

## ENVIRONMENTAL ASSESSMENT

**EA Number:** OR-104-00-01

**BLM Office:** Swiftwater RA, Roseburg District

**Proposed Action Title:** Upper and Middle Smith River II Restoration and Rehabilitation

**Location of Proposed Action:** See maps and information Appendices A, B, and C.

### **Conformance with Applicable Land Use Plan:**

This proposed action is subject to the following land use plan:

Name of Plan: Roseburg District Record of Decision and Resources Management Plan (RMP)

Date Approved: June 2, 1995.

### **Summary**

The goal of this overall effort is to develop a coordinated multi-year plan that implements restoration and rehabilitation projects in areas of highest need within Upper and Middle Smith River subwatersheds. These subwatersheds have been ranked through several scientific evaluations as one of the highest priorities for watershed restoration in the entire Umpqua Basin. These projects are targeted to increase benefits to water quality, fish, and wildlife habitat and include the following categories and estimated amounts as portrayed in **Table 1**:

1. Upslope Road Restoration and Rehabilitation
  - a. Road Decommissioning
  - b. Road Treatments to Reduce Risks
  - c. Major Fish Barrier or High Risk Culvert Replacements or Removals
  
2. In-stream Restoration
  - a. Tree Pulling or Falling of Trees into Streams
  - b. In-stream Large Wood Placement
  - c. Redistribution of Future Blow Down to Supply In-stream Work

**Table 1 RESTORATION SUMMARY**

<b>1. Upslope Road Restoration and Rehabilitation</b>	<i>Amount Planned</i>
a. Road Decommissioning	<b>16.1 miles</b>
b. Road Treatments to Reduce Risks	<b>41.8 miles</b>
c. Major Culvert Replacements or Removals	<b>Approx. 20</b>
<b>2. In-stream Restoration</b>	
a. Tree Pulling or Falling of Trees into Streams	<b>Approx. 28 stream miles</b>
b. In-stream Large Wood Placement	<b>Approx. 14 stream miles</b>

## INTRODUCTION

The Environmental Assessment (EA) is a site specific analysis of potential environmental impacts that could result with the implementation of a proposed action. The EA assists the Agency in project planning and insuring compliance with the National Environmental Protection Act (NEPA) and making a determination as to whether any "significant" impacts could result from proposed actions. This EA has been prepared for the Swiftwater Field Office's proposed **Upper and Middle Smith River II Restoration and Rehabilitation**. This proposal is in conformance with the *Final - Roseburg District Proposed Resources Management Plan / Environmental Impact Statement* (PRMP/EIS) dated October 1994 and its associated *Roseburg District Record of Decision and Resources Management Plan* (RMP) dated June 2, 1995. The RMP was written to be consistent with the *Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old Growth Forest Related Species Within the Range of the Northern Spotted Owl* (FSEIS); dated Feb. 1994 and its associated *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (ROD) and *Standards and Guidelines for Management of Habitat for Late-Successional and Old Growth Related Species Within the Range of the Northern Spotted Owl* (S&G's) dated April 13, 1994; generally referred to as the "Northwest Forest Plan" (NFP). The ROD establishes management direction consisting of ". . . extensive standards and guidelines including land allocations, that comprise a comprehensive ecosystem management strategy" (ROD pg. 1).

The project described in this EA will undergo formal public review. After the completion of public review a "Finding of No Significant Impact" (FONSI) would be signed if appropriate. A signed FONSI finds that no "significant" environmental impact (effect) would occur with the implementation of the proposed actions beyond those already addressed in the FSEIS when the Project Design Features (PDF's) specified in this EA are followed. "Significance" has a strict NEPA definition and is found in regulation 40 CFR 1508.27. The FONSI documents the application of this definition of significance to the proposed action.

A Decision Record and a FONSI would be completed and signed after the 30 day public review. The Decision Record will reflect any changes as the result of public review and will constitute the authority to implement the proposed action.

### I. PURPOSE OF AND NEED FOR ACTION

#### A. Need for Action

Upper and Middle Smith River subwatersheds have been targeted through several scientific evaluations as one of the highest priorities for watershed restoration. The Northwest Forest Plan identified Upper and Middle Smith River subwatersheds as a key watershed. Key watersheds are areas important for maintaining and recovering at-risk fish. Using a modified

Bradbury process (a method for evaluating and ranking watersheds for priority restoration), the Umpqua Basin Watershed Council's technical advisory committee confirmed Upper and Middle Smith River as two of the best subwatersheds for restoration opportunities in the Umpqua Basin. Throughout the 1990's streams, roads and culverts have been evaluated in Upper and Middle Smith River subwatersheds to determine their fish habitat levels, risk to the aquatic system and the barriers to fish passage. Since 1995, a concerted effort has been made to focus restoration and rehabilitation in these subwatersheds. This work has included fish barrier or high risk culvert replacements or removal, tree pulling for in-stream large wood placement, road decommissioning, and road improvements to reduce sedimentation and improve hydrology.

The purpose of this planning effort is to develop a coordinated multi-year action plan that identifies similar high need restoration and rehabilitation projects in Upper and Middle Smith River subwatersheds. These projects are targeted to increase benefits to water quality, fish, and wildlife habitat. This overall plan will also help identify future restoration funding needs.

## B. Description of the Proposal

The proposal would restore and rehabilitate culverts, roads, and stream habitat in the Upper and Middle Smith River subwatersheds (see maps, Appendix A through C). The proposed project area is approximately 15 road miles NW of Drain and 35 air miles NW of Roseburg, Oregon. Approximately 49,400 acres were analyzed. Section II of this EA provides a more detailed description of the Proposed Action Alternative however the general plan focuses on the following major areas (see pictures of representative projects and map, Appendices A, B, and C):

### **1. Road Restoration and Rehabilitation**

#### **a. Road Decommissioning**

Much of the road system in Upper and Middle Smith River subwatersheds is a mixture of public and private ownership. BLM has developed risk inventories for BLM controlled roads to identify roads for decommissioning and rehabilitation in cooperation with adjacent landowners.

#### **b. Road Rehabilitation**

Roads not planned for decommissioning but are a risk to aquatics would have designs developed for treatment to reduce those risks.

#### **c. Major Culverts**

Replace, upgrade, or remove identified larger size fish barrier or high risk culverts so that they provide passage for all life stages of fish and/or are lower risk of failing.

## **2. In-stream Restoration Work**

### **a. Tree Pulling or Falling of Trees into Streams**

Tree felling or pulling would occur in prioritized stream reaches with 1) an abundance of large diameter trees in the riparian area, 2) need stream habitat diversification, and 3) would provide key habitat for fish species.

### **b. In-stream Large Wood Projects**

In-stream wood placement would occur in prioritized stream reaches that 1) would lack large diameter trees in the riparian area for the next 50 years, 2) need stream habitat diversification, and 3) would provide key habitat for fish species.

### **c. Redistribution of Future Blow Down for In-stream Work**

As part of this project guidelines are developed for the use of anticipated future blow down events that could be a source of large wood for prioritized stream reaches needing in-stream restoration work.

The ROD (pg. 6) divides the federal landbase into seven land use allocations (LUA) or categories. This project is within the "Riparian Reserves" as well as the "Late Successional Reserve" LUA. The "Riparian Reserves are areas along all streams, wetlands, ponds, lakes, and unstable or potentially unstable areas where the conservation of aquatic and riparian-dependent terrestrial resources receives primary emphasis." (ROD, pg. 7). This project also falls in a Key (Tier 1) Watershed.

### Background (Watershed Analysis and Other Evaluations)

Part of the goal of the Northwest Forest Plan is to restore watersheds based on watershed analysis recommendations and other broad prioritization assessments. A watershed analysis was completed in 1995 for the Upper and Middle Smith River subwatersheds which provided broad recommendations for restoration. In 1997 Swiftwater Resource Area, Roseburg District BLM developed a pilot project to prioritize road related risks in the intermixed BLM/private land ownerships, in accordance with those recommendations. This process identified roads of high risk to aquatic resources and in need of restoration work while also balancing the human need for those roads. Also in 1997, fish biologists from ODFW, Roseburg and Coos Bay BLM who were familiar with the Upper and Middle Smith River subwatersheds prioritized and ranked culverts for rehabilitation work based on the following criteria:

- Blocking Adult Fish Passage
- Culvert Condition (eg. Rust, High Risk of Failing)
- Blocking Juvenile Fish Passage
- Undersized Culverts
- Amount and Type of Fill Over Culvert

From 1997 through 1999 small scale projects were developed and implemented as representatives of possible larger scale projects. These projects were covered under two different EAs (EA 98-02 Smith River Risk Reduction and Restoration, and EA 97-13 South Fork of Smith River Tree Lining Project). **Table 2** and the map in **Appendix B** show a summary of all of the collaborative private as well as public restoration and rehabilitation projects that have taken place in Upper & Middle Smith River from 1995 to 1999.

UPPER & MIDDLE SMITH RIVER RESTORATION & REHABILITATION  
Table 2 SUMMARY 1995-1999

Fish Barrier or High Risk Culvert Replacements or Removals		
Owner	Project Type	Environmental Results
<b>BLM</b>	<b>15 large culverts</b> were either replaced or removed to provide fish passage or reduce risk of failure.	Access to approximately <b>16 miles</b> of stream/fish habitat were improved.
<b>Seneca &amp; County</b>	<b>6 large culverts</b> were replaced to provide fish passage <b>2 more</b> planned for FY 2000	Access to approximately <b>10 miles</b> of stream/fish habitat were improved.
In-Stream Large Wood Placement		
<b>BLM</b>	<b>1 mile</b> of stream, 20 large trees pulled	Increased stream/fish habitat
Road Related Rehabilitation & Restoration Work		
<b>BLM</b>	<b>1.9 miles</b> of road decommissioned (Additional <b>1.6 miles</b> proposed under Timber Sales)	Decreased sedimentation, Improved riparian habitat & hydrology.
<b>Seneca &amp; BLM</b>	<b>~2 miles</b> of road improved	Decreased sedimentation & improved hydrologic flow.

Larger high risk, fish barrier culverts have been replaced and continue to be replaced under the programmatic March 18, 1997 Endangered Species Act - Section 7 Consultation Biological Opinion and Conference Opinion [for] Implementation of . . . Resource Management Plans (BLM). As stated on page 31, “Benefits realized from replacement or upgrading of culverts at stream crossings include restoration of fish, flood flow and bedload passage. . . The relative short-term effects of culvert replacement are generally considered to be minimal, however, compared to continuing long-term adverse effects caused by existing culverts that are improperly placed or sized.” The reasonable and prudent measures from this Biological Opinion are being implemented as part of each culvert design and installation. Thus the culvert replacements and removals within the Upper and Middle Smith River subwatersheds are included in this analysis for information purposes only.

Riparian conversion of alder dominated stream-side vegetation to conifer forests is not included in this analysis since a previous EA OR-106-95-18, Riparian Zone Conifer Establishment, has already analyzed the effects of such restoration activities.

#### Legal Rights of Right-of-Way (R/W) Permittee:

Government roads under reciprocal R/W agreements cannot be unilaterally decommissioned. Therefore permission to decommission was pursued with the affected parties. Letters giving approval for decommissioning of the roads listed in Appendix B were received from Western Lane District (Fire Protection Agency), Seneca Jones Timber Co. and Roseburg Resources Co. The total roads listed in this EA are the final result of negotiation with and agreement of Right-of-Way permittees who have legal jurisdiction for determining road closures. With the signing of a decision related to this EA document, any of the roads listed below could be decommissioned legally in the years to come as funds become available.

#### C. Objectives

##### 1. For the Riparian Reserve portion:

a. “. . . protect the health of the aquatic system and its dependent species; . . . [and] . . . also provide incidental benefits to upland species.” (ROD, pg. 7)

b. Contribute toward the Aquatic Conservation Strategy objective of ‘restoring structural diversity of plant communities in riparian areas’ by increasing the amount of large woody debris (LWD) for stream channels within the Riparian Reserve.

##### 2. Implement ecosystem management as outlined in the ROD and RMP.

- avoid damage to riparian ecosystems and stay within the objectives of the "Aquatic Conservation Strategy" (S&G, pg. B-11; RMP pg. 19)
- "Provide habitat for a variety of organisms associated with both late successional and younger forests." (RMP pg. 33)
- maintain "ecologically valuable structural components such as down logs, snags and large trees" (RMP pg. 33)
- improve and/or maintain soil productivity (RMP pg. 35)
- "Maintain or enhance the fisheries potential of the streams . . . ." (RMP pg. 40)
- protect, manage and conserve all special status and Supplemental Environmental Impact Statement special attention species habitat (RMP pg. 41)

##### 3. For the Key Watershed:

Reduce existing road mileage and pursue watershed restoration projects to conserve watershed conditions for at-risk anadromous salmonids and resident fish species (RMP pg. 20).

#### D. Decisions to be Made to Meet Proposal Objectives

##### 1. The Decision Maker (the Swiftwater Field Manager) will need to decide:

- if this analysis supports the signing of a FONSI.

- whether to implement the Proposed Action Alternative, modify the Proposed Action Alternative, choose another alternative, or accept the No Action Alternative.
- 2. Consultation with the National Marine Fisheries Service (NMFS) will need to be completed for potential impacts to the Oregon Coast coho salmon, its associated critical habitat, and Oregon Coast steelhead trout. Consultation with U.S. Fish and Wildlife Service (FWS) for the road and culvert work and placement of in-stream structures in this EA are covered under the current programmatic Biological Opinion (BO) (the exceptions being the Johnson Creek and South Cleghorn culverts, which are currently in consultation) for threatened or endangered terrestrial animals. Consultation will need to be completed with the FWS before in-stream tree falling/pulling work listed in this EA can be implemented. This project may have to be altered to incorporate the terms and conditions of any subsequent BOs regarding specific actions (See Section V, para. A).
- 3. Decide whether these actions are in compliance with section 106 of the National Historic Preservation Act and the Oregon State Protocols with the State Historic Preservation Office (SHPO). The compliance process should be completed by the end of June 2000.

E. Issues Considered but Eliminated from Detailed Analysis

The Interdisciplinary (ID) Team identified the following concerns during project design. They were eliminated from further analysis because: (1) PDF's included in the preferred alternative would sufficiently mitigate the anticipated environmental impacts of specific activities, or (2) the impacts are within the limits addressed in the ROD/RMP. Section II, paragraph C (pg. 8) provides a list of specific PDF's incorporated into the preferred alternative to deal with these issues. These issues are summarized in Appendix D ("Issue Identification Summary") and addressed the Specialist's Reports in Appendix F.

Concerns:

1. Use of excess blow down from Late Successional Reserves for in-stream restoration.
2. Operating in northern spotted owl and marbled murrelet habitat.
3. Exchanging excess high value wood for a greater quantity of lesser value wood for in-stream restoration use.
4. Reducing road access (fire, public).
5. Noxious Weeds and use of native seed for restoration of impacts.
6. Liability from logs moving down stream and damaging other structures (ie. culverts)
7. Loss of management opportunities due to decommissioning.
8. Water quality related to stream temperature.

"Critical Elements of the Human Environment" is a list of elements specified in BLM Handbook H-1790-1 that were considered in this EA and are found at the end of this document.

## F. Issues to be Analyzed

The ID Team identified the following concerns as having sufficient potential effect to warrant more detailed analysis and will be addressed in Section IV, "Environmental Consequences" as key issues.

- Impacts to ESA Listed Oregon coastal coho salmon**
- Water Quality Related to Sedimentation**

## II. ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE

This section describes the No Action, the Proposed Action alternative (Alt 1), Alternative 2 (a more conservative approach), and any alternatives considered but eliminated from analysis. These alternatives represent a range of reasonable potential actions. This section also discusses specific design features that would be implemented under the action alternatives. All action alternatives were designed to be in conformance with the RMP.

### A. The No Action Alternative

The No Action Alternative represents the existing condition. If this alternative were selected restoration or rehabilitation work would not occur within the bounds of the project area at this time, however selection of this alternative would not preclude restoration or rehabilitation work in future NEPA documents.

### B. The Proposed Action Alternative (Alt 1)

Implementation of the Proposed Action Alternative would result in the following categories of restoration and rehabilitation work.

#### 1. **Road Restoration and Rehabilitation (See map Appendix B)**

##### a. **Road Decommissioning**

Much of the road system in Upper and Middle Smith River is a mixture of public and private ownership. BLM has developed risk inventories for BLM controlled roads to identify roads for decommissioning in cooperation with adjacent landowners. The following are the definitions being used for the types of decommissioning:

**Full Decommission** would be pursued on approximately **3.3 miles** of BLM road (see Road Decommission/Rehabilitation List, Appendix B). These are "roads determined through an interdisciplinary process to have no future need . . ." (Transportation Management Plan [TMP], pg. 15):

- where possible, rock on existing roads would be recovered to be reused at other locations

- pull culverts and re-contour stream crossings
- pull back sidecast material with high potential of failure
- sub-soil roads and revegetate with native grasses or trees
- water bar and/or block roads

**Decommission** would be pursued on approximately **12.8 miles** of BLM road (see Road Decommission/Rehabilitation List, Appendix B) These are ". . . road segment . . . closed to vehicles on a long-term basis, but may be used again in the future. " (TMP, pg. 15):

- same guidelines as above for **Full Decommission** except roads **will not** be sub-soiled. Re-vegetation would occur only where needed to stabilize bare soil.

### **b. Road Rehabilitation**

Roads not planned for decommissioning but are higher risk to aquatics will have design treatments developed to reduce those risks. Approximately **41.8 miles** of BLM controlled roads would have **road treatments** (improving the road beyond its original design). This would consist of redesigning, installing, or maintaining drainage structures (drain dips, culverts and ditches) to reduce the sedimentation and hydrologic impacts resulting from diversion of subsurface flows by ditches, the addition of road surfacing material to reduce sedimentation, and the management of oversteepened road fill material to reduce the risk of landslides.

### **c. Major Culverts**

Approximately **20** identified larger size fish barrier or high risk culverts will be replaced, upgraded, or removed so that they provide passage for all life stages of fish and/or are lower risk of failing.

## **2. In-stream Restoration Work (See map Appendix C)**

### **a. Tree Pulling or Falling of Trees into Streams**

Based on the available vegetation between 40 and 80 years of age in Upper and Middle Smith River, stream side large diameter (>16") trees would be either felled or pulled into approximately **28 miles** of prioritized stream reaches in order to diversify habitat for fish species. It is the goal of this plan to fell or pull approximately 50 trees per stream mile using designs that utilize either single tree or multiple tree felling and/or pulling. The design of the tree felling/pulling would follow guidelines to minimize impacts to other resources. These guidelines are found in Project Design Features (PDFs) section below.

### **b. In-stream Large Wood Placement Projects**

Approximately **14 miles** of prioritized stream reaches would need large logs hauled and placed in the streams using large equipment. These streams were chosen because they 1) will lack large diameter trees for the next 50 years (vegetation age class 0 to 40 years) in riparian areas, 2) need stream habitat diversification, and 3) would provide key habitat for

fish species. Additionally, about 2 miles of stream would need large logs placed with a helicopter because they lack road access for large equipment. The guidelines for placement of large wood are found in Project Design Features (PDFs) section below.

**c. Large Wood Redistribution from Future Blow Down Areas**

Page C-13, C-14, as well as C-17 of the NFP provide standards and guidelines for the salvage and redistribution of down woody debris in the case of extreme storm events and disease outbreaks. The Late Successional Reserve objectives (Late-Successional Reserve Assessment, Oregon Coast Province-Southern Portion- RO267, RO268, page 61) also give ranges of appropriate levels of downed wood to be left in place for various types of forest stands. Within Late Successional and Riparian Reserves, it is anticipated that at some point in the future blow down or disease areas greater than 10 acres in size will occur. This EA does not analyze those future events. However the amount of wood needed for in-stream restoration in Upper and Middle Smith River could use that future source of downed wood in key locations. To achieve the goal of at least 50 key pieces per stream mile, which still does not reach the historical LWD levels within the stream systems in Upper and Middle Smith River, approximately 700 large diameter trees will be needed just for the highest priority streams listed in this EA. Future NEPA documents analyzing future blow down events may reference this document for the need and appropriate use of such large woody material. The guidelines for removal and redistribution of large wood are found in Project Design Features (PDFs) section below.

C. The No Blow Down Area Alternative (Alt 2)

This alternative is essentially the same as the Proposed Action Alternative except that the **Large Wood Redistribution from Blow Down Areas in Late Successional or Riparian Reserves** (paragraph II B 2 c above) would not be part of this alternative. This also means that future downed large wood from Late Successional or Riparian Reserves within the Upper and Middle Smith River subwatersheds would not be redistributed for in-stream work. As a result in this alternative, appropriated money would pay not only for the costs of placing large wood into streams but also for the purchase of large wood for those stream reaches where the riparian vegetation is not large enough in diameter to fell or pull for in-stream restoration work.

D. Project Design Features as part of the Proposed Action

This section describes the project design features (PDFs) which would be incorporated in the implementation of the action alternatives. PDFs are site specific measures, restrictions, requirements or physical structures included in the design of a project to reduce adverse environmental impacts. These are listed in the RMP (Appendix D, pg. 129) as "Best Management Practices" (BMPs) and in the ROD as "Standards and Guidelines" (S&Gs). BMPs are measures designed to protect water quality and soil productivity. S&Gs are "... the

rules and limits governing actions, and the principles specifying the environmental conditions or levels to be achieved and maintained." (S&G, pg. A-6). The proposed action includes the following PDFs:

**1. To meet the components of the "Aquatic Conservation Strategy (ACS)" (S&Gs, pg. B-12) and protect the riparian areas:**

a. **Riparian Reserves (Component #1)** would be maintained. Riparian Reserve boundaries within the Upper Smith River 5<sup>th</sup> field watershed are established at 200 ft. slope distance from the edge of non-fish bearing streams and 400 ft. from fish bearing streams. Restoration/Rehabilitation work that occurs within Riparian Reserves would have the following design features:

1. The felling, pulling, and placement of large wood in streams all contribute to achieving the overall Aquatic Conservation Strategy objectives (RMP pg. 25). The objective is to increase the stream diversity for salmonid and aquatic species with the addition of large wood. Approximately 40 miles of stream in Riparian Reserve's would be treated for this purpose.
2. Water temperature would be protected by only felling or pulling trees into streams where the general canopy shade cover would be maintained.
3. To protect threatened aquatic species such as coho salmon, spawning surveys would be completed and redds (spawning areas for trout/salmon) identified before trees are felled/pulled to prevent impacts to juvenile salmonids. Trees would be felled to avoid redds. Felling/pulling of trees would take place when adult fish are absent from the streams. A fish biologist would inspect during operations to prevent potential fish kills.
4. To prevent sedimentation, operations to fell/pull trees would adhere to Dept. of Environmental Quality regulations to prevent any noticeable increase in turbidity.
5. For the in-stream log placement areas, access points will be needed for equipment to place large wood in the specified streams. Impacts from access would be minimized by mulching and re-vegetating where needed. These access points would only be developed and used in the driest part of the year between the dates of July 1st and September 15<sup>th</sup> (RMP, pg 142) and would be consistent with other seasonal restrictions. If in the year the work is completed dry weather is predominant, permission may be given for extensions of these working dates. Large wood placement activities would be confined to designated skid trails as identified in an approved plan. New trails would be limited to slopes less than 35%. Existing skid trails would be used wherever possible.

6. Streambank stability would be protected by not felling or pulling trees with root wads that interact with streambanks.

b. **Key Watersheds (ACS Component #2)** were established “as refugia ... for maintaining and recovering habitat for at-risk stocks of anadromous salmonids and resident fish species [RMP, pg. 20; S&G’s, pg. B-18].” This project is in a Key Watershed. An objective in a Key Watershed is to “Reduce existing system and nonsystem road mileage . . .” ([RMP, pg. 20; S&G’s, pg. B-19). Decommissioning has been approved by Roseburg Resources Co. and Seneca Jones Timber Co. who both maintain reciprocal right of way agreements for some of the proposed roads. These proposed roads are listed in Appendix B and will be **decommissioned** or **full decommissioned** according to the above definitions (paragraph II B 1 b) with the goal of "closing and stabilizing . . . to eliminate potential storm damage and the need for maintenance" (S&G, pg. B-31).

c. **Watershed Analysis (ACS Component #3)** has been completed for this watershed (see pg. 2). The recommendations from the watershed analysis were general in nature and this EA puts greater specificity to those recommendations.

d. **Watershed Restoration (ACS Component #4)** in this watershed would be accomplished through the entire project design. This would include road decommissioning and road treatments to reduce road related impacts as well as in-stream restoration work. This particular project includes the replacement or removal of approximately **20 fish barrier or high risk** culverts, the decommissioning of **12.8 miles** of road, the full decommissioning of **3.3 miles** of road, the treatment of approximately **41.8 miles** of existing road and the in-stream restoration of approximately **40 miles** of stream.

2. **To minimize impacts to Marbled Murrelets:**

a. ODFW and FWS would be contacted for design input prior to project implementation.

b. Trees would be selected and marked for felling or pulling to minimize potential take of Marbled Murrelet (MAMU) nesting habitat. Trees would be selected with the following characteristics:

1. Trees with clear boles and higher canopies.
2. Trees lacking large limbs or “witches brooms” suitable for MAMU nesting.
3. Trees generally >16" diameter but < 40" in occupied stands would be removed from consideration until biologists have had a chance to reconsult with the FWS.
4. Single trees would be selected from within stands with trees on the edge of openings being preferred.
5. Surveys of potential MAMU habitat will be completed prior to felling/pulling of trees.
6. Terms and conditions of all applicable Biological Opinions will be followed.

3. **To minimize impacts to Oregon Coast coho salmon:**
  - a. Spawning surveys would be completed and redds identified before trees are felled/pulled to prevent impacts to juvenile salmonids. Trees would be felled to avoid redds. Felling/pulling of trees would take place when adult fish are absent from the streams and a fish biologist would inspect during operations to prevent potential fish kills.
  - b. Operations to fell/pull trees would adhere to Dept. of Environmental Quality regulations to prevent any noticeable increase in turbidity.
4. **To minimize impacts to upland and terrestrial species (related to future redistribution of large woody debris found in a blow down area).**
  - a. Sufficient large woody debris (LWD) will be retained to ensure the distribution, diversity and complexity of watershed and landscape scale features and to protect spatial and temporal connectivity (in accordance with page 61 of the Late-Successional Reserve Assessment, Oregon Coast Province-Southern Portion- RO267, RO268).
  - b. The species composition of the plant community will not be altered because only LWD will be removed.
  - c. Sufficient LWD will be retained to support well distributed populations of native invertebrate and vertebrate species.
  - d. All pre-blow down event LWD would be retained within any blow down area.
5. **To minimize the loss of soil productivity (i.e. limiting erosion, reducing soil compaction, protecting slope stability and protecting the duff layer):**
  - a. **Measures to limit erosion and sedimentation from roads and trails** would consist of: 1) Treating existing roads (see list Appendix B) to fix drainage and erosion problems. This could consist of redesigning existing roads to lower their impacts and maintenance, removing higher risk sidecast material, installing additional culverts, and/or surfacing the road with rock. 2) Development, use, and decommissioning of temporary trails in the same operating season to place logs into streams. When log placement is completed, the trails would be, water barred, blocked, and seeded with native species or a sterile hybrid mix depending on availability. 3) Restricting road treatments on unsurfaced roads to the dry season (normally May 15 to Oct. 15), however, operations would be suspended during periods of heavy precipitation. This season could be adjusted if conditions are such that no environmental damage would occur (ex. the dry season extending beyond Oct. 15). 4) Restricting in-stream work (i.e. culvert replacement, fill removal, log placement) during periods of low flow (between July 1 and September 15). These BMP's (RMP, pg. 136-7) are designed to minimize sedimentation and protect water quality.

- b. **Measures to limit soil compaction** (RMP, pg. 37) when using an excavator to place large wood in streams would consist of: 1) limiting the placement of large wood into streams to the dry season (July 1 to Sept. 15) when soils are least compactable, however, operations would be suspended during periods of heavy precipitation if resource damage would occur. This season could be adjusted if conditions are such that no resource damage would occur (i.e., the dry season extending beyond Sept. 15). 2) Confining large wood placement activities to designated skid trails as identified in an approved plan. New trails would be limited to slopes less than 35%. Machines would be limited in size and track width to reduce compaction and trail width. Existing skid trails would be used wherever possible.
6. **To provide for wildlife:**
- a. Wildlife habitat values would be maintained in Late Successional and Riparian Reserves through the retention of LWD levels as specified in the *Late-Successional Reserve Assessment, Oregon Coast Province-Southern Portion- RO267, RO268* preserving the habitat of organisms that require this ecological niche (S&G, C-40, para. B).
- b. All pre-blow down event LWD (at least 16" in diameter and 16 ft. in length) would be reserved for the habitat of organisms that require this ecological niche (S&G, C-40, para. B).
7. **To prevent and report accidental spills of petroleum products or other hazardous materials:**
- Hazardous materials (particularly petroleum products) would be stored in durable containers and located so that any accidental spill would be contained. All equipment will be cleaned and inspected for leaks prior to entering streams. Accidental spills or discovery of the dumping of any hazardous materials would be reported to the Sale Administrator and the procedures outlined in the "Roseburg District Hazardous Materials (HAZMAT) Emergency Response Contingency Plan" would be followed.
8. **To prevent the spread of noxious weeds:**
- Stipulations would be incorporated into contracts to prevent and/or control the spread of noxious weeds by requiring the cleaning of all equipment prior to entry on BLM lands (BLM Manual 9015 - Integrated Weed Management).
9. **To protect the residual stand and promote stand health:**
- If a yarder is used for the placement of in-stream logs or for pulling trees into streams, yarder size would be limited to the size of the timber in order to minimize damage to the residual stand. Corridors for yarding would be pre-designated by the Sale Administrator. If damage to the stand is apparent additional protective measures would be required.

10. **To protect Special Status and SEIS Special Attention Plants and Animals:**
- a. If, during implementation of the proposed action, any Special Status (threatened or endangered, proposed threatened or endangered, candidate, State listed, Bureau sensitive and Bureau assessment) species or SEIS Special Attention (survey and manage or protection buffer) species are found, evaluation for the appropriate type of mitigation needed for each species would be done. Stipulations would be placed in the contract to halt operations if any of these Special Status or SEIS Special Attention plants or animals are found to allow time to determine adequate protective measures before operations could resume.
  - b. Seasonal restrictions prohibit all activities within 0.25 miles of northern spotted owl (NSO) activity centers from March 1 to June 30 unless surveys indicate that the site is unoccupied, not nesting, or nesting has failed.
  - c. Activities that do not modify suitable habitat within 35 miles of the coast would be prohibited between April 1 and August 5, from August 6 until September 15 activities would be prohibited from two hours before sunset until two hours after sunrise; activities that do not modify suitable habitat between 35-50 miles from the coast would be prohibited from two hours before sunset until two hours after sunrise from April 1 to August 5.
11. **To protect cultural resources:**  
Stipulations would be placed in the contract to halt operations and evaluate the appropriate type of mitigation needed to provide adequate protection; if any objects of cultural value (e.g. historical or prehistorical ruins, graves, fossils or artifacts) are found during the implementation of the proposed action.

E. Alternatives Considered but Eliminated

1. An alternative of thinning of second growth stands in the riparian area to accelerate diameter growth and hence accelerate mature characteristics in these stands was considered by the ID Team in order "to control stocking . . . and acquire vegetation characteristics needed to attain Aquatic Conservation Strategy objectives" (RMP pg. 25). This feature was dropped because of recent legal rulings that have called into question this interpretation of the NFP.
2. Another alternative of converting riparian alder dominated reaches to conifer stands through various treatments was considered by the ID Team. This alternative was eliminated because these types of actions are already covered under EA 94-13, Riparian Zone Conifer Establishment.
3. An alternative of redistributing a portion of trees from a 6.5 acre blow down for in-stream restoration work was considered. This alternative was eliminated because the Regional Ecosystem Office review found that the project would not be in compliance with the NFP salvage Standard and Guidelines.

### III. AFFECTED ENVIRONMENT

This section describes the existing environment and forms a baseline for comparison of the effects created by the alternatives under consideration. Appendix F (Analysis File) contains Specialist's Reports with supporting information for this analysis. This project lies within the Oregon Coast Range Physiographic Province. The FSEIS describes the affected environment for this province on page 3&4-21.

#### A. General Site Description

Upper and Middle Smith River 6th field subwatersheds contain approximately 49,400 acres within the Umpqua Basin which contains approximately 3.2 million acres. The following **Table 3** summarizes the miles of streams, roads, and the number of culvert restoration/rehabilitation that has been completed as well as the amount of restoration/rehabilitation proposed in these subwatersheds.

#### UPPER & MIDDLE SMITH RIVER RESTORATION & REHABILITATION

**Table 3 Watershed Context and Highest Priority Restoration/Rehabilitation to Be Completed**

<i>Restoration Rehabilitation Category</i>	<i>Restoration # or miles Completed FY 1995-1999</i>	<i>Restoration # or miles Planned FY 2000</i>	<i>Total # or miles Identified as Barriers or Higher Risk since 1995</i>	<i>Estimated Total # or miles in Subwatersheds</i>
<b>Culvert Replacement or Removal</b>	<b>21</b> Larger Culverts	<b>6</b> Larger Culverts	<b>41</b> Larger Culverts	<b>~109</b> Larger Culverts
<b>Road Decommissioning</b>	<b>1.9 miles</b>	<b>~3 miles</b>	<b>16.1 miles</b> of BLM road	<b>~430 miles</b> of BLM & Prvt road
<b>Road Treatments</b>	<b>2 miles</b>	----	<b>41.8 miles</b> of BLM road	<b>~430 miles</b> of BLM & Prvt road
<b>In-stream Restoration</b>	<b>1 mile</b>	----	<b>~40 miles</b> of 4+ order streams on BLM lands	<b>~120 miles</b> of 4+ order streams on BLM & Prvt Lands

## B. Affected Environment Related to Key Issues

### 1. **Impacts to ESA Listed Oregon Coastal Coho Salmon**

The proposed project would take place in a Tier 1 watershed (Upper and Middle Smith River), affecting the Riparian Reserves of Smith River and its tributaries. The management history of the Upper and Middle Smith River watersheds has left most riparian areas devoid of downed woody debris, covered with alder forest and dissected by roads. Streams of the Upper and Middle Smith River subwatersheds (map Appendix C), are characterized by low pool densities, high width/depth ratios, high densities of fines in riffles, and low amounts of in-stream wood (Fisheries Report, Appendix A). Table 2 of the Fisheries Report summarizes the ODFW coho habitat data (Fisheries Report, Appendix A, Table A1) with the following scores: 6% of streams as poor, 73% fair, 20% good and 1% excellent.

Large woody debris (LWD) is an important attribute because it can create pools and scour fine sediment from riffles. Existing LWD in streams was rated as fair or poor for 74% of stream miles surveyed. The average number of existing in-stream LWD is 10 key pieces per mile. Current guidelines assume natural conditions to be greater than 60 to 70 pieces LWD per mile (Fisheries Report, Appendix A, Tables A2 and A3). This lack of LWD has been caused by salvage of logs from streams by logging operations.

The management objectives for federal riparian forests aim toward old growth characteristics. As they reach maturity LWD will begin to accumulate in streams again. An 80 year old forest begins to exhibit mature forest characteristics (including LWD), a 120 year old forest is expected to be fully functioning. Until the forests are fully functioning the amount of LWD will be below natural levels. Table 3 of the Fisheries Report shows that forests in 54% of the riparian reserve network of 4th order and greater streams are in a state that do not supply LWD. Only 46% of riparian reserve forests are fully functional for supplying natural LWD to the stream system.

### 2. **Water Quality Related to Sedimentation**

**Table 4** characterizes the total amount of roads, streams and culverts within Upper and Middle Smith River subwatersheds. The Road Analysis Report describes the criteria and process for how roads were evaluated and prioritized for their human uses as well as their potential aquatic impacts. The criteria for evaluating and prioritizing streams and culverts for restoration work are found in the Fisheries Specialist report.

**Table 4 TOTAL ROADS, STREAMS, AND CULVERTS**

Roads	Miles
Total Miles of Road (Public and Private)	298
BLM Road Miles, Natural Surfacing	29
BLM Road Miles, Rocked or Paved Surfacing	152
Streams	Miles
Total Miles of Streams (Public and Private)	866
Total Miles of Greater Than 3 <sup>rd</sup> Order Streams	209
Total Miles of Greater Than 4 <sup>th</sup> Order Streams	120
Total Miles of Streams on BLM, High Priority for In-stream Restoration	~40
Culverts	Number of Individual Sites
Estimated Total Number of Larger Culverts within Subwatersheds	109
# of Fish Barrier or High Risk Culverts Replaced or Remove (FY95-99)	21
# of Fish Barrier or High Risk Culverts Yet to Replace or Remove	20

Natural background sedimentation rates within the Upper and Middle Smith River subwatersheds are difficult if not impossible to determine. The *Oregon Department of Forestry Storm Impacts and Landslides of 1996: Final Report (June, 1999)*, which had study areas in Oregon Coast Range, similar to the Upper Smith River watershed, indicated that the “. . . variation in erosion volume between study areas is extremely high” (pg 63). Because of the high variability, predictions and comparisons of natural background versus management caused sediment rates are very difficult to estimate.

The *Final ODF Storm Impacts Report* did show that forty-two percent of erosion within the study areas was due to either old or active roads (pg 43). Part of the design of this Upper and Middle Smith River II Restoration and Rehabilitation plan is to quantify and decrease the long term road related sedimentation detrimental to aquatic systems.

Based on risk evaluations of existing roads within Upper and Middle Smith River, the following **Table 5** summarizes the mileage of different highest risk categories.

**Table 5 ROAD RISK RATING FOR EROSION, STREAM CROSSING, AND POTENTIAL ROAD FAILURE**

Road Risk Rating	Subwatershed Miles		Total Miles
	Middle Smith	Upper Smith	
Total Road Miles Rated High <b>Erosion Impact</b>	12.7	0.7	13.4
Total Road Miles Rated High <b>Stream Crossing Impact</b>	15.8	14.0	29.8
Total Road Miles Rated High <b>Potential Road Failure</b>	4.1	11.2	15.3

#### IV. ENVIRONMENTAL CONSEQUENCES

This section forms the scientific and analytical basis for the comparisons of the alternatives. The probable consequences (impacts, effects) each alternative would have on selected resources are described. This section is organized by the alternatives and the effects on the key issue(s) identified in section I paragraph F, as well as the selected resources.

Analysis considers the direct impacts (effects caused by the action and occur at the same place and time), indirect impacts (effects caused by the action and occur later in time or farther removed in distance) and cumulative impacts (effects of the action when added to other past, present and reasonably foreseeable future actions) on the resource values. For the **fisheries issue**, a **direct impact** would be the killing of a fish or destroying a redd, generally from work performed in a stream. An **indirect impact** would occur by altering fish habitat, such as removing LWD from the channel or placing a road crossing over the stream. For the **sedimentation issue**, a **direct impact** would be yearly sedimentation caused by any of the restoration actions or sedimentation resulting from no actions (eg. existing erosion from roads). **Indirect impacts** involve an increase in sedimentation rates resulting from watershed processes that have been disrupted. Examples of this could be road stream crossings with higher risk of failing during larger storm events or road fills or cutbanks with higher risk of failing. For both issues the **cumulative impacts** are those which result from the proposed action added to past and future actions within the Upper and Middle Smith River subwatersheds.

The environmental consequences for the various resources are more fully analyzed in Appendix F (Analysis File). This Appendix contains Specialist's Reports and the supporting information for this analysis.

##### A. No Action Alternative

#### 1. Impacts to ESA Listed Oregon Coastal Coho Salmon

##### a. Direct Impacts

There would be no direct impacts under this alternative.

b. Indirect Impacts

Adverse: The lack of LWD has limited the amount of habitat available to fish. Habitat will remain in a depressed state until the forests become fully functional. Over 23% of the riparian forests of streams 4th order and greater will not be fully functional for at least 80 years. These streams won't begin to exhibit mature forest characteristics (including LWD falling into streams) for at least 40 years.

The road system will continue to degrade. While some road work occurs each year, the rate of road degradation is faster than the level of road repair. Failing culverts and roads will continue to add sediment at rates outside the natural range of variation. This alternative would maintain the sediment problems that currently limit spawning and rearing habitat. An estimated 19.2 miles of stream would remain closed to juvenile and/or adult fish passage because of culvert barriers.

Beneficial: The fish and streams of the Upper and Middle Smith River 6th field watersheds evolved with LWD playing an important role. Scientific literature clearly documents the necessity of LWD. Among other things, it enhances stream morphology, stores sediment, stores organic matter, provides cover for fish and provides refugia during high flow extremes. As more and more riparian forests reach maturity and LWD begins to accumulate in channels, the fish populations will respond.

c. Cumulative Impacts

Adverse: There are 1217 acres of Matrix land available for harvest on federally administered land in the project area. The harvesting of this land may have some impact on the aquatic system due to sedimentation from roads being used for hauling. Future culvert replacement scheduled in the project area will introduce short term sediment into the streams.

Beneficial: If any timber sales are planned, Riparian Reserves will protect the aquatic system. This will allow recovery of riparian forests. As mature characteristics develop in the forest, LWD and stream morphology will recover. The long term benefit of future culvert replacements will be fish passage to spawning areas.

## **2. Water Quality Related to Sedimentation**

Under the no action alternative, existing roads would be left unmanaged except for regular road maintenance. Road decommissioning or risk reduction treatments would only occur as have been identified under EA #104-98-02, Smith River Risk Reduction and Restoration, as well as timber sale EAs within Upper and Middle Smith River. The implementation of timber sale contracts and their associated restoration actions is questionable because of current court injunctions and appeals. Under this alternative, road improvements would

occur only as needed to maintain access.

a. Direct Impacts

Adverse: The road risk evaluation (**Table 5**) rated approximately **13.4 miles** of road as high for chronic sedimentation. Approximately 3.6 miles of these roads paralleling streams under this alternative would continue to deliver sediment at a rate of **35 cubic yards/mile** for a total yearly amount of **126 cubic yards (cy)**. The other 9.8 miles of road have an average of 4 stream crossings per mile and each stream crossing delivers on average **2.7 cy**. The total yearly amount from these roads would be **106 cy**. The total yearly amount of sediment delivered to streams for the 13.4 miles of road would be 232 cy per year and projected to a 5 year period would total **1,160 cy (Table 7)**. The total amount of sedimentation was projected to 5 years for direct comparison with the Action Alternative with the assumption that restoration work under that alternative would be completed in 5 years.

Benefits: Those roads treated under timber sales or under EA #104-98-02 (see **Table 6** below) are estimated to reduce sedimentation by 70% to 80%. Because the overall reduction in the amount of sediment would be so small, it was not quantified.

b. Indirect Impacts

1. **Natural LWD Input**

Adverse: For comparison purposes to the Action Alternative (which is expected to take 5 years to implement restoration projects) natural LWD sedimentation rates are estimated over a 5 year time span. LWD will naturally fall into streams over time. As trees fall into stream channels they create short term sedimentation as the LWD redirects water toward stream banks. On average each tree is expected to displace on average an estimated 5 cy of stream bank material. It is estimated that approximately 1 key tree piece per stream mile per year will fall into streams based on current riparian forest ages and the existing amount of key pieces in Upper and Middle Smith River subwatersheds. Over 5 years and within the 40 miles of stream in which restoration is proposed, the total sedimentation would be approximately **1,000 cy (Table 7)**.

2. **High Risk Fish Passage Culvert Installations**

Adverse: There are approximately 20 larger size culverts identified for replacement because they are either a fish barrier or high risk of failure. During a large storm event these culverts, if they failed, would be expected to contribute on average approximately 200 cy each of sediment for a total of **4,000 cy (Table 7)**.

### 3. High Risk Roads

Adverse: With this alternative, the road system would continue to degrade. The road risk evaluation (**Table 5**) rated approximately **29.8 miles** of road with stream crossings at higher potential risk of failing. These include the potential for culverts plugging and subsequent fill failure or culverts plugging resulting in water diversion to unstable fills. It is estimated that fill failure in these road/stream crossings would be approximately **24,810 cy (Table 7)** (see Appendix B of the Road Analysis and Sedimentation Report for specifics). This is only an estimate of the amount of culvert fill material that would wash down stream should the culvert fail and does not include the additional sediment (as high as 300%) from the resulting torrent.

Additionally about 15.3 miles of road were identified with sites of high potential for road failures. It is estimated that identified potential road failures would total approximately **21,200 cy (Table 7)** (see Appendix C of the Road Analysis and Sedimentation Report for specifics). This estimate includes the total cy of fill or cut slope material that is high potential to fail and does not include the additional sediment that could be generated from the resulting road failure. It is not expected that sediment from every road failure would reach stream channels. However the amount of sediment that could reach a stream was not estimated because of the high variability in amounts of additional generated sediment from road failures.

#### c. Cumulative Impacts

Adverse: Approximately 1274 acres of federally administered land within Upper and Middle Smith River is scheduled for commercial thinning or density management under three timber sales. The sale contracts contain road construction, treatments to reduce risks, as well as decommissioning and are currently held up under court appeals.

Sedimentation would increase slightly during harvest related road hauling. Because BMPs are included as part of the contracts the amount of sedimentation would only be slight and would only occur during the life of the contract, generally in a sporadic nature over a 3 year period. **Table 6** shows the number of miles of identified high risk roads that would be treated under these timber sales as well as under restoration EA #104-98-02. A comparison of **Table 6 with Table 5** shows that the majority of identified high risk roads would not be treated under this alternative with the resulting cumulative high risk in chronic/short term and potential sedimentation over the long term. As shown in **Table 7** chronic or short term sediment estimates total approximately **2,160 cy**. Potential sedimentation occurring during large storm events under this alternative is estimated at approximately **50,010 cy** within Upper and Middle Smith River subwatersheds.

Benefits: Harvest related road improvements and decommissioning within the above mentioned timber sale contracts would decrease the long term potential and chronic/short term sedimentation caused from existing roads. Additionally the road decommissioning identified in the Restoration EA #104-98-02 would also decrease the long term potential and chronic/short term sedimentation caused from existing roads. Treated or decommissioned roads would reduce both potential as well as chronic/short term sedimentation from these roads by 70% to 80%.

**Table 6      TIMBER SALE AND EA ROAD DECOMMISSIONING AND TREATMENTS**

<b>Road Impact Evaluation</b>	<b>Related to Previous EAs</b>	
<b>Highest Risk Rating Category</b>	<b>Decommission in Timber Sale or Restoration EAs Matching Rating Criteria Total Miles</b>	<b>Road Treatments in Timber Sale EAs Matching Rating Criteria Total Miles</b>
Erosion Impact	0.9	1.8
Stream Crossing Impact	0.9	3.5
Potential Road Failure Impact	0.7	0.4

**B. The Proposed Action Alternative (Alt 1)**

In this alternative approximately 41.8 miles of road would be treated and approximately 16.1 miles of road would be either decommissioned or fully decommissioned to reduce road related sedimentation. Approximately 20 culverts would be replaced or removed to lower risks of failure-sedimentation and/or allow fish passage. Approximately 14 miles of streams are identified for in-stream large log placement and another 28 miles of streams are identified for the felling or pulling of trees into streams to provide fish habitat. Approximately two miles of the above described streams would have a combination of felling, pulling, as well as hauling so that the total stream miles being analyzed are approximately 40 miles. This alternative speeds up the healing process of the aquatic environment.

**1. Impacts to ESA Listed Oregon Coastal Coho Salmon**

**a. Direct Impacts**

Some logs would be placed in streams using an excavator in the stream channel. With the guidelines specified in the project design features, the probability of a fish being crushed by heavy equipment or falling logs is very low. To minimize this probability all Oregon Plan and Oregon Department of Fish and Wildlife guidelines for in-stream work and habitat restoration would be followed.

b. Indirect Impacts

Adverse: Potential for short term adverse effects exist. Road work, culvert replacements, and log placement by excavator will cause a short term (<3 year) increase of fine sediment (see Road Analysis and Sedimentation Report).

Impacts from felling and pulling of trees should be negligible because the project tries to mimic the natural fall over of trees. Only inconsequential adverse effects will occur to fish species from the placement of LWD. If any impacts are realized they will be small scale and short duration. Excavator trails will be pre-designated and spaced to reduce impacts to riparian vegetation and streambanks.

Beneficial: The benefits of LWD are explained under the No Action Alternative. The difference with this alternative is that enhancement of fish habitat will occur in the next five years instead of waiting until the riparian forest is fully functional. The added trees will provide interim LWD until the riparian forests reach maturity and begin providing natural LWD. Treated reaches comprise approximately 40 miles or about 1/3 of the 4th order and greater streams. During prioritization of stream reaches, these 40 miles were believed to account for almost all of the Oregon Coastal coho salmon habitat on federally administered land. Fish populations in the treated streams will not have to persist through future decades relying on degraded habitat.

Road improvements and storage of sediment by log structures will reduce sediment in the long term, pushing the sediment regime back towards natural conditions. The risk of large inputs of sediment from road failures will be reduced. Road decommissioning and improvement will reduce the effect roads have on increasing storm flows because roadside ditches will not act as stream channels. An estimated 19.2 miles of stream would be opened to juvenile and/or adult fish passage as culvert barriers are removed, replaced or upgraded.

c. Cumulative Impacts

Adverse: Same as No Action Alternative.

Beneficial: Same as No Action Alternative, plus LWD addition would begin recovering fish habitat sooner (as much as 90-100 years) rather than waiting for forests to heal themselves.

**2. Water Quality Related to Sedimentation**

Although funding may affect the time frames for implementation, for purposes of comparison it is expected that this restoration and rehabilitation work would be completed over a 5 year period. The quantified numbers below are representative of a 5 year time span.

The following are potential and chronic/short term sediment sources that could result from implementing this restoration and rehabilitation plan. These are sources above and beyond natural sedimentation levels that currently exist within the Upper and Middle Smith River.

- Placement of Large Woody Debris (LWD) into Streams (Includes felling or pulling of trees, equipment accessing and working in streams)
- Culvert Crossing Installations
- Existing Roads

**Table 7** summarizes the impacts of sedimentation for this alternative.

**Table 7 Summary of Chronic and Potential Sedimentation from LWD, Culverts, and Roads**

Restoration Category	No Action Alt.		Proposed Action Alt	
	Chronic or Short Term Sediment Delivery (cubic yards)	Potential Sediment Delivery (cubic yards)	Chronic or Short Term Sediment Delivery (cubic yards)	Potential Sediment Delivery (cubic yards)
<b>LWD Placement</b>	Current Condition <sup>1</sup> @ 5 Key Pieces per stream mile for 40 miles 1,000 cy		@ 50 Key Pieces <sup>2</sup> per stream mile for 40 miles  10,000 cy	
<b>Road Surface Erosion</b>	1,160 <sup>3</sup>		435 <sup>3</sup>	
<b>Road Treatments</b>			230	
<b>Larger Fish Passage Culvert Replacements</b>		4,000		<i>75% Reduction</i> 1,000
<b>Road/Stream Crossings (Culverts)</b>		~24,810 <sup>4</sup>		<i>75% Reduction</i> 6,200
<b>Potential Road Fill &amp; Cut Slope Failures</b>		21,200 <sup>5</sup>		<i>50% Reduction</i> 10,600
<b>TOTAL</b>	<b>2,160</b>	<b>50,010</b>	<b>10,665</b>	<b>17,800</b>

<sup>1</sup> Estimates based on 1 tree/mile/year naturally falling into stream over a 5 year period.

<sup>2</sup> Estimates based on felling, pulling, or placing 50 trees/mile into streams over a 5 year period.

<sup>3</sup> Based on yearly sedimentation rates estimated over a 5 year period.

<sup>4</sup> Only estimates total cubic yards that could fail within road/stream crossing prisms. Torrents resulting from culvert failures could generate up to 300% additional sediment.

<sup>5</sup> Estimates existing cubic yards within the road fill or cut slope that have high potential of failure. Does not estimate additional sediment that could be generated from the failure. During large storm events it is expected that a third to half of this volume would be delivered to streams (Final ODF Storm Impacts Report, pages 91-94).

a. Direct Impacts

**1. Placement of LWD**

Adverse: The placement of LWD in 14 miles of stream using equipment in the stream channel would create some short term sedimentation coming from the entry points into the streams. Mitigation measures to minimize sedimentation from these actions include: limiting equipment access to the driest portion of the season between July 1st and September 15<sup>th</sup>, confining equipment to designated skid trails as identified in an approved plan, using existing trails as much as possible, limiting new trails to slopes less than 35%, mulching and re-vegetating access points where needed. With the mitigating measures, the total amount of sediment created by these LWD placement activities is expected to be less than 1% (<100 cy) of the total stream bank sediment displaced from redirected water (see Indirect Impacts below).

**2. High Risk Fish Passage Culvert Installations**

Adverse: Approximately 20 culverts have been identified as high priority for replacement or removal. Mitigating measures to minimize sedimentation include installing culverts during the dry season between between July 1 and September 15 and erosion control on exposed soil. On average, each culvert replacement or removal represents approximately 1 cy of short term sedimentation which is minimal compared to other man caused sediment within Upper and Middle Smith River subwatersheds.

**3. High Risk Roads, Treatment and Decommissioning**

Adverse: For roads that would be treated or decommissioned (total approximately 57.9 miles, Appendix B), sedimentation is expected to occur during the year of treatment. The dominant source of sediment would be culvert removals or replacements in perennial streams. On average there are approximately four stream crossings per mile of road. This represents a total of approximately **230 cy (Table 7)** short term sedimentation for the entire project area and is less than 1% of the total man caused sediment within Upper and Middle Smith River subwatersheds.

Beneficial: As shown in **Table 5**, approximately **13.4 miles** of road are rated high for sedimentation issues. The majority of these roads (not treated under the No Action Alternative) would either be treated or decommissioned under this alternative (approx. **11.4 miles** of road, **Table 8**). With these treatments and decommissioning, the sedimentation from the 3.6 miles of road paralleling streams (126 cy) would be reduced by 50% to **63 cy**. Sedimentation at each stream crossing on the other 9.8 miles of road would be reduced to **0.6 cy/year**. The total yearly amount from these roads would be **24 cy/year**. The overall total yearly amount of sediment delivered to streams for the 13.4 miles of road would be 87 cy per year projected over a 5 year period would be **435 cy (Table 7)**.

b. Indirect Impacts

**1. Placement of LWD**

Beneficial: Under this alternative LWD would be added to approximately 40 miles of stream. LWD in streams acts to capture coarse and fine sediment within the stream system. An indirect effect of added LWD is that sediment moving down stream through the system would be captured by LWD. The amount would be very difficult to quantify.

Adverse: Felling, pulling, and placement of trees into 40 miles of stream channels would create short term sedimentation as the LWD redirects water toward stream banks. On average each placed tree would displace an estimated 5 cy of stream bank material. It is estimated that with an average of 50 trees per mile for 40 stream miles, approximately **10,000 cy (Table 7)** of stream bank material would be displaced. Stream channels are expected to stabilize within a couple years after LWD has been placed.

**2. High Risk Fish Passage Culvert Installations**

Beneficial: Under this alternative approximately 20 higher risk larger culverts would be replaced or removed. An indirect effect of this alternative is the lowered probability of these culverts failing during a large storm event. On average, each culvert replacement or removal represents approximately 200 cy of potential sedimentation per culvert or a total of 4,000 cy (Table 7). The culvert replacements or removals would represent a reduction of potential sedimentation by 70% to 80% to approximately **1,000 cy (Table 7)**.

**3. Road Treatment and Decommissioning**

Beneficial: Under this alternative approximately 57.9 miles of road (Appendix B) would be either treated or decommissioned. An indirect effect of this alternative is the lowered probability of failure for road/stream crossings as well as lowered potential for road fill failure. As shown in **Table 5**, approximately **29.8 miles** of road are rated high for stream crossing issues and **15.3 miles** of road are rated high for road failure issues. The majority of these roads (not treated under the No Action Alternative) would either be treated or decommissioned under this alternative (**Table 8**).

On average for roads rated high for stream crossings, every mile of road represents approximately 1388 cy of potential sedimentation. This represents a significant portion of the total potential man caused sediment within Upper and Middle Smith River subwatersheds. The road treatments and decommissioning would reduce potential sedimentation by 70% to 80% to a total of approximately **6,200 cy (Table 7)**.

On average for roads rated high for potential road failure, every mile of road represents approximately 827 cy of potential sedimentation and is a significant portion of the total potential man caused sediment within Upper and Middle Smith River subwatersheds. The road treatments and decommissioning under this alternative would reduce potential sedimentation by 50% to a total of approximately **10,600 cy (Table 7)**.

**Table 8**

Road Impact Evaluation	Related to Proposed Alternative		Total
	Planned Decommission Matching Rating Criteria Total Miles	Planned Treatment to Reduce Risks Matching Rating Criteria Total Miles	
Erosion Impact	7.1	4.3	11.4
Stream Crossing Impact	4.9	19.9	24.8
Potential Road Failure Impact	4.7	10.9	15.6

c. Cumulative Impacts

As shown in **Table 7** chronic or short term sediment estimates total approximately 10,665 cy and is expected to only last for the time that this alternative is being implemented. The increase from current condition ( No Action Alternative) is due almost entirely to in-stream wood placement and the resulting changes in stream channel. This is an **increase in sedimentation by 78%** but would only be expected to last several years as the stream channels stabilize. The chronic delivered sedimentation caused by high erosion risk roads would be **reduced by 63 %** under this alternative.

Potential sedimentation under this alternative, which represents the most significant amount of man caused sediment, is estimated at approximately **17,800 cy (Table 7)** within Upper and Middle Smith River subwatersheds. This is a **reduction from the No Action Alternative of 64%**.

C. The No Blow Down Area Alternative (Alt 2)

**1. Impacts to ESA Listed Oregon Coastal Coho Salmon**

This alternative is identical to Alternative 1 except that trees would not be salvaged from

blowdown areas to be redistributed into streams. This means trees would have to be purchased from private companies or taken from future federal timber sales. The direct, indirect and cumulative impacts are identical to those of the Alternative 1. In all likelihood this alternative would take longer to complete than Alternative 1.

## **2. Water Quality Related to Sedimentation**

The direct and indirect impacts are similar to those of the Alternative 1. Since trees for the in-stream portion of this alternative would be harder to obtain, it is expected that it would take longer to implement this Alternative. The resulting cumulative impacts, especially for the in-stream restoration work, would be drawn out over a longer period of time.

## **V. CONTACTS, CONSULTATIONS, AND PREPARERS**

### **A. Agencies, Organizations, and Persons Consulted**

The Agency is required by law to consult with the following federal and state agencies (40 CFR 1502.25):

**1. Threatened and Endangered Species Section 7 Consultation** - The Endangered Species Act of 1973 (ESA) requires consultation to ensure that any action that an Agency authorizes, funds or carries out is not likely to jeopardize the existence of any listed species or destroy or adversely modify critical habitat. The required ESA consultation was accomplished (in part, refer to section I.D.2 for details) with the **US Fish and Wildlife Service (FWS)** and the Biological Opinion (BO) was received on June 28, 1999 (Ref. no. 1-15-99-F-206). The BO concluded the proposed action is "not likely to jeopardize the continued existence of the spotted owl, marbled murrelet, or bald eagle, and are not likely to adversely modify spotted owl or marbled murrelet critical habitat" and an "Incidental Take Statement" was issued. Incidental Take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency. The FWS has stipulated terms and conditions for the Incidental Take having to do with seasonal restrictions for the northern spotted owl and the marbled murrelet. The results of subsequent consultation is anticipated to be similar. The Roseburg District's Biological Assessment (BA) for Threatened and Endangered Fish Species is being submitted to the **National Marine Fisheries Service (NMFS)**. Consultation is expected to be completed in the summer of 2000. The BA for this Upper and Middle Smith River II Restoration and Rehabilitation plan is being submitted as a "may effect likely to adversely affect" for Oregon Coast coho salmon and Oregon Coast steelhead trout. Consultation would be completed and a valid BO received before any action would be implemented.

**2. Cultural Resources Section 106 Compliance** - Compliance with section 106 of the National Historic Preservation Act and the Oregon State Protocols with the State Historic Preservation Office (SHPO) should be completed by the end of June 2000.

B. Public Notification

1. Notification was provided to affected **Tribal Governments** (Confederated Tribes of the Coos, Lower Umpqua and Siuslaw; Grande Ronde; Siletz; and the Cow Creek Band of Umpqua Indians). No comments were received.
2. A letter was sent to approximately 24 **adjacent landowners**. One email comment was received and a response was given (see Appendix G - Public Contact).
3. The **general public** was first notified via a Umpqua Basin Watershed Council tour of potential restoration projects in Upper and Middle Smith River on November 16<sup>th</sup>, 1999. Two comments were received from the public as a result of the tour, both in favor of the proposed projects. The **general public** was also notified via the *Roseburg District Planning Update* (Winter 1999, Spring 2000) going to approximately 150 addressees. These addressees consist of members of the public that have expressed an interest in Roseburg District BLM projects. One comment seeking follow-up documents was received. Letters were sent to Seneca Jones Timber Company, Roseburg Resources, and Western Lane Forest Protective Assn. to seek their input regarding road decommissioning. Their responses are reflected in the proposed decommission road list in this EA. A tour was given for Douglas County Commissioner Doug Robertson and staff from Senator Wyden and Senator Smith's office on February 17<sup>th</sup>, 2000.
4. Notification would also be provided to certain **State, County and local government** offices (see Appendix G - Public Contact).
5. A 30-day **public comment period** would be established by the review of this EA. A Notice Of Availability would be published in the *News Review*. This EA and its associated documents would be sent to all parties who request them. If the decision is made to implement this project, a notice would be published in the *News Review*.

C. Agencies, Persons, and Permittees Consulted

<u>Agencies and Permittees</u>	<u>EA Preparers</u>	
US Fish and Wildlife Service	Karel Broda	Geotechnical Engineer
National Marine Fisheries Service	Dan Couch	Watershed & EA Coord
Oregon Department of Fish and Wildlife	Chris Foster	Wildlife Biologist
State Historic Preservation Office	Pete Howe	Engineering
Douglas County Commissioners	Al James	Silviculture
Western Lane District (Fire Protection Agency)	Ed Rumbold	Hydrology
Seneca Jones Timber Co. (R/W)	Chuck Wheeler	Fisheries Biologist
Roseburg Resources Co. (R/W)		

**CRITICAL ELEMENTS OF THE HUMAN ENVIRONMENT**

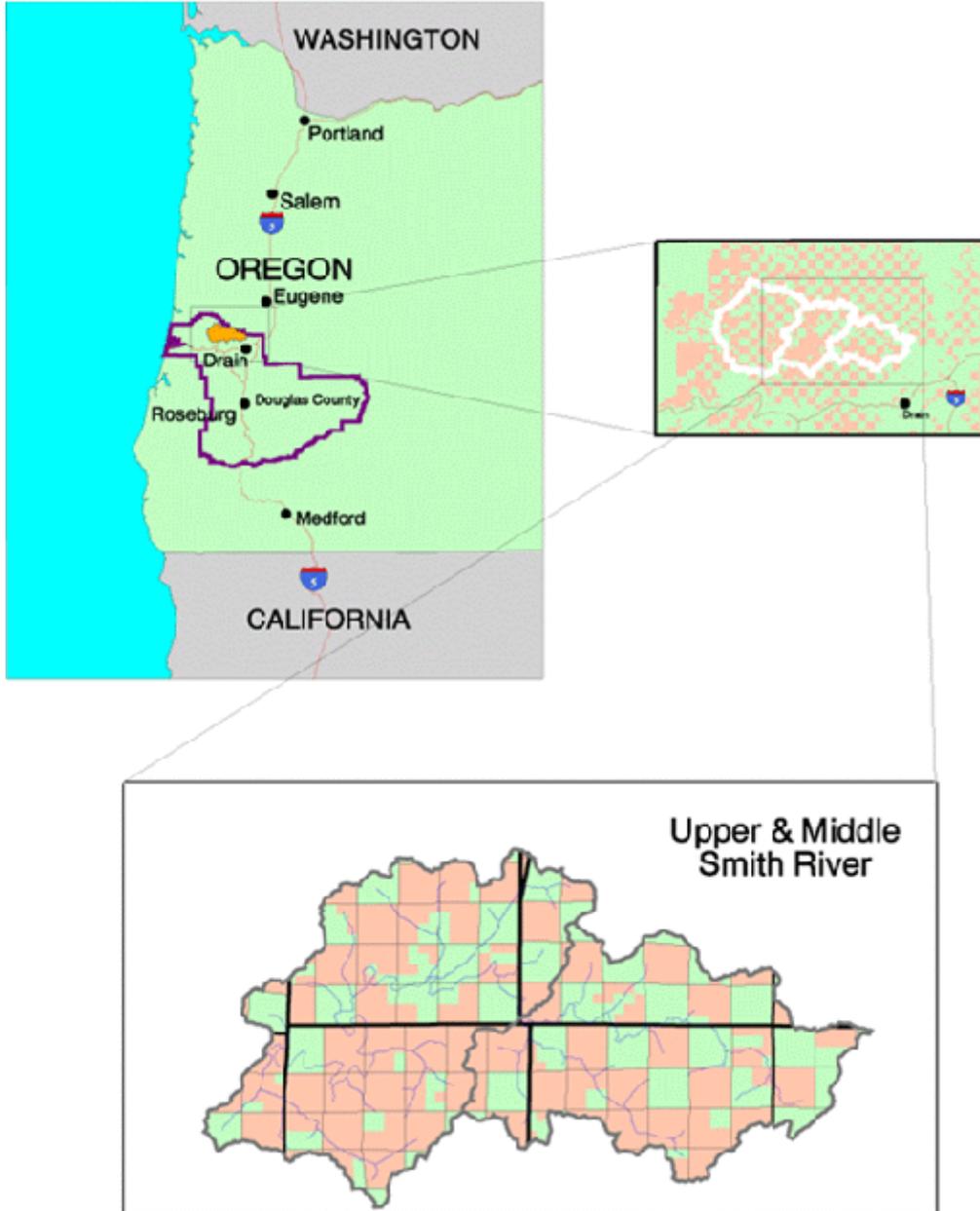
The following elements of the human environment are subject to requirements specified in statute, regulation, or executive order. These resources or values are either not present or would not be affected by the proposed actions or alternatives, unless otherwise described in this EA. This negative declaration is documented below by individuals who assisted in the preparation of this analysis.

	Responsible	Initials	Date	Remarks
Air Quality	Fuels Management Specialist	KC	5/31/00	✓ NONE
Areas of Critical	Environmental Specialist	DEC	5/25	Not Applicable
Cultural Resources	Archaeologist	✓ JRB	5/30	Investigations to be completed by 6/30
Environmental Justice	Environmental Specialist	DEC	5/25	Not Applicable
Farm Lands (prime or unique)	Soil Scientist	DCC	5/31/00	Not Applicable
Flood Plains	Hydrologist	ER	5/30	
Native American Religious	Environmental Specialist	DEC	5/25	Not Applicable
Threatened or Endangered	Wildlife Biologist	MEF	5/24/00	See report / EA.
Threatened or Endangered	Botanist	(RSD)	5-26-00	
Threatened or Endangered	Fisheries Biologist	W	5/26/00	See report
Hazardous/Solid	District Hazardous Materials	DEC	5/26	All applicable hazard policies, Reg etc. will apply.
Water Quality	Hydrologist	ER	5/30	
Wetlands/Riparian Zones	Hydrologist	ER	5/30	
Wild and Scenic Rivers	Recreation Planner	RE	5/26/00	
Wilderness	Recreation Planner	RE	5/26/00	

# APPENDIX A

## VICINITY MAP

### Upper & Middle Smith River II Restoration and Rehabilitation



# APPENDIX B

## ROAD DECOMMISSION and TREATMENT LIST, UPPER & MIDDLE SMITH RIVER after DISCUSSIONS WITH WESTERN LANE FOREST PROTECTION & LETTERS FROM RRC & SENECA

as of 3/30/00

**Table B1**

<b>Proposed Road Decommissioning</b>	
Route #	Miles
19 S 07 W 35.00B	1.7
*21 S 06 W 30.01A	0.5
20 S 07 W 13.00A0	0.4
20 S 07 W 13.00B0	0.3
20 S 07 W 29.00A0 (Seneca decom after proposed hauling complete)	0.9
20 S 07 W 33.05A0	0.2
20 S 07 W 35.00A0	0.7
21 S 07 W 01.04A	0.8
21 S 07 W 03.00B0	0.6
21 S 07 W 03.02A	0.2
21 S 07 W 07.02A	0.5
21 S 07 W 07_UNKNWN	0.3
21 S 07 W 10.00	0.3
21 S 07 W 10.02	0.3
*21 S 07 W 14.OU	0.4
21 S 07 W 17.00A0	1.0
21 S 07 W 19.02 (Frm RRC prop line)	0.5
21 S 07 W 20.03	0.1
21 S 07 W 29.02 (From prop line section 20/21)	0.1
21 S 08 W 1.02	0.4
21 S 08 W 12.00A	0.8
21 S 08 W 12.00B	0.3
21 S 08 W 13.0 (At jet of 24.1)	0.7
21 S 08 W 13.1	0.8
<b>Total Decommission miles</b>	<b>12.8</b>

<b>Proposed Full Decommissioning</b>	
Route #	Miles
20 S 07 W 20.01A0	0.3
20 S 07 W 25.01B	1.2
20 S 07 W 26.00C0	0.4
20 S 07 W 30.00A0	0.2
21 S 07 W 03.05B0	0.35
21 S 07 W 03.07A0	0.2
21 S 07 W 10.01A	0.1
21 S 07 W 17.02A	0.2
21 S 07 W 21.00A	0.3
<b>Total Full Decommission miles</b>	<b>3.3</b>
<b>Overall Total Decommission Miles</b>	<b>16.1</b>

\* These particular roads are found in the Tom Folley 6<sup>th</sup> field subwatershed a few miles south of Upper and Middle Smith subwatersheds.

<b>Roads to Treat to Reduce Risk</b>	
Route #	Miles
20 S 06 W 27.02A0	0.3
20 S 06 W 32.00B0	1.2
20 S 07 W 22.00A0	0.35
20 S 07 W 27.01D0	1.0
20 S 07 W 28.00A0	3.0
20 S 07 W 32.00A0	1.4
20 S 07 W 32.00B0	1.15
20 S 07 W 32.00C0	0.7
21 S 05 W 18.00A	10.1
21 S 06 W 01.05A0	0.2
21 S 06 W 09.00A0	0.9
21 S 06 W 13.00E0	1.9
21 S 06 W 14.02A0	0.3
21 S 07 W 01.00E1	0.7
21 S 07 W 01.00E2	0.7
21 S 07 W 01.00F0	0.4
21 S 07 W 03.01A0	0.4
21 S 07 W 07.01A0	0.2
21 S 07 W 07.02A0	0.5
21 S 07 W 13.00A0	0.6
21 S 07 W 13.01A0	1.2
21 S 07 W 14.03A0	1.3
21 S 07 W 15.01A0	3.6
21 S 07 W 18.01A (Decom FY 2003)	0.3
21 S 08 W 01.00B (from jct of 12.1)	1.3
21 S 08 W 12.01 (Design low maint rd)	0.8

21 S 08 W 12.02 (Design low maint rd)	0.4
21 S 08 W 13.2	0.2
22 S 07 W 02.00C	2.9
22 S 07 W 02.00D	2.7
22 S 07 W 02.00E	1.1
<b>Total Road Treatment Miles</b>	<b>41.8</b>

Table B2 ROSEBURG BLM UPPER & MIDDLE SMITH RIVER COSTS FY 1995 -1999<sup>1,2</sup>

FY 95 Project	Actual Costs
(1) Major culvert installed and road work (Yellow Lake Creek Pipe & Road Repair)	\$248,650
<u>FY 97 Projects</u>	
(6) Major culverts installed	\$221,000
Tree pulling contract (~20 trees)	\$15,000
<u>FY 98 Projects</u>	
(3) Major culverts replaced	\$309,150
Major culvert removal (Yellow Lake Cr)	\$4,000
Culvert supply contract	\$38,670
Decommission High/Moderate Risk Roads (0.7 miles)	\$34,500
NW Youth Cons. Corp Waterbarred 1.5 miles of roads	\$1,000
Rock supply contract & Use of some rock for road risk reduction on Private lands (Wyden)	\$83,000
<u>FY 99 Projects</u>	
Risk Reduction fish passage culvert with large fill (Road 21-5-18.0, MP 4.1)	\$119,000
(3) Risk Reduction (Fills) Culverts to Replace (Road 21-5-18.0 MP 3.2, 3.3, 3.8)	\$108,000
Decommission High/Moderate Risk Roads (1.2 miles)	\$24,000
<b>GRAND TOTAL</b>	<b>\$1,181,970</b>

<sup>1</sup> All green dots on the accompanying map represent culverts that have been replaced or removed.

<sup>2</sup> All roads designated with a red line on the accompanying map have been decommissioned.

ROSEBURG BLM UPPER & MIDDLE SMITH RIVER  
RESTORATION & RISK REDUCTION PLANS FY 2000

**Table B3**

FY 2000 Projects	<u>Estimated Costs</u>
Elk Creek Culvert, Upper Smith River Area (Blue Dots on Map)	\$65,000
Summit Creek Culvert (Blue Dots on Map)	\$35,000
Cleghorn Culvert (Blue Dots on Map)	\$75,000
Johnson Creek Culvert (Blue Dots on Map)	\$85,000
Road Decommissioning (~3.3 miles)	\$71,000
<b>GRAND TOTAL</b>	<b>\$331,000</b>

*PRELIMINARY* ROSEBURG BLM UPPER & MIDDLE SMITH RIVER

**Table B4** RESTORATION & RISK REDUCTION PLANS **FY 2001 & BEYOND**

Projects	<u>Estimated Costs</u>
<b>CULVERTS &amp; ROADS (PRELIMINARY ESTIMATES)</b>	
Deere Creek Culvert (In Timber Sale) (Yellow Dot on Map)	\$46,000
(2) Fish Passage Culverts (In Timber Sale) (Yellow Dots on Map)	\$60,000
Amberson Creek Low Water Crossing Removal & Haney Creek Culvert Removal (In coordination with <b>potential</b> road decommissioning) (Pink Dots on Map)	\$40,000
Other Potential Culverts Needing Replacement or Removal (avg costs \$55,000/culvert for ~5 identified culverts) (Pink Dots on Map)	\$275,000
Road Decommissioning (12.8 miles @ \$15,000/mile)	\$192,000
Road Full Decommissioning (3.3 miles @ \$24,000/mile)	\$79,200
Road Improvements (41.8 miles @ \$40,000/mile) (Green Lines on Map)	\$1,672,000
<b>IN-STREAM PROJECTS (PRELIMINARY ESTIMATES)</b>	
Tree Pulling (~3.9 miles of stream, ~195 trees @ \$1,000/tree)	\$195,000
Felling of Trees (~20.4 miles of stream, ~1,020 trees @ \$50/tree)	\$51,000
Hauling of Trees (~13.5 miles of stream, ~675 trees @ \$250/tree)	\$168,750
<b>GRAND TOTAL</b>	<b>\$2,778,950</b>

## Pictorial Examples of Upper & Middle Smith River II Restoration & Rehabilitation Projects

The goal of the Oregon Plan as well as part of the goal of the Northwest Forest Plan is to restore watersheds based on watershed analysis recommendations and other broad prioritization assessments. Within the Upper and Middle Smith River subwatersheds, an action plan is being developed for the highest priority restoration needs. The following pictures represent restoration and rehabilitation projects similar to those proposed in the overall plan. They include fish passage restoration, road sediment and risk reduction, and salmon and trout habitat restoration.

### Elk Creek, Current Culvert Condition, Example of Fish Barrier



This picture shows the outlet end of the Elk Creek culvert. The culvert is undersized for this stream and the water drops approximately 2 feet onto bedrock. The bedrock at the bottom of the drop makes it impossible for juvenile fish to pass upstream to find habitat for rearing (areas with large wood and pools as pictured below).

It is expected that replacement of this particular culvert will open approximately 1 mile of rearing habitat for Coho and Cutthroat fish.

This particular culvert is on Seneca Jones property but is controlled under the right-of-way permits by the Roseburg BLM. It effects and is a part of the intermixed BLM and private landownership in Upper and Middle Smith River.

### Example of a Desired Final Product for Culvert Barriers

Replacement culverts in Smith River will be similar to this bottomless arch pictured here constructed in **Bear Creek**. Culvert replacements are done to provide for unobstructed migration corridors for multiple life stages of salmon and trout. Activities to date have resulted in dramatic restoration of site conditions and opened up habitat for all life stages. Miles of stream opened in Upper and Middle Smith River are summarized in **Table 1**.



## Examples of Road Sediment Reduction and Decommissioning in Smith River



Road sediment and risk reduction will involve a variety of treatments to control road related erosion sources as well as lower the risks of areas with high potential of failing. The treatments include road decommissioning, storm proofing, and stabilization. Past implementation of these treatments has lead to dramatic reductions in road sediment and improved conditions for fish, water quality, and aquatic habitat.



The picture on the left shows a decommissioned road that had a dilapidated log stringer bridge removed as part of the project work. The logs from the bridge were placed in the stream (just to the right of the picture). This created gravels (seen in the picture) upstream from the logs and a coho salmon spawned in those gravels this year.

### **Example of a Simplified Stream in Upper Smith River**

An integral part of in-stream restoration is adding more complexity to streams that have had large wood taken out in the past. This picture shows a portion of upper Smith River and is typical of the majority of streams that have been simplified. This is contrasted with the picture below. The stream below probably looked similar to this picture a couple of years ago. Restoration will involve the pulling, felling, or hauling and placement of large diameter trees into these types of streams to create more diversity as shown below.



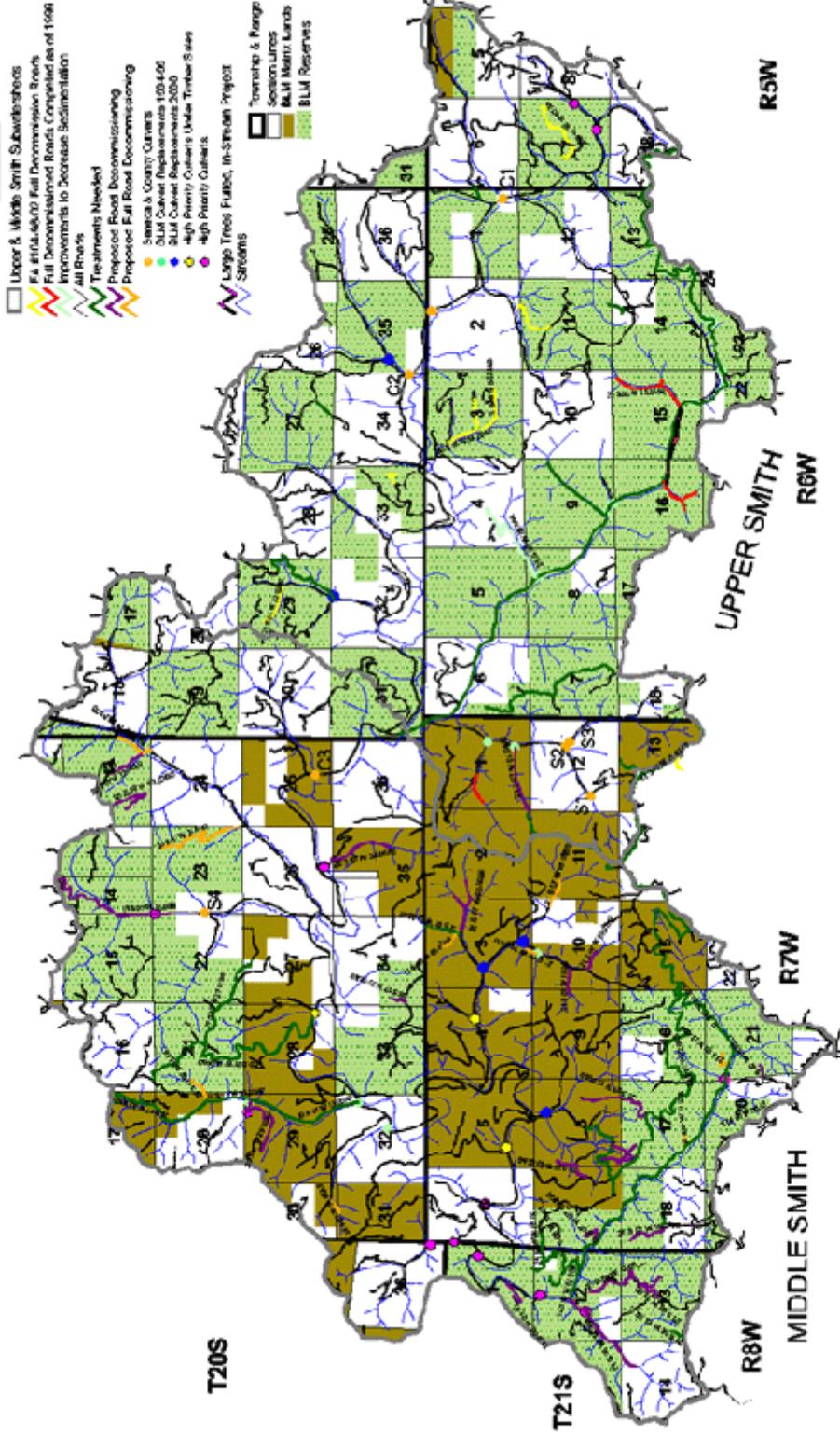
### **Example of Salmon and Trout Habitat Rehabilitation Tree Pulling, South Fork of Smith River**



Salmon and trout habitat restoration efforts are designed to treat identified limitations in aquatic habitat quality and quantity. Projects consist of pulling, felling, or placing whole trees and other large wood material to provide and create habitat structure. In this picture, 2 key trees were pulled into the stream in 1997. After a couple years smaller debris has been caught by these key pieces and helped create pools, spawning gravels, and diversity for coho and cutthroat trout.

Appendix B

# Upper & Middle Smith River II Restoration & Rehabilitation

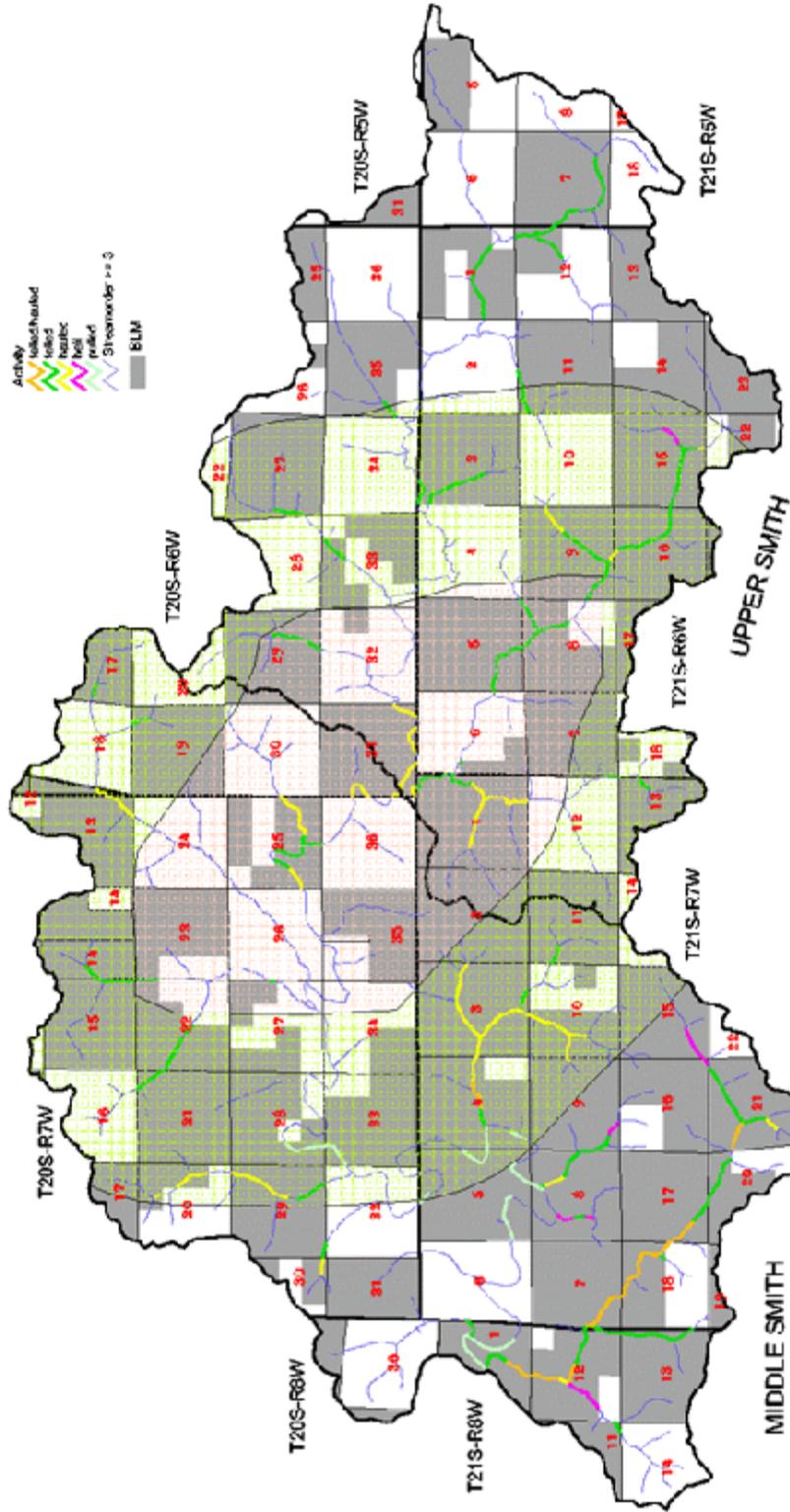
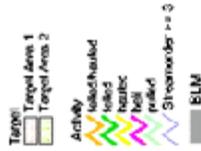


Final  
6/6/00

This map is a technical drawing of the project area. It is not a photograph. It is a map of the project area. It is not a photograph. It is a map of the project area. It is not a photograph. It is a map of the project area.

# Appendix C

## Priority Streams for Large Wood Addition, Upper and Middle Smith River Type of Activity

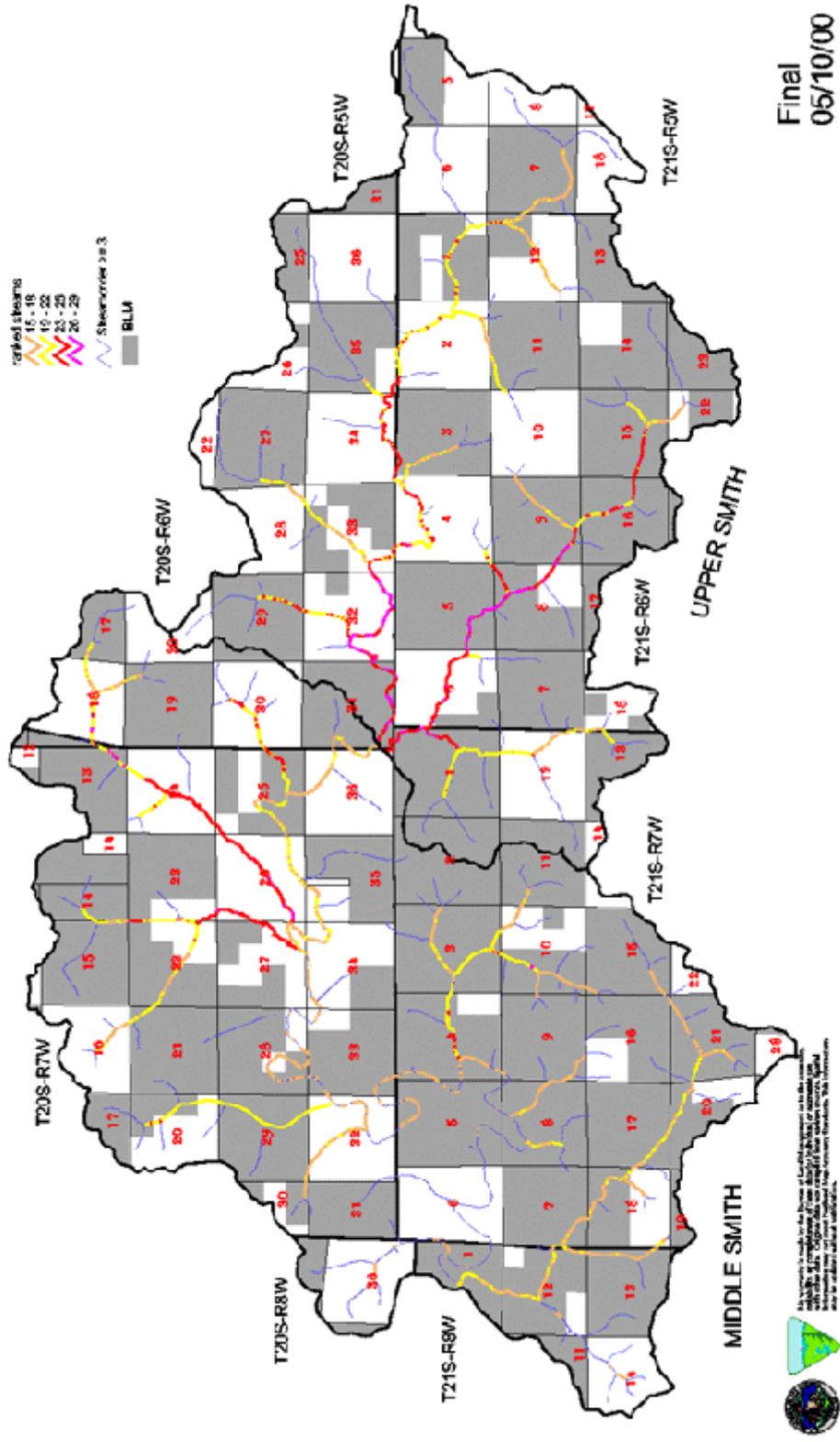


The Oregon Department of Forestry is a member of the National Forest Foundation. The Oregon Department of Forestry is a member of the National Forest Foundation. The Oregon Department of Forestry is a member of the National Forest Foundation.

Final  
05/10/00

Appendix C

Priority Streams for Large Wood Addition, Upper and Middle Smith River  
Ranked Streams



## APPENDIX D

### ISSUE IDENTIFICATION SUMMARY

This appendix summarizes the concerns that were identified by the ID Team during the identification of issues pertinent to this project. No further analysis was deemed necessary in that the mitigations called for were considered adequate to remove the concern as a major issue needing to be analyzed in the main body of the EA.

**Concern #1:**      Salvage and use of excess blowdown trees in Late Successional Reserves requires Regional Ecosystem Office (REO) review.

Discussion:      An alternative that was considered but eliminated, had as part of its proposal the yarding of a blowdown patch of approximately six acres as a source of logs for placement in stream channels. This proposal required REO review.

Mitigation:      During the REO review, it was agreed that the salvage aspect of this proposal did not meet the strict definition of salvaging in blowdown stands of less than 10 acres (S&G's, pg. C-14). Thus this specific alternative was dropped from consideration.

Rationale:      The NFP stipulates that “[s]alvage of dead trees is . . . subject to review by the [REO] . . .” (S&G's, pg. C-13)

**Concern #2:**      Operating in northern spotted owl and marbled murrelet habitat.

Discussion:      This project would occur in spotted owl and murrelet habitat.

Mitigation:      Normal survey protocol, seasonal restrictions.

Rationale:      The Endangered Species Act requires formal consultation on the effects to Threatened and Endangered species prior to project implementation to ensure species are not jeopardized. Consultation will be completed prior to implementation to ensure that NSO and MAMU are not jeopardized. Terms and conditions of the BO will be applied in order to mitigate impacts to acceptable levels.

**Concern #3:**      Exchanging excess high value wood for a greater quantity of lesser value wood for in-stream restoration.

Discussion:      If REO had approved yarding of the 6 acre blowdown within the project area for placement in stream channels it might have been possible to exchange a volume of high grade logs for an even greater volume of lower grade logs, effectively magnifying the volume of LWD that could be placed in streams. The legality of this proposal would need to be determined.

Rationale: Because the REO review determined that excess LWD could not be salvaged this consideration was dropped. Also the legality of exchanging wood was uncertain.

**Concerns #4 & #7:** Decommissioning of roads reduces public access as well as access for fire protection. Loss of management opportunities due to decommissioning.

Discussion: This project proposes to decommission 16.1 miles of road. This would limit public access and also restrict access for fire protection. Concern was also raised about the loss of management opportunities on federal lands with the decommissioning of roads.

Mitigation: Considerable time and energy went into analysis of human uses of roads including an initial evaluation (see Road Analysis Report) as well as key discussions with adjacent landowners and fire protection agency. The BLM has existing right of way (R/W) agreements with adjacent landowners (permittees) in the project area. Government roads under reciprocal R/W agreements cannot be unilaterally decommissioned. Permission to decommission was pursued with the affected parties. Letters giving approval for decommissioning were received from Western Lane District (Fire Protection Agency), Seneca Jones Timber Co. and Roseburg Resources Co. The total roads listed in this EA are the final result of negotiation with and agreement of Right-of-Way permittees who have legal jurisdiction for determining road closures. With the signing of a decision related to this EA document, any of the roads listed could be decommissioned legally in the years to come as funds become available. Roads to be decommissioned will be timed to coincide with BLM management needs behind those roads.

**Concern #5:** Noxious Weeds and use of native seed for restoration of impacts.

Discussion: Noxious weeds could be introduced during operations and nonnative seed could be introduced through seed from seeding of disturbed ground.

Mitigation: Incorporate stipulations into the logging contract to prevent and/or control the spread of noxious weeds through equipment cleaning and use of native grasses or a sterile hybrid wheat.

Rationale: An objective of the RMP is to avoid introducing or spreading noxious weeds or introducing nonnative species (RMP, pg. 74).

**Concern #6:** Liability to stream structures (ie. culverts) from logs moving down stream.

Discussion: Placement of logs in streams could result in liability to stream crossing structures (bridges and culverts) from logs moved by the streams.

Mitigation: Oregon Plan Habitat Restoration Guidelines are being followed for in-stream restoration work. A risk analysis was completed (Fisheries Report) that shows low probability for movement of logs during normal flood events if guidelines for placement are followed.

**Concern #8** Water quality related to stream temperature.

Discussion: These concerns were separated from water quality related to sedimentation.

Mitigation: Because of the protection and growth of riparian forests (passive restoration) through the NFP Riparian Reserves system, it is expected that long term stream temperatures will decrease as streams become shaded. Guidelines for tree felling and pulling include maintaining the general canopy for shade. Analysis showed that individual trees pulled or felled for in-stream restoration would have insignificant effects on stream temperature.

## APPENDIX E

### CRITICAL ELEMENTS OF THE HUMAN ENVIRONMENT

Element	Relevant Authority	Environmental Effect
Air Quality	The Clean Air Act (as amended)	<b>Minimal</b> -Dust particles may be released into airshed as a result of road treatments.
Areas of Critical Environmental Concern	Federal Land Policy and Management Act of 1976 (FLPMA)	<b>None</b> - Project area is not within or near a designated or candidate ACEC
Cultural Resources	National Historic Preservation Act (as amended)	<b>"No Effect"</b> - Expected SHPO Report June, 2000
Environmental Justice	E.O. 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations	<b>None</b> - Minority and low-income populations would not be adversely or disproportionately effected by this action.
Farm Lands (prime or unique)	Surface Mining Control and Reclamation Act of 1977	<b>None</b> - "No discernable effects are anticipated" (PRMP pg. 1-7)
Floodplains	E.O. 11988, as amended, Floodplain Management, 5/24/77	<b>Minimal</b> - Project is meant to reconnect 100 yr. floodplain for salmonid species.
Invasive, Nonnative Species	Lacey Act (as amended) Federal Noxious Weed Act of 1974 (as amended) Endangered Species Act of 1973 (as amended) E.O. 13112, Invasive Species, 2/3/99	<b>Minimal</b> - "The consequences of incorporating these proposed mitigation measures into the proposed project would likely reduce the probability of spreading noxious weeds ..." (Specialist Report)
Native American Religious Concerns	American Indian Religious Freedom Act of 1978	<b>None</b> - No concerns were noted as the result of public contact

Element	Relevant Authority	Environmental Effect
Threatened or Endangered Species	<p>Endangered Species Act of 1973 (as amended)</p> <p>Recovery Plan for the Pacific Bald Eagle, 1986</p> <p>Recovery Plan for the Marbled Murrelet, 1997</p> <p>Biological Opinion and Conference Opinion - Implementation of Land and Resource Plans (USFS) and Resource Management Plans (BLM), March 18, 1997</p>	<p><b>None - (Botanical)</b> - No T&amp;E species noted (Specialist Report).</p> <p><b>Non-jeopardy - (Wildlife)</b> - "... not likely to jeopardize the continued existence of the spotted owl, murrelet, or bald eagle..." (FWS Biological Opinion 6/28/99).</p> <p><b>May effect (Fish)</b> - Oregon Coast steelhead trout and Oregon Coast coho salmon (Biological Assessment pending).</p> <p>T&amp;E species not specifically mentioned do not exist in the analysis area.</p>
Wastes, Hazardous or Solid	Resource Conservation and Recovery Act of 1976 Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended	<b>None</b> - Applicable HazMat policies would be in effect.
Water Quality, Drinking / Ground	Safe Drinking Water Act as amended Clean Water Act of 1977	<b>None</b> - Project is not in a municipal watershed or near a domestic water source.
Wetlands/Riparian Zones	E.O. 11990, Protection of Wetlands, 5/24/77	<b>None</b> - "The selected alternative [of the FEIS] complies with [E.O. 11990]..."(ROD p. 51, para.7)
Wild and Scenic Rivers	Wild and Scenic Rivers Act (as amended) The North Umpqua Wild and Scenic River Plan (July 1992)	<b>None</b> - Project is not within the North Umpqua Scenic River corridor.
Wilderness	Federal Land Policy and Management Act of 1976 Wilderness Act of 1964	<b>None</b> - "There are no lands in the Roseburg District which are eligible as Wilderness Study Areas." (RMP pg. 54)

### OTHER RESOURCES CONSIDERED

Resource	Environmental Effect / Concerns
Land Use (Leases, Grazing etc.)	<b>None</b> - Roads are encumbered under Right-of-Way Agreements # R-645A (Seneca Jones) #R-659 and #R-876 (Roseburg Resources Co.).
Minerals	<b>None</b> - Project has no mining claims.
Recreation	<b>None</b> - There are no recreation sites in the Upper and Middle Smith River subwatersheds.
Visual	<b>None</b> - Project does not effect visual resources.
Other (Adjacent Landowners)	<b>None</b> - Letters sent to notify adjacent landowners.