildlife: May Be Affected Fish: May Be Affected	All appropriate mitigation has be incorporated into design features. See EA p. 23 Coastal Coho are currently considered species of concern. BLM will consult with NMFS per current policy.
Hazardous or Solid Wastes	Not Affected	None on site. None to be created.
Drinking or Ground Water Quality	Not Affected	See Water Quality section of EA.
Wetlands or Riparian Reserves	Affected	See EA p. 15
Invasive, Nonnative Species	Affected	See EA pp. 12,13
Environmental Justice	Not Affected	Action would not have disproportionately high or adverse human health or environmental effects on minority or low income populations.
Wild and Scenic Rivers	Not Affected	No wild & scenic present.
Wilderness	Not Affected	No wilderness in or adjacent.

Common Issues Review

Resources - -	Affected/May Be Affected/Not Affected	Remarks
Special Attention Animal Species and Habitat	Not Affected	No sites were found.
Special Attention Plant Species and Habitat	May Be Affected	All sites found have been protected
Minerals	Not Affected	No known mining claims or mineral leases w/i the project area.
Land Uses	Not Affected	Actions consistent with land use allocations.
Soils & Sedimentation	Affected	See soils and hydrology section.
water: DEQ 303(d) Listed Streams Water Temperature Water Quantity	May be affected.	See water quality section.
Rural Interface Areas	Not affected	None present.

APPENDIX C Aquatic Conservation Strategy Objectives

ACS Objective	How Project Meets the ACS Objective
1. Maintain and restore distribution, diversity, and complexity of watershed and landscape features to ensure protection of aquatic systems.	This proposal would not appreciably change existing habitat types, or alter the development of future forest stand conditions. The canopy and understory would remain intact which should keep the microclimate disturbances to a minimum.
2. Maintain and restore spatial connectivity within and between watersheds.	Existing corridors for movement through Riparian Reserves would be negligibly affected within this watershed. Some additional pathways for crossing stream channels would be provided.
3. Maintain and restore physical integrity of the aquatic system, including shorelines, banks, and bottom	The main channel in the project area is currently unstable and timctional at risk with a downward trend. This action is likely to support restoration of a functional channel system. In the short term, it is anticipated that additions of wood will result in the channel changing from functional at risk with a downward trend to an upward trend.
4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems.	Current water quality conditions are partially degraded with moderate to high levels of tines, high levels of algae growth and summer stream temperatures above the state standard. Most of the riparian canopy would be retained and the project is expected to maintain current riparian microclimate conditions and protect streams from further increases in temperature. Overtime, increased retention of wood should lead to an improvement in water quality.
5. Maintain and restore the sediment regime under which system evolved.	This proposal will support restoration of the pre-disturbance sediment regime by restoring in-channel roughness elements and opportunities for colonization by beaver.
6. Maintain and restore instream flows.	Alterations in the capture, infiltration and routing (both surface and subsurface) of precipitation, as a consequence of the this proposal, would be minimal. Increased in-channel roughness may result in reduced stream flow velocities which will help restore the timing of instream flows to pm-disturbance levels by reducing downstream flood peaks. In addition, increased water storage in adjacent flats and floodplains may, over the long term, lead to increased summer base flow.
7. Maintain and restore the timing, variability and duration of floodplain inundation and water table elevation in meadows and wetlands.	The project is expected to support restoration of pre-disturbance patterns of floodplain inundation and/or water table elevation by increasing channel roughness elements, reducing flow velocities, increasing off-channel and over-bank water storage, and by providing sites for beaver dam construction.
8. Maintain and restore the species composition and structural diversity of plant communities in riparian.	Structural components of late-seral forests (large trees, multiple canopy layers, large hard snags, heavy accumulations of down wood, and species diversity) would be maintained. Riparian vegetation would be maintained by retaining all standing and downed conifer species in the riparian zone and stream channel. Coarse woody debris and snags that a safety hazard would be retained on site.
9. Maintain and restore habitat to support well distributed populations of native plant, invertebrate. and vertebrate riparian-dependent species	Species linked to Riparian Reserves issues are mostly associated with late-seral forest conditions, which would be maintained and provide existing function of the local Riparian Reserves corridors. Existing corridors for movement through Riparian Reserves would be. negligibly affected within this watershed. Some additional pathways for crossing stream channels would be provided.