

# Little Sandy River Habitat Restoration

Environmental Assessment and Finding of No Significant Impact

Environmental Assessment Number OR080-07-09

July 2007

United States Department of the Interior  
Bureau of Land Management  
Oregon State Office, Salem District  
Clackamas County, Oregon

T. 2S, R. 5E, Sections 3, 4, 10 & 11

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This environmental assessment discloses the predicted environmental effects of a proposal to place instream large woody debris on federal and private land located in Township 2S, Range 5E, Sections 3, 4, 10 & 11, Willamette Meridian; and within the Bull Run River 5<sup>th</sup> field Watershed.

As the Nation's principal conservation agency, the Department of Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering economic use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

**BLM/OR/WA/PT-07/069+1972**

# FINDING OF NO SIGNIFICANT IMPACT

## Introduction

The Bureau of Land Management (BLM) has conducted an environmental analysis (Environmental Assessment Number OR080-07-09) for the Little Sandy River Habitat Restoration project.

The project proposal is to place large woody debris by heavy lift helicopter in the Little Sandy River from the mouth to approximate river mile (RM) 3 (East boundary of T 2S, R 5E, Section 11). Additionally, approximately 1.2 miles of natural surface road would be decommissioned in Section 11.

The project is located on BLM, FS and private lands within Township 2S, Range 5E, Sections 3, 4, 10 & 11, Willamette Meridian; and within the Bull Run River 5<sup>th</sup> field Watershed approximately three miles northeast of the City of Sandy, Oregon.

The Little Sandy River Environmental Assessment (EA) documents the environmental analysis of the proposed project. The EA is attached to and incorporated by reference in this Finding of No Significant Impact determination (FONSI). The analysis in this EA is site-specific and supplements analyses found in the *Salem District Proposed Resource Management Plan/Final Environmental Impact Statement*, September 1994 (RMP/FEIS) and in the *Mt Hood National Forest Land and Resource Management Plan/Final Environmental Impact Statement*, 1990 (LRMP/FEIS). This project has been designed to conform to the *Salem District Record of Decision and Resource Management Plan*, May 1995 (RMP) and the *Mt Hood National Forest Land and Resource Management Plan*, 1990 (LRMP) and the related documents which direct and provide the legal framework for this project (*EA Section 1.4*).

The EA and FONSI will be made available for public review **July 25, 2007** to **August 10, 2007**. The notice for public comment will be published in a legal notice by the *Sandy Post* newspaper. Comments received by the Cascades Resource Area of the Salem District Office, 1717 Fabry Road SE, Salem, Oregon 97306, on or before **August 10, 2007** will be considered in making the final decisions for this project.

## Finding of No Significant Impact

Based upon review of the Little Sandy River Habitat Restoration EA and supporting documents, I have determined that the proposed projects are not major federal actions and would not significantly affect the quality of the human environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in context or intensity as defined in 40 CFR 1508.27. There are no significant impacts not already adequately analyzed, or no significant impacts beyond those already analyzed, in the RMP/FEIS or the LRMP/FEIS to which this environmental assessment is tiered. Therefore, supplemental or additional information to the analysis in the RMP/FEIS or the LRMP/FEIS in the form of a new environmental impact statement (EIS) is not needed. This finding is based on the following discussion:

**Context:** Potential effects resulting from the implementation of the proposed project have been analyzed within the context of the Arrow Creek 6<sup>th</sup> field watershed, and the project area boundaries.

The proposed project is limited to approximately three miles of the Little Sandy River [40 CFR 1508.27(a)].

***Intensity:***

1. The proposed project is unlikely to have significant adverse impacts on the affected elements of the environment for the following reasons [40 CFR 1508.27(b) (1)]:
  - Project design features described in *EA section 2.2.1* would reduce the risk of effects to affected resources to be within RMP and LRMP standards and guidelines and to be within the effects described in the RMP/EIS and in the LRMP/EIS. As a result of implementing these design features, any potential effects to the affected resources are anticipated to be site-specific and/or not measurable (i.e. undetectable over the watershed, downstream, and/or outside of the project area)
  - *Flood Plains:* The proposed action is expected to have beneficial effects on floodplain habitat and on the river's ability to access its floodplain.
  - *T & E Fish:* See FONSI bullet 6.
  - *Other fish species with special status:* Redband rainbow trout (Regional Forester's Sensitive Species List) are suspected to exist in the Little Sandy River and coastal cutthroat trout (Mt. Hood National Forest Management Indicator Species) are known to be present. The proposed action is expected to have beneficial effects on habitat for special status fish species, and consequently, is likely to have positive effects on their survival and production.
  - *Essential Fish Habitat:* The proposed action is expected to have beneficial effects on Essential Fish Habitat as designated under the Magnuson-Stevens Fishery Conservation Act. No adverse effects to Essential Fish Habitat are expected.
  - *Soils:* The light, discontinuous compaction of the surface horizon of the mineral soil in the tree selection area would be unlikely to result in any reduction in soil productivity or disturb normal soil processes. The road decommissioning is expected to result in decompaction of the road surface.
  - *Channel Function and Water Quality:* The anticipated alterations to channel morphology and hydraulics will directly increase habitat diversity, aquatic community complexity and structure, and the diversity of aquatic organisms to the benefit of aquatic species in the Little Sandy River. Any increase in turbidity resulting from the project activities is expected to be limited to the location of the disturbance and very short-term (hours).
  
2. The proposed project would not affect:
  - Public health or safety [40 CFR 1508.27(b)(2)];
  - Unique characteristics of the geographic area [40 CFR 1508.27(b)(3)] - There are no historic or cultural resources, parklands, prime farmlands, wild and scenic rivers, wilderness, or ecologically critical areas located within the project area (*EA section 3.1*);
  - Districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor would the proposed projects cause loss or destruction of significant scientific, cultural, or historical resources [40 CFR 1508.27(b)(8)] (*EA section 3.1*).

3. The proposed project is not unique or unusual. The BLM and the FS have experience implementing helicopter wood placement projects and decommissioning roads without highly controversial effects [40 CFR 1508.27(b) (4)], highly uncertain, or unique or unknown risks [40 CFR 1508.27(b) (5)] (*EA section 3.0*).
4. The proposed project does not set a precedent for future actions that may have significant effects, nor does it represent a decision in principle about a future consideration [40 CFR 1508.27(b)(6)]. No hazardous materials or solid waste would be created in the project area. There would be no reduction in the amount of late-successional forest habitat on federal forestlands (NWFP p. C-44) (*EA section 3.0*). The proposed project would not retard or prevent the attainment of the nine ACS objectives (*EA section 3.8.2*).
5. The interdisciplinary team evaluated the proposed project in context of past, present and reasonably foreseeable actions [40 CFR 1508.27(b) (7)]. Potential cumulative effects are described in the attached EA (*EA section 3.0*). The proposed project contributes to cumulative effects to the following resources:
  - Water and Fisheries Resource: The removal of the Little Sandy Diversion Dam in the summer of 2008 will restore flow to the Little Sandy River channel, and will release upwards of 4000 cubic yards of accumulated riverbed sediments. The proposed project is intended to create water velocity breaks and result in retention of a major portion of the accumulated sediment. In addition, in the reaches downstream and upstream of the dam, the project would improve spawning and rearing habitat for threatened anadromous salmonids that are expected to recolonize the Little Sandy River after removal of the dam. Decommissioning of the natural surface road is expected to reduce road derived sediment inputs to the Little Sandy River.
6. The proposed project is not expected to have significant effects to Endangered or Threatened Species listed under the Endangered Species Act (ESA) of 1973 or their habitat [40 CFR 1508.27(b) (9)].

*Northern spotted owl:* Consultation for the proposed project is included in the *Batched Biological Assessment for Projects with the Potential to Modify the Habitats of Northern spotted owls and/or Bald Eagles or Modify Critical Habitat of the Northern spotted owl for the Willamette Province - FY 2007-2008*. A Letter of Concurrence was issued on September 22, 2006 (FWS reference #1-7-06-I-0192). This project would not have significant effects to northern spotted owls due to the nature and timing of the project. No suitable habitat would be removed or downgraded, and suitable habitat would be maintained after individual tree removal for the project. The vicinity has been surveyed to protocol and there were no spotted owl responses. The project would occur outside of the breeding season for spotted owls. The project area is not located in Critical Habitat and is not located within disruption distance of any known spotted owl sites (*EA section 3.1, 5.1.1.1*).

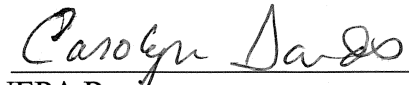
*Fish:* Determinations have been made that the project may affect, but is not likely to adversely affect Lower Columbia River (LCR) steelhead trout, LCR chinook salmon or LCR coho salmon. Consultation with NOAA Fisheries would be conducted under the Aquatic Restoration Biological Opinion, dated April 28, 2007.

The proposed action is expected to have beneficial effects on habitat for T & E fish, and consequently is likely to have positive effects on survival and production. No adverse effects are expected.


7. The project would have no effects on Survey and Manage species of the NW Forest Plan. No Survey and Manage species were detected in the project area.
8. The proposed project does not violate any known Federal, State, or local law or requirement imposed for the protection of the environment [40 CFR 1508.27(b) (10)]. The alternatives are consistent with other Federal agency and State of Oregon land use plans and with the Clackamas County land use plan and zoning ordinances. Any permit requirements associated with the implementation of this project would be obtained and complied with. Project design features would assure that potential impacts to water quality would be in compliance with the State of Oregon In-stream Water Quality Standards and thus the Clean Water Act. Additionally, the proposed project is consistent with applicable land management plans, policies, and programs (*EA section 1.4*).

Prepared by: 

7/25/07  
Date

Reviewed by:   
NEPA Review

7/25/07  
Date

Approved by:   
Cindy Enstrom, Field Manager  
Cascades Resource Area

7/25/07  
Date

# ENVIRONMENTAL ASSESSMENT

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## **1.0 INTRODUCTION**

### **1.1 Summary of the Proposed Project**

The proposal is to place large woody debris (LWD) by heavy lift helicopter in the Little Sandy River from the mouth to approximate river mile (RM) 3 (East boundary of T 2S, R 5E, Section 11), and to decommission approximately 1.2 miles of natural surface road in Section 11.

Project Area Location:

BLM, FS and PGE lands within Township 2S, Range 5E, Sections 3, 4, 10 and 11, Willamette Meridian, within the Bull Run River 5<sup>th</sup> field Watershed approximately three miles northeast of the City of Sandy, Oregon.

### **1.2 Purpose of and Need for Action**

The Little Sandy Diversion Dam, in place for nearly 100 years, is scheduled for removal in 2008. When the dam is removed, full streamflow will be restored to the channel, and several species of anadromous fish will once again have access to the river. Approximately 4,500 cubic yards of riverbed sediments (cobble, gravel and sand) are stored behind the dam and will be released when the dam is removed. Habitat surveys conducted by the Mt. Hood National Forest in 1991 (USDA 1997) and by ODFW in 1997 (ODFW 1997b) have shown that the Little Sandy River downstream of the dam and throughout the project area has low large woody debris (LWD) loading levels, low percentages of gravel substrate and low habitat complexity. There is a need to establish coarse structure in the Little Sandy River prior to removal of the dam in order to retain as much as possible of the sediment stored behind the dam.

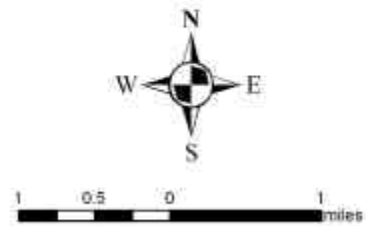
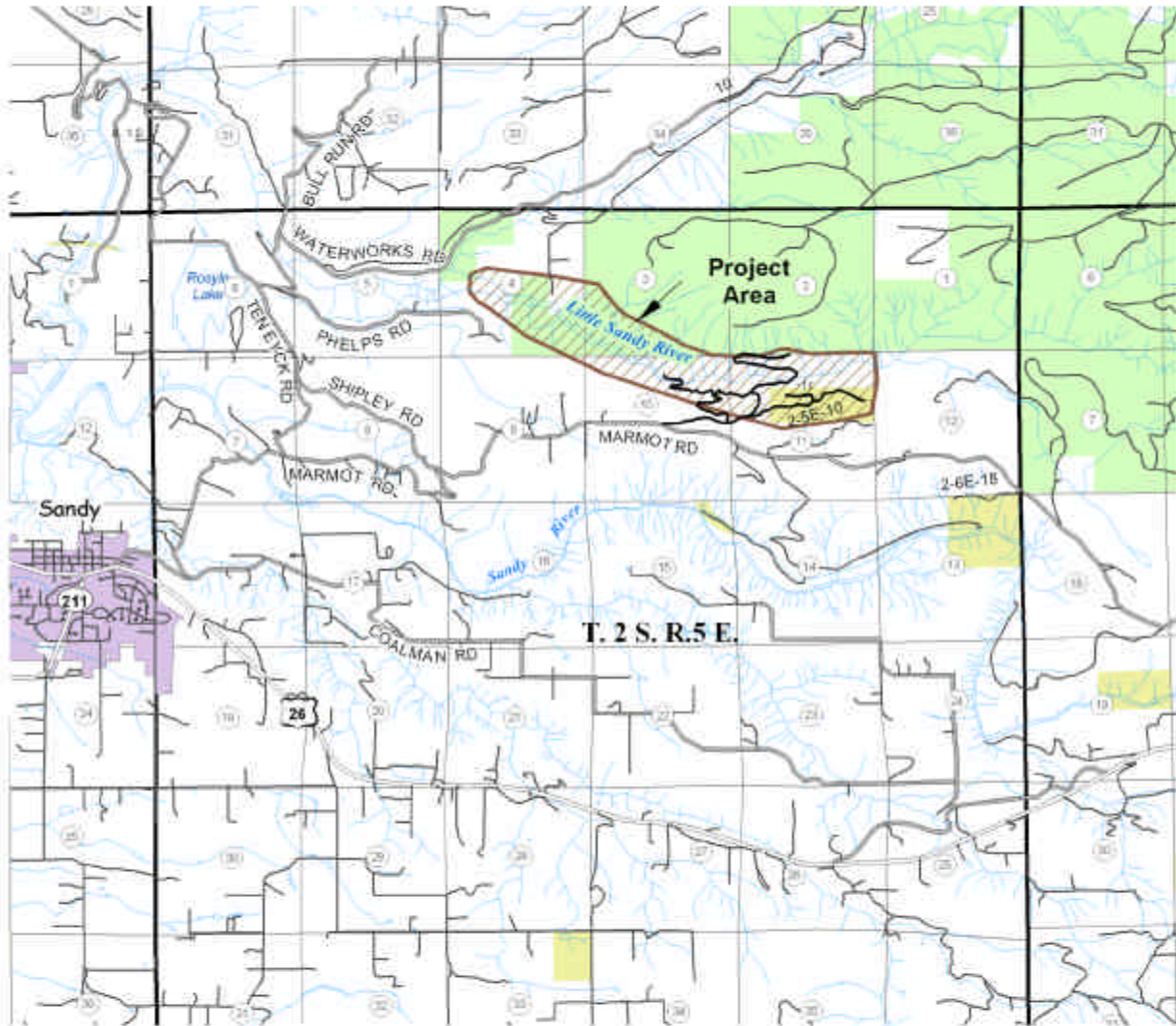
On lands recently acquired by BLM in T. 2S, R. 5E, Section 11, there is a natural surface road (approximately 1.2 miles in length) that is in poor condition and is contributing sediment to the Little Sandy River. The road is not needed for management purposes in the near future. There is a need to reduce environmental effects associated with this existing road.

Desired future condition for the Little Sandy River includes a complex aquatic system, capable of fulfilling the habitat needs of all anadromous fish species that may colonize the river after dam removal, and of those resident species currently present.



Map 1: Vicinity Map

### LITTLE SANDY RIVER LWD PLACEMENT



June 20, 2007

### 1.3 Decision Criteria/Project Objectives

The Cascades Resource Area Field Manager will use the following criteria/objectives in selecting the alternative to be implemented. The field manager would select the alternative that would best meet these criteria. The selected action would:

- Meet the purpose and need of the project (EA section 1.2);
- Comply with the *Salem District Record of Decision and Resource Management Plan*, May 1995 (RMP) and the *Land and Resource Management Plan, Mt Hood National Forest, 1990*; and related documents which direct and provide the legal framework for management of federal lands within the project area (EA section 1.4);
- Not have significant impacts on the affected elements of the environment beyond those already anticipated and addressed in the RMP/EIS and the LRMP/EIS;
- In the reach downstream of the dam (approximately 1.75 miles), add structure and roughness to the channel with the intent of retaining as much as possible of the riverbed sediment stored behind the dam;
- In the reaches downstream and upstream of the dam, increase the habitat complexity, improving the habitat quality for fish species that are expected to recolonize the river after the removal of the Little Sandy Diversion Dam;
- Reduce environmental effects associated with the existing road described in EA section 1.2.
- Minimize erosion and impacts to soil productivity; and
- Not contribute to the expansion of invasive/nonnative weed populations.

### 1.4 Conformance with Land Use Plan, Statutes, Regulations, and other Plans

The following documents direct and provide the legal framework for the Little Sandy River Habitat Restoration project: **1/** *Salem District Record of Decision and Resource Management Plan*, May 1995 (RMP): The RMP has been reviewed and it has been determined that the proposed project conforms to the land use plan terms and conditions (e.g. complies with management goals, objectives, direction, standards and guidelines) as required by 43 CFR 1610.5 (BLM Handbook H1790-1). The proposed project is within the Matrix and Riparian Reserve Land Use Allocations as described in the RMP, pp. 8 and 20-21. **2/** *Land and Resource Management Plan, Mt Hood National Forest, 1990*; **3/** *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl and Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl*, April 1994 (the Northwest Forest Plan, or NWFP); **4/** *Record of Decision for Amendments to the Survey and Manage, Protection Buffer, and Other Mitigation Measures Standards and Guidelines* January, 2001(SM/ROD); and *Implementation of 2003 Survey and Manage Annual Species Review*, December 2003.

On August 20, 2001 President Bush signed into law the *Little Sandy Protection Act* as Public Law 107-30 which provided for:

- Adding all the previously unprotected federal lands (with the exception of a small, isolated BLM parcel in the lower Little Sandy watershed) that drain to the Bull Run and Little Sandy Rivers.

- Applying the same protections (restricted access, timber harvest restrictions, etc.) to the newly added areas as the rest of the Bull Run Management Unit.

The analysis in the Little Sandy River Habitat Restoration Project EA is site-specific and supplements analyses found in the *Salem District Proposed Resource Management Plan/Final Environmental Impact Statement*, September 1994 (RMP/FEIS) and the *Final Environmental Impact Statement, Land and Resource Management Plan, Mt. Hood National Forest, 1990 (LRMP/EIS)*. The RMP/FEIS includes the analysis from 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*, February 1994 (NWFP/FSEIS). The LRMP/EIS is amended by the NWFP/FEIS.

The RMP/FEIS and the LRMP/FEIS are amended by the *Final Supplemental Environmental Impact Statement for Survey and Manage, Protection Buffers, and Other Mitigation Measures in the Northwest Forest Plan*, November 2000 (SM/FSEIS).

The following documents provided additional direction in the development of the proposed action:

1. *Bull Run Watershed Analysis* (1997)

The above documents are incorporated by reference in this environmental analysis and are available for review in the Salem District Office and in the Mt Hood National Forest Headquarters.

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

The Bureau of Land Management (BLM) is aware of the August 1, 2005, U.S. District Court order in Northwest Ecosystem Alliance et al. v. Rey et al. which found portions of the *Final Supplemental Environmental Impact Statement to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines* (January, 2004) (EIS) inadequate. Subsequently in that case, on January 9, 2006, the Court ordered:

- set aside the 2004 Record of Decision *To Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines in Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern spotted Owl* (March, 2004) (2004 ROD) and
- reinstate the 2001 *Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measure Standards and Guidelines* (January, 2001) (2001 ROD), including any amendments or modifications in effect as of March 21, 2004. The BLM is also aware of the November 6, 2006, Ninth Circuit Court opinion in Klamath-Siskiyou Wildlands Center et al. v. Boody et al., No. 06-35214 (CV 03-3124, District of Oregon).

In Northwest Ecosystem Alliance et al. v. Rey et al the U.S. District Court modified its order on October 11, 2006, amending paragraph three of the January 9, 2006 injunction. This most recent order directs: "Defendants shall not authorize, allow, or permit to continue any logging or other ground-disturbing activities on projects to which the 2004 ROD applied unless such activities are in compliance with the 2001 ROD (as the 2001 ROD was amended or modified as of March 21, 2004), except that this order will not apply to:

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

The proposed action meets **Criterion C** above: Riparian and stream improvement projects where the riparian work is riparian planting, obtaining material for placing in-stream, and road or trail decommissioning; and where the stream improvement work is the placement large wood, channel and floodplain reconstruction, or removal of channel diversions.

### **Aquatic Conservation Strategy Review**

On March 30, 2007, the District Court, Western District of Washington, ruled adverse to the US Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA-Fisheries) and USFS and BLM (Agencies) in *Pacific Coast Fed. of Fishermen's Assn. et al v. Natl. Marine Fisheries Service, et al and American Forest Resource Council*, Civ. No. 04-1299RSM (W.D. Wash)( PCFFA IV). Based on violations of the Endangered Species Act (ESA) and the National Environmental Policy Act (NEPA), the Court set aside:

- the USFWS Biological Opinion (March 18, 2004 ),
- the NOAA-Fisheries Biological Opinion for the ACS Amendment (March 19, 2004),
- the ACS Amendment Final Supplemental Environmental Impact Statement (FSEIS) (October 2003), and
- the ACS Amendment adopted by the Record of Decision dated March 22, 2004.

Previously, in *Pacific Coast Fed. Of Fishermen's Assn. v. Natl. Marine Fisheries Service*, 265 F.3d 1028 (9th Cir. 2001)(*PCFFA II*), the United States Court of Appeals for the Ninth Circuit ruled that because the evaluation of a project's consistency with the long-term, watershed level ACS objectives could overlook short-term, site-scale effects that could have serious consequences to a listed species, these short-term, site-scale effects must be considered. EA section 3.0 describes how the Proposed Action meets the Aquatic Conservation Strategy in the context of PCFFA IV and PCFFA II.

## **1.5 Results of Scoping**

No responses to scoping were received.

## **2.0 ALTERNATIVES**

### **2.1 Alternative Development**

Pursuant to Section 102 (2) (E) of the National Environmental Policy Act (NEPA) of 1969, as amended, Federal agencies shall "...study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources."

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

### **2.2 Proposed Action**

The BLM, in partnership with Sandy River Basin Watershed Council, the Mt. Hood National Forest and the Oregon Department of Fish and Wildlife, proposes to place up to 75 pieces of LWD by helicopter in the Little Sandy River. Pieces would range from 18 to 36 inches in diameter at breast height (dbh) and from 40 to 150 feet in length, and would be placed at up to 25 sites from the mouth to approximate river mile (RM) 3. LWD would be placed in configurations of 1–5 pieces per site. As many as possible of the pieces would have intact rootwads, and lengths would be kept as long as possible. The LWD would create debris jams and woody complexes, and serve as traps for bedload materials, woody debris and nutrients. Placement sites would be selected that have existing structural and/or geomorphic features determined most likely to retain the placed wood. Pieces would not be artificially secured to the bed or banks of the stream, but would be allowed to interact naturally with the stream system.

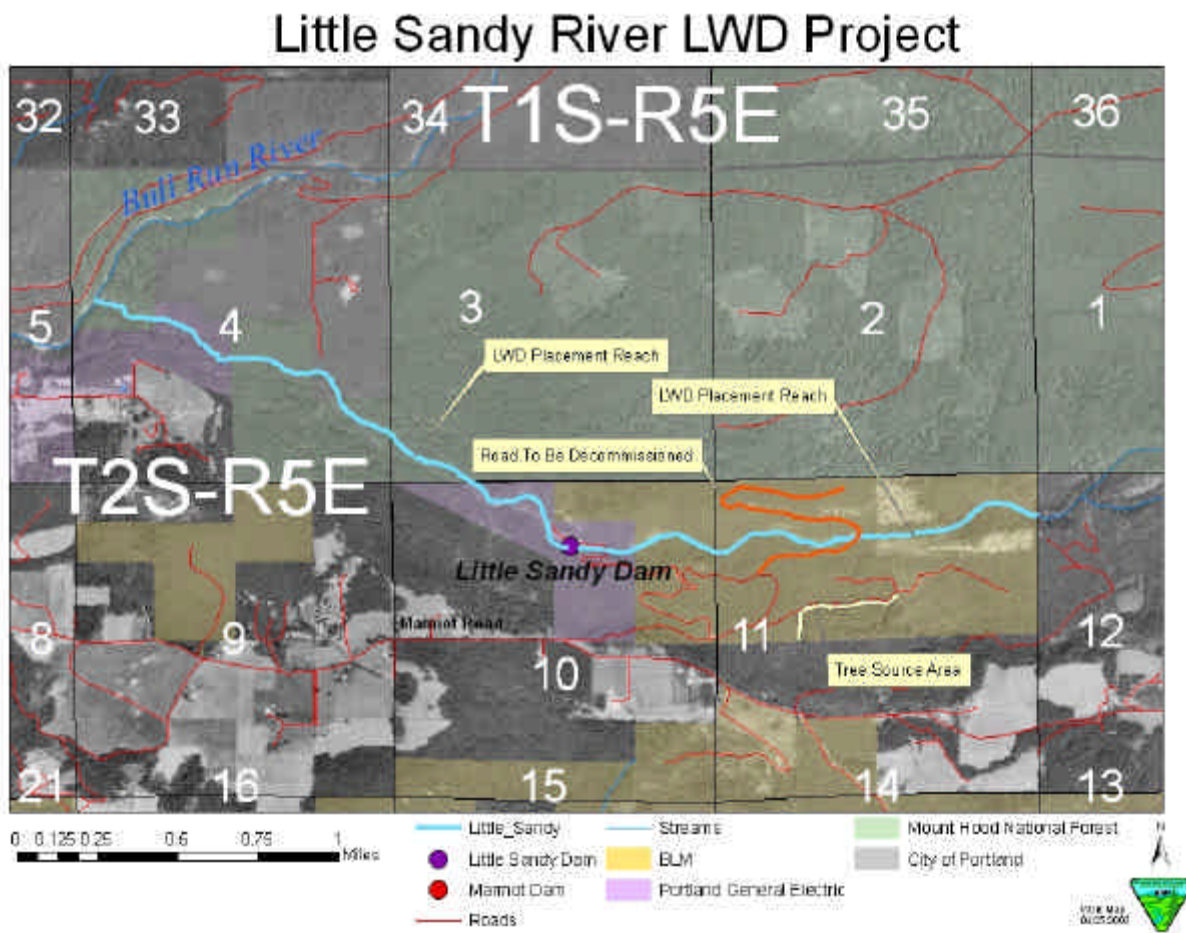
Wood used for the project would be obtained from BLM and USFS lands. Wood from USFS lands is salvaged wood currently stored in log decks at the Zigzag Ranger District, at the Resort at the Mountain and at Porters Rock Pit (located within the Bull Run MU). Wood from BLM lands may come from trees felled as part of the Wildwood-Wemme Hwy. 26 widening project for which a separate EA has been prepared, and may come from a stand of timber near the project area in T. 2S, R. 5E, Sec. 11, SW<sup>1</sup>/<sub>4</sub>, NE<sup>1</sup>/<sub>4</sub>. If trees are taken from that stand, they would be limited to no more than 50 trees in a dbh range of 18-36 inches, taken from within 75 feet of the north and west margins of the stand (see Tree Source Area on Map 2: Proposed Action). Trees would be pushed down with an excavator in order to keep the rootwads attached, then flown directly to the LWD placement sites. Trees would be selected in a manner that would not create openings in the stand or downgrade the suitability of the stand as habitat for the Northern spotted owl. Any trees or logs trucked to the project area would be decked along BLM roads in Section 11, prior to transport by helicopter.

Project implementation would take place between October 2007 and March 2008, depending on the timing of availability of materials (trees from the Hwy 26 widening project) and of a heavy lift helicopter.

Ground disturbance in the tree source area would be limited to the north and west edges of the stand. Soil compaction would be limited by allowing no more than one pass with the excavator along any individual route. Helicopter activities would create considerable noise disturbance. Implementation of the project would occur outside of the Northern spotted owl nesting season.

Decommissioning of the natural surface road would be accomplished by decompacting the road surface with a tracked excavator. Approximately 1.2 miles of road would be decommissioned. Waterbars would be installed to direct runoff to stable, vegetated areas.

**Map 2: Proposed Action**



### 2.2.1 Project Design Features

The following is a summary of the design features that reduce the risk of effects to the affected elements of the environment described in *Section 3.1*.

- In the tree removal area, limit excavator travel on the soil surface to a single pass and keep treads on top of organic material and slash as much as practical to avoid disturbing the mineral soil.
- Do not operate the excavator on soils when they are saturated; limit turning and rocking of the excavator as much as practical to avoid displacing and gouging the mineral soil.
- Limit breakage of trees and branches in the riparian zone as much as practical.
- Locate Helicopter service landings at least 500 feet from any water body. Refuel all power equipment outside of riparian reserves.
- Locate LWD deck site on flat ground away from water.

### 2.3 No Action Alternative

Under the No Action Alternative no LWD placement would occur in the Little Sandy River prior to the removal of the Little Sandy Diversion Dam. Retention in the river channel of the sediment stored behind the dam would be dependent on the existing structural elements in the channel.

Existing LWD loading and the existing low habitat complexity in the Little Sandy River would remain at current levels. No improvement in instream habitat quality for anadromous salmonid fishes would be likely to occur prior to the expected recolonization of the Little Sandy River by anadromous salmonids.

Sediment inputs from a deteriorating, natural surface road on the newly acquired BLM lands would continue unabated.

## 3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

### 3.1 Identification of Affected Elements of the Environment

The interdisciplinary team reviewed the elements of the human environment, required by law, regulation, Executive Order and policy, to determine if they would be affected by the Proposed Action. *Table 1* (Critical Elements of the Environment) and *Table 2* (Other Elements of the Environment) summarize the results of that review. Affected elements are **bold**. All entries apply to the action alternatives, unless otherwise noted.

**Table 1: Review of Critical Elements of the Environment (BLM H-1790-1, Appendix 5)**

<i>Critical Elements Of The Environment</i>	<i>Status: (i.e., Not Present, Not Affected, or Affected)</i>	<i>Does this project contribute to cumulative effects? Yes/No</i>	<i>Remarks</i>	
Air Quality (Clean Air Act)	Not Affected	No	No aspects of the project would alter air quality to an extent greater than would the exhaust of diesel powered heavy equipment.	
Areas of Critical Environmental Concern	Not Present	No		
Cultural Resources	Not Present	No	No cultural resources are known to be present in the proposed project areas. Inventory will be completed prior to project implementation.	
Adverse Impacts on the National Energy Policy (Executive Order 13212)	Not Present	No	There are no known energy resources located in the project area. The Proposed Action will have no effect on energy development, production, supply and/or distribution.	
Environmental Justice (Executive Order 12898)	Not Present	No	The Proposed Action is not anticipated to have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.	
Prime or Unique Farm Lands	Not Present	No		
<b>Flood Plains (Executive Order 11988)</b>	<b>Affected</b>	No	<b>Addressed in text (Section 3.3)</b>	
Hazardous or Solid Wastes	Not Present			
Invasive, Nonnative Species (plants) (Executive Order 13112)			Due the nature of this project and the manner in which material will be transported and placed on site, no adverse effect (i.e. increase) to the invasive species known from the project area is anticipated. Excavator will be washed and inspected prior to entering public lands to ensure that no invasive weeds will be transported to the work site.	
Native American Religious Concerns	Not Present	No	No Native American religious concerns were identified during the public scoping period.	
Threatened or Endangered (T/E) Species and Critical Habitat	<b>Fish</b>	<b>Affected</b>	<b>No</b>	<b>Addressed in text (Section 3.4)</b>
	Plant	Not Present	No	No T&E species or habitat are known or suspected to exist in the project area.
	Wildlife (including designated Critical Habitat)	Species: Not Present Habitat: Not Affected	No	<b>Addressed in text (Section 5.2.1.1)</b>
<b>Water Quality (Surface and Ground)</b>	<b>Affected</b>	<b>No</b>	<b>Addressed in text (Section 3.8)</b>	
Wetlands (Executive Order 11990)	Not Present	No		
Wild and Scenic Rivers	Not Present	No		
Wilderness	Not Present	No		



**Table 2: Review of Other Elements of the Environment Common to All Project Areas**

<i>Other Elements of the Environment</i>	<i>Status: (i.e., Not Present, Not Affected, or Affected)</i>	<i>Does this project contribute to cumulative effects? Yes/No</i>	<i>Remarks If not affected, why?</i>	
<b>Other Fish Species with Bureau or Forest Service Special Status</b>	<b>Affected</b>	<b>No</b>	<b>Addressed in text (Section 3.5)</b>	
<b>Essential Fish Habitat (Magunuson-Stevens Act)</b>	<b>Affected</b>	<b>No</b>	<b>Addressed in text (Section 3.6)</b>	
Late Successional and Old Growth Habitat	Not Affected	No	Removal of individual trees for the project will be limited to the edge of the stand (within 75 feet). Late successional characteristics would be maintained.	
Mineral Resources	Not Present	No		
Recreation	Not Affected	No	This project will not affect water based recreation opportunities. The area affected by the proposed project does not currently experience high levels of visitation.	
<b>Soils</b>	<b>Affected</b>	<b>No</b>	<b>Addressed in text (Section 3.7)</b>	
Special Areas outside ACECs (Within or Adjacent) (RMP p. 33-35)	Not Present	No		
Other Special Status Species / Habitat (Including Survey and Manage)	Plants	Not Present	No	No Special Status Species are known or suspected to exist in the project area.
	Wildlife	Not Present	No	There are no known Special Status or Survey and Manage Species within the proposed project area.
Water Resources – Other (303d listed streams, DEQ 319 assessment, Downstream Beneficial Uses; water quantity, Key watershed, Municipal and Domestic)	Not affected	No	Will not affect downstream beneficial uses or limit water resource objectives.	
Wildlife Structural or Habitat Components - Snags/CWD/ Special Habitats, road densities	Not Affected	No	No existing CWD or snags would be removed and no special habitats would be affected.	

Those elements of the human environment that were determined to be affected are **Flood Plains, Threatened and Endangered fish species, other fish species with special status, Essential Fish Habitat, Soils, Channel Function and Water Quality**. *Sections 3.3-3.9* describe the current conditions and trends of those affected elements, and the environmental effects of the alternatives on those elements.

### 3.2 Existing Watershed Condition

The project is located within The Bull Run 5<sup>th</sup> field Watershed, which is located approximately 20 miles east of Portland and 5 miles west of Mount Hood. The Bull Run currently serves as the primary source of water for Portland metropolitan area residents (Bull Run WA p. 1-3, 1-4). For this reason it is designated as a Tier 2 Key watershed.

The Little Sandy Watershed is a subwatershed to the Bull Run that flows into the Bull Run River below the City of Portland municipal source of water at the headworks. It is often referred separately from the Bull Run since it does not directly provide municipal water (Bull Run WA p. 1-8).

**Table 3: Ownership in the Little Sandy Watershed (Bull Run WA p. 1-8)**

Owner	% of Watershed
Forest Service and BLM	84
City of Portland	1
Portland General Electric	2
Other Private Ownership	13

The dominant feature within the Little Sandy watershed is the Little Sandy River. On this river is a diversion dam that was built to .....

Historically (prior to the construction of the Little Sandy Diversion Dam), Lower Columbia River (LCR) steelhead trout, coho salmon and chinook salmon, all listed as threatened under the Endangered Species Act, inhabited the Little Sandy River.

The Little Sandy Diversion Dam has been in place since 1911, since which time most of the flow in the Little Sandy River has been diverted down a wooden flume to Roslyn Lake. Flows in the river that exceed the capacity of the flume continue down the natural channel, but the current condition of the river channel as habitat for LCR steelhead, coho and chinook is impaired by lack of flow. Flow diversion reduces the quantity of water, decreasing the available habitat area for fish, and artificially creates low flow conditions in which fish are unable to move upstream during their natural migrations. In addition, flow diversion reduces the downstream movement of woody debris and riverbed sediments, both of which are important elements of quality anadromous salmonid habitat.

This Dam is scheduled for removal in 2008. When the dam is removed, full streamflow will be restored to the channel, and several species of anadromous fish will once again have access to the river. Approximately 4,500 cubic yards of riverbed sediments (cobble, gravel and sand) are stored behind the dam and will be released when the dam is removed. Habitat surveys have shown that the Little Sandy River downstream of the dam and throughout the project area has low large woody debris (LWD) loading levels, low percentages of gravel substrate and low habitat complexity.

Critical habitat has been designated for LCR steelhead trout and LCR chinook salmon effective January 2006 by the National Marine Fisheries Service (70 FR 52,630, September 2, 2005).

No critical habitat has been designated for LCR coho salmon. Designated critical habitat for chinook salmon is to RM 1.7 on the Little Sandy River. There is no designated critical habitat for LCR steelhead on the Little Sandy River.

Approximately 1.2 miles of deteriorating, unmaintained road exists in Section 11 on both sides of the Little Sandy River. The road appears to be contributing sediment to the river that may have minor impacts on fish habitat as affected by water quality.

### **3.3 Affected Resource – Flood Plains**

#### *Affected Environment*

Due to the natural confinement of the stream channel, little floodplain exists in the Little Sandy River channel, however, in its current condition the river has little access to what floodplain exists due to diversion of flow.

#### *Environmental Effects*

##### **3.2.1 Proposed Action**

Some LWD will likely be placed in the Flood Plain. Addition of LWD is likely to result in increased ability of the river to access its Flood Plain once a natural hydrograph is restored

##### **3.2.2 Cumulative Effects**

No cumulative effects are expected for floodplain function because the project is small in scale and all effects are expected to be limited to the project area.

##### **3.2.3 No Action Alternative**

Restoration of the natural flow regime to the Little Sandy River will improve floodplain access and function of limited floodplain access and function compared to the current conditions.

### **3.4 Affected Resource - Threatened and Endangered fish species and Critical Habitat**

#### *Affected Environment*

See Existing Watershed Condition

#### *Environmental Effects*

##### **3.4.1 Proposed Action**

The proposed action would increase the habitat complexity in the Little Sandy River. The introduction of structure is intended to result in localized reductions in the velocity of high flows, which in turn, is expected to cause sorting and deposition of bedload materials.

Entrapment of bedload materials composed of sand, gravel and cobble would improve and create spawning areas for fish. Increased habitat complexity also improves rearing habitat for juvenile fish and aids in retaining debris and nutrients. Habitat quality is expected to improve through project implementation, as is the condition of Critical Habitat for ESA listed fish species. Cumulative Effects

Cumulatively this action would add to the recovery of habitat for Threatened and Endangered fish species. This action, in combination with the removal of the Little Sandy Diversion Dam, as well as other restoration actions planned for implementation in the Sandy River Basin, is expected to result in improved aquatic habitat conditions and improved quality of Critical Habitat for ESA listed fish species.

### **3.4.2 No Action Alternative**

No improvement in instream habitat quality for Threatened and Endangered fish species would be likely to occur prior to the expected recolonization of the Little Sandy River by those species.

## **3.5 Affected Resource – Other Special Status Fish Species - Redband rainbow trout; Coastal cutthroat trout**

### *Affected Environment*

#### Redband rainbow trout

Resident redband rainbow trout are on the Regional Forester's Sensitive Species List and are suspected to exist in the Little Sandy River.

#### Coastal cutthroat trout

Coastal cutthroat are considered a Management Indicator Species by the Mt. Hood National Forest and are present in the Little Sandy River. Resident coastal cutthroat trout are found upstream of the Little Sandy Diversion Dam. Some anadromous coastal cutthroat trout may ascend the Little Sandy River during high flow events.

The habitat quality downstream of the dam is impaired by diversion of most of the flow to Roslyn Lake. Flow diversion reduces the quantity of water, decreasing the available habitat area for fish, and artificially creates low flow conditions in which fish are unable to move upstream during their natural migrations. In addition, flow diversion reduces the downstream movement of woody debris and riverbed sediments, both of which are important elements of quality salmonid habitat. Instream habitat throughout the project area has low large woody debris (LWD) loading levels, low percentages of gravel substrate and low habitat complexity.

### *Environmental Effects*

#### **3.5.1 Proposed Action**

The proposed action would increase the habitat complexity in the Little Sandy River. The introduction of structure is intended to result in localized reductions in the velocity of high flows, which in turn, is expected to cause sorting and deposition of bedload materials. Entrapment of bedload materials composed of sand, gravel and cobble would improve and create spawning areas for fish. Increased habitat complexity also improves rearing habitat and aids in retaining debris and nutrients. All of the effects described are expected to result in improved habitat quality for Special Status fish species.

### **3.5.2 Cumulative Effects**

Cumulatively this action would add to the recovery of habitat for Special Status fish species. This action, in combination with the removal of the Little Sandy Diversion Dam, as well as other restoration actions planned for implementation in the Sandy River Basin, is expected to result in improved aquatic habitat conditions.

### **3.5.3 No Action Alternative**

No improvement in instream habitat quality for Special Status fish species would be likely to occur.

## **3.6 Affected Resource – Essential Fish Habitat**

### *Affected Environment*

Since the Little Sandy River was inhabited historically by chinook and coho salmon, it is considered to be Essential Fish Habitat as designated by the Magnuson-Stevens Act. The habitat quality is impaired by diversion of most of the flow to Roslyn Lake. Flow diversion reduces the quantity of water, decreasing the available habitat area for fish, and artificially creates low flow conditions in which fish are unable to move upstream during their natural migrations. In addition, flow diversion reduces the downstream movement of woody debris and riverbed sediments, both of which are important elements of quality anadromous salmonid habitat.

### *Environmental Effects*

#### **3.6.1 Proposed Action**

The proposed action would increase the habitat complexity in the Little Sandy River. The introduction of structure is intended to result in localized reductions in the velocity of high flows, which in turn, is expected to cause sorting and deposition of bedload materials. Entrapment of bedload materials composed of sand, gravel and cobble would improve and create spawning areas for fish. Increased habitat complexity also improves rearing habitat and aids in retaining debris and nutrients. All of the effects described are expected to result in improved quality of Essential Fish Habitat.

#### **3.6.2 Cumulative Effects**

Cumulatively this action, in combination with the removal of the Little Sandy Diversion Dam, as well as other restoration actions planned for implementation in the Sandy River Basin is expected to result in improved Essential Fish Habitat in the Sandy River Basin.

### **3.6.3 No Action Alternative**

No improvement in the quality of Essential Fish Habitat would be likely to occur prior to the expected recolonization of the Little Sandy River by chinook and coho salmon.

## **3.7 Affected Resource – Soils**

### *Affected Environment*

Soils adjacent to the Little Sandy formed in alluvium associated with river deposition in flat areas or colluvium derived from the steep volcanic hillsides that constrain the river. In the source area for trees the soil is mapped as a Bull Run silt loam, 8-30% gradient (mapping unit 9B). This is a deep, well-drained soil and highly productive for Douglas fir. This soil may be compacted if heavy equipment operates on it when the soil is wet.

### *Environmental Effects*

#### **3.7.1 Proposed Action**

Placement of trees in the Little Sandy channel by helicopter would be unlikely to have any detectable effect on the soils adjacent to the channel because all activities would occur within the channel bed.

The proposal to push over and remove trees from a Douglas fir stand nearby would have a direct effect on the soil in that area. Soil bound to the trees root system would be pulled up, inverted and disturbed as the trees are pushed over. This effect is analogous to what occurs when trees are toppled during large wind storms and thus is similar to the natural disturbance regime and part of the normal process of soil formation in these forests.

Removal of the trees after they are toppled is not part of the natural disturbance regime. Any soil that remains attached to the trees roots would be removed from the site along with all of the organic material and nutrients stored in the tree (i.e., carbon, nitrogen, phosphorous, etc.). 50 trees are equivalent to roughly 4% of the above ground biomass in this 25 acre unit. Removal of this material is unlikely to have any long lasting effect on overall site productivity or the nutrient status of the remaining stand and will be quickly regenerated.

Excavator travel on soil surfaces would likely result in light compaction of the surface horizon of the soil (i.e., an increase in bulk density under 5%) in some locations. The surface compaction would be discontinuous and difficult to detect visually. With a careful operator following the Project Design Features (see section 2.2.1) disturbance would be difficult to detect because surface duff layers and vegetation would buffer and protect the mineral soil.

Light, discontinuous compaction of the surface horizon of the mineral soil would be unlikely to result in any reduction in soil productivity or disturb normal soil processes. Soil bulk density and processes would likely recover to pre-disturbance condition within one year following the project.

Decommissioning of the approximately 1.2 miles of natural surface road would result in decompaction of the upper layers of soil in the road bed.

### **3.7.2 Cumulative Effects**

Because the effects of the proposed action on soils are expected to be short-term, (maximum one year) difficult to detect and localized, cumulative effects are not anticipated.

### **3.7.3 No Action Alternative**

No soil disturbance would occur.

## **3.8 Affected Resource – Water Quality and Channel Function**

### *Affected Environment*

The Little Sandy River is a fifth order perennial stream constrained by moderate to steep hillslopes formed in recent volcanics. In general in the project area this stream is a Rosgen B3 stream-type: 2-4% gradient, cobble/boulder substrate and moderately entrenched, although there are sections of lower and steeper grade. This is a stable channel type, resistant to change but functioning below reference conditions due to low levels of LWD and the alteration of normal flow regime below the dam and the capture and deposition of sediment above the dam.

Currently the entire flow of the Little Sandy River, except during times of high discharge, is diverted to Roslyn Lake so that WQ conditions downstream of the dam are not representative of conditions that will exist following removal. The Little Sandy River is subject to the conditions of the Sandy Basin TMDL (<http://www.deq.state.or.us/wq/TMDLs/docs/sandybasin/tmdlwqmp.pdf>) completed by the Oregon Department of Environmental Quality (DEQ) in March 2005. Essentially, the TMDL requires the recovery or maintenance of full potential shade along all perennial streams in the Sandy Basin.

### *Environmental Effects*

#### **3.8.1 Proposed Action**

##### Channel Function

Placing trees into the Little Sandy River would affect streamflow and channel morphology by altering channel geometry, reducing stream velocity and redirecting flow around the obstructions. Site specific effects can be anticipated, but cannot be precisely predicted.

These include: reductions in stream gradient and flow velocity upstream of obstructions with consequent deposition of suspended materials and a fining of (i.e., reduction in the medium particle size) of channel substrates; bed scour and increased velocities downstream of obstructions; increased bank erosion in areas where logs divert stream flow into the bank; reductions in bank erosion in areas where logs divert flows away from the banks.

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

All of these effects are anticipated to be highest immediately after dam removal with a gradual diminution until a form of dynamic equilibrium is reached. Again, this can be anticipated but not precisely predicted because timing of this process will be highly dependent upon the timing, quantity and size of winter peak flow events, which are stochastic in nature. In addition, over time the retained logs are expected to trap wood moving downstream; trees in the riparian canopy will continue to grow, age and eventually fall into the channel. This will result in continued increases in the quantity and complexity of wood in the channel over the next century. It is anticipated that these alterations to channel morphology and hydraulics will directly increase habitat diversity, aquatic community complexity and structure, and the diversity of aquatic organisms to the benefit of aquatic species in the Little Sandy River.

### Water Quality

Downstream of the dam this action would have no immediate effect on water quality since stream flow is currently diverted. Following dam removal, the proposed action is expected to help improve and maintain water quality by slowing the transport of sediment through the system and providing additional slow water velocity areas for the deposition of fine particles (silts, sand and clays). Stream temperature would be largely unaffected although some reduction in stream temperature could result from the increase in sediment deposition and due to shading of surface waters by the trees. Nevertheless, this would be difficult to detect.

Upstream of the dam this proposal will result in some short term (primarily during project implementation) increase in turbidity. Turbidity is unlikely to last longer than several minutes following final placement and is unlikely to be detectable more than 800 meters downstream of the disturbance.

Some local decrease in turbidity in the vicinity of the crossing of the unmaintained road is expected post-project as a result of road decommissioning.

### **3.8.2 Cumulative Effects**

Cumulatively this action would add to the recovery of aquatic habitat, sediment transport regime and functional stream channels in the Sandy Basin. This action is unlikely to result in any alteration of water quality on a cumulative scale because all effects are short term and local.



### 3.8.3 No Action Alternative

The return of a natural discharge regime to the Little Sandy channel will immediately begin to reshape channel form and function following dam removal. Fine sediment (small sand to clay size particles) in storage will likely be flushed out of the system fairly quickly (within a few winters). Larger sediment (sand–cobble sized material) in storage behind the dam will be scoured and transported downstream in “waves”. How, when and where this material is deposited and the rate of transport of this material will be a function of discharge (determined primarily by winter storm events) and roughness elements (large wood, boulders and bedrock, obstructions, etc.) in the channel.

Since the existing channel is largely deficient in roughness elements at this time it is anticipated that transport rates of larger sediment would remain high and much of this material would be scoured and transported out of the system faster than would occur with the higher levels of roughness elements that likely existed prior to the dam. The result would be a system that is generally highly scoured and deficient in the particle size classes that provide for adequate aquatic habitat. In addition, the material that is deposited would tend to lack the variability in depositional patterns created by roughness elements that exists in un-scoured stream systems.

The unmaintained natural surface road would not be decommissioned and would continue to contribute sediment to the Little Sandy River.

## 3.9 Compliance with the Aquatic Conservation Strategy

### 3.9.1 Compliance with Components of the Aquatic Conservation Strategy:

Table 4 shows compliance with the four components of the Aquatic Conservation Strategy for all Action alternatives (1/ Riparian Reserves, 2/ Key Watersheds, 3/ Watershed Analysis and 4/ Watershed Restoration) at the project (site) scale.

**Table 4: Compliance with Components of the Aquatic Conservation Strategy**

<i>ACS Component</i>	<i>Project Consistency</i>
<i>Component 1 - Riparian Reserves</i>	The proposed project would not affect the integrity of Riparian Reserves because no removal of riparian vegetation is proposed.
<i>Component 2 - Key Watershed</i>	The Bull Run 5 <sup>th</sup> field is a Key Watershed. This project would restore stream channel complexity (RMP p. 7). .
<i>Component 3 - Watershed Analysis</i>	The Bull Run Watershed Analysis was conducted in 1997 by the Mt. Hood National Forest. The following are watershed analysis goals and/or findings that apply to or are components of this project: In-channel LWD levels are very low in the Little Sandy River (WA p. 4-303); the stream drainage network expansion should be reduced by reducing the number road/stream crossings (WA p. 7-11).
<i>Component 4 - Watershed Restoration</i>	The proposed project is a restoration project. The restoration objectives of this project are described in EA section 1.3.

### 3.9.2 Documentation of Consistency with the Nine Aquatic Conservation Strategy Objectives for all Action Alternatives

Neither the Proposed Action nor the no Action Alternatives would prevent the attainment of any of the nine Aquatic Conservation Strategy Objectives Current conditions and trends would continue and are described in *EA Section 3.0*. This project was reviewed against the ACS objectives at the project scale (im-or-2007-60). *Table 5* describes the project’s consistency with the nine Aquatic Conservation Strategy Objectives.

**Table 5: Consistency with the Nine Aquatic Conservation Strategy Objectives**

<i>Consistency with ACS Objectives</i>	<i>Reasoning</i>
<p><b>Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.</b></p> <p><i>The Proposed Action does not retard or prevent the attainment of ACS objective 1. The No Action Alternative may retard the attainment of ACS objective 1.</i></p>	<p><b>No Action Alternative:</b> The No Action alternative would maintain the simplified aquatic habitat that currently exists. The current distribution, diversity and complexity of watershed and landscape-scale features would also be maintained.</p> <p><b>Proposed Action:</b> The diversity and complexity of aquatic habitat would be enhanced. The aquatic system would be restored to more closely resemble that to which the species, communities and populations are adapted.</p>
<p><b>Maintain and restore spatial and temporal connectivity within and between watersheds.</b></p> <p><i>Both the Proposed Action and the No Action Alternatives do not retard or prevent the attainment of ACS objective 2.</i></p>	<p><b>No Action Alternative:</b> Current connectivity within and between watersheds would be maintained.</p> <p><b>Proposed Action:</b> Connectivity within the watershed may be improved through improvement of habitat complexity.</p>
<p><b>Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.</b></p> <p><i>The Proposed Action does not retard or prevent the attainment of ACS objective 1. The No Action Alternative may retard the attainment of ACS objective 3.</i></p>	<p><b>No Action Alternative:</b> The current condition of physical integrity would be maintained (EA Section 3.81)</p> <p><b>Proposed Action:</b> The physical integrity of shorelines, banks and bottom configurations would be restored by means of reintroduction of large structural elements and the retention of bedload that currently is routed rapidly through the system.</p>
<p><b>Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems.</b></p> <p><i>Both the Proposed Action and No Action Alternatives do not retard or prevent the attainment of ACS objective 4.</i></p>	<p><b>No Action Alternative:</b> The current condition of the water quality would be maintained.</p> <p><b>Proposed Action:</b> The road decommissioning component of the project would result in improved water quality by reducing road derived sediment inputs to the Little Sandy River. The current condition of the water quality would be improved.</p>

<i>Consistency with ACS Objectives</i>	<i>Reasoning</i>
<p><b>Maintain and restore the sediment regime under which aquatic ecosystems evolved.</b></p> <p><i>The Proposed Action does not retard or prevent the attainment of ACS objective 1. The No Action Alternative may retard the attainment of ACS objective 5.</i></p>	<p><b>No Action Alternative:</b> The sediment currently stored behind the Little Sandy Diversion Dam would be expected to route quickly through the system into the Bull Run River. Upstream of the dam bedload transport would continue at a rapid pace with little instream structure to retain it.</p> <p><b>Proposed Action:</b> Structure addition downstream of the dam would be expected to retain a substantial portion of the bedload stored behind the dam. Throughout the project area the sediment regime would be restored to one more closely resembling that under which the aquatic ecosystems evolved. The proposed road decommissioning would also help restore the sediment regime by reducing point-source sediment inputs on both sides of the Little Sandy River.</p>
<p><b>Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing.</b></p> <p><i>Both the Proposed Action and No Action Alternatives do not retard or prevent the attainment of ACS objective 6.</i></p>	<p><b>No Action Alternative:</b> No change in in-streams flows would be anticipated. Removal of the dam will restore instream flows to the Little Sandy River.</p> <p><b>Proposed Action:</b> The project is not expected to change instream flows, however, it would result in localized reductions in the velocities of high flows, and would restore patterns of sediment, nutrient and wood routing.</p>
<p><b>Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.</b></p> <p><i>Both the Proposed Action and No Action Alternatives do not retard or prevent the attainment of ACS objective 7.</i></p>	<p><b>No Action Alternative:</b> The current condition of flood plains and their likelihood of inundation, as well as the water table elevations in meadows and wetlands is expected to be maintained.</p> <p><b>Proposed Action:</b> The Little Sandy River channel has limited floodplain habitat due to its confinement by canyon walls, however, the addition of large structure is likely to restore floodplain inundation and water table elevation to the extent that the channel allows. Little or no effect is expected in meadows and wetlands.</p>
<p><b>Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.</b></p> <p><i>Both the Proposed Action and No Action Alternatives do not retard or prevent the attainment of ACS objective 8.</i></p>	<p><b>No Action Alternative:</b> Removal of the dam is likely to restore the species composition and structural diversity of riparian plant communities. Development of physical complexity and stability will occur over time as the species composition and structural diversity are restored to the Little Sandy Basin.</p> <p><b>Proposed Action:</b> The project is unlikely to have much effect on the species composition and structural diversity of riparian plant communities.</p>
<p><b>Maintain and restore habitat to support well-distributed populations of native plant, invertebrate and vertebrate riparian-dependent species.</b></p> <p><i>The Proposed Action does not retard or prevent the attainment of ACS objective 1. The No Action Alternative may retard the attainment of ACS objective 9.</i></p>	<p><b>No Action Alternative:</b> The aquatic habitat would remain in a simplified state with limited capability of supporting well-distributed populations of native invertebrate and vertebrate populations.</p> <p><b>Proposed Action:</b> Aquatic habitat in the Little Sandy River would be more capable of supporting well-distributed populations of native invertebrate and vertebrate populations due to increased habitat complexity and diversity.</p>

## 4.0 LIST OF PREPARERS

<i>Resource</i>	<i>Name</i>	<i>Initials</i>	<i>Date</i>
<i>Cultural Resources</i>	Fran Philipek	FP	6-13-07
<i>Hydrology/ Water Quality/Soils</i>	Patrick Hawe	WPH	5-24-07
<i>Botany TES and Special Attention Plant Species</i>	Terry Fennell	TGF	6-13-07
<i>Wildlife TES and Special Attention Animal Species</i>	Jim England	JSE	6-6-07
<i>Fisheries</i>	Dave Roberts	DAR	6-20-07
<i>Recreation Sites and Visual Resources Management and Rural Interface</i>	Zach Jarrett	ZSJ	6-7-07
<i>NEPA</i>	Carolyn Sands	CDS	7-23-07
<i>Silviculture</i>	Dan Schlottmann	DS	6-20-07
<i>Soils</i>	Patrick Hawe	WPH	5-24-07

## 5.0 CONTACTS AND CONSULTATION

### 5.1 Coordination with other Agencies and Organizations

#### 5.1.1 Coordination with U.S. Forest Service

The project is a partnership with the Mt. Hood National Forest. Mt. Hood National Forest personnel have provided review of this EA, and will be assisting with the project design and implementation. Some logs for placement in the Little Sandy River will also be provided by the Mt. Hood National Forest.

#### 5.1.2 Coordination with the Sandy River Basin Watershed Council

The SRBWC is also a partner in the project, providing coordination with landowners and interested parties as well as assistance in project design.

### 5.2 Consultation (ESA Section 7 and Section 106 with SHPO)

#### 5.2.1 ESA Section 7 Consultation

##### 5.2.1.1 US Fish and Wildlife Service

Consultation for the proposed project is included in the *Batched Biological Assessment for Projects with the Potential to Modify the Habitats of Northern spotted owls and/or Bald Eagles or Modify Critical Habitat of the Northern spotted owl for the Willamette Province - FY 2007-2008*. A Letter of Concurrence was issued on September 22, 2006 (FWS reference #1-7-06-I-0192).

This project would not have significant effects to northern spotted owls due to the nature and timing of the project. No suitable habitat would be removed or downgraded, and suitable habitat would be maintained after individual tree removal for the project. The vicinity has been surveyed to protocol and there were no spotted owl responses. The project would occur outside of the breeding season for spotted owls. The project area is not located in Critical Habitat and is not located within disruption distance of any known spotted owl sites.

The Oregon Department of Fish and Wildlife (ODFW, 1997) has no historic documentation or evidence of bull trout in the Sandy River basin. In the past few years two bull trout have been documented in the lower Sandy River. In 2000, the ODFW fish survey crews identified an 18-inch bull trout caught in the trap at Marmot Dam. The other fish was caught and released by an angler in the lower Sandy River below Oxbow Park. These are believed to be strays from the populations in Washington State (Muck, 2001).

Based on lack of historical evidence of Bull trout presence in the Sandy River basin, and lack of sightings by survey crews, Bull trout are not expected to be present within the project area.

#### **5.1.1.2 NOAA Fisheries (NMFS)**

Determinations have been made that the project may affect, but is not likely to adversely affect Lower Columbia River (LCR) steelhead trout, LCR chinook salmon or LCR coho salmon. Consultation with NOAA Fisheries will be conducted under the Aquatic Restoration Biological Opinion, dated April 28, 2007.

#### **5.2.2 Cultural Resources - Consultation with State Historical Preservation Office:**

Under the existing protocol with the State Historic Preservation Office consultation on this project is not required.

### **5.3 Public Scoping and Notification**

A scoping letter was sent on May 7, 2007 to federal, state and municipal government agencies and interested parties on the Cascades Resource Area mailing list. The letter briefly described the project and included a map of the project area. No responses to the scoping letter were received.

#### **5.3.1 EA public comment period**

The EA and FONSI will be made available for public review July 25, 2007 to August 10, 2007. The notice for public comment will be published in a legal notice by the *Sandy Post* newspaper. Comments received by the Cascades Resource Area of the Salem District Office, 1717 Fabry Road SE, Salem, Oregon 97306, on or before August 10, 2007 will be considered in making the final decisions for this project.

## 6.0 MAJOR SOURCES

### 6.1 Major Sources

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