

East Fork Rock Creek In-stream Restoration Environmental Assessment

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LIST OF ACRONYMS AND ABBREVIATIONS

ACEC	Areas of Critical Environmental Concern
ACS	Aquatic Conservation Strategy
BLM	Bureau of Land Management
BO	Biological Opinion
dbh	diameter at breast height
EA	environmental assessment
EFH	essential fish habitat
EO	Executive Order
ESA	Endangered Species Act of 1973
FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy and Management Act of 1976
HAZMAT	hazardous materials
LAA	likely to adversely affect
LWD	large woody debris
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
OC	Oregon Coast
ODEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish and Wildlife
RMP	Resource Management Plan
ROD	Record of Decision
USDA	U.S. Department of Agriculture
USDI	U.S. Department of the Interior
USFWS	U.S. Fish and Wildlife Service
WNAE	Will Not Adversely Effect

Chapter One

PURPOSE AND NEED FOR ACTION

This chapter provides a description of the purpose and need for the action being proposed and analyzed in this environmental assessment (EA).

I. Background

PacifiCorp is the operator of the North Umpqua Hydroelectric Project, FERC Project No. 1927, originally licensed by the Federal Energy Regulatory Commission (FERC) in 1947. FERC issued a new license on November 18, 2003, with a 35 year term. Incorporated into the new license is the June 13, 2001, Settlement Agreement entered into by PacifiCorp, the United States Department of Agriculture-Forest Service, the United States Department of Interior-Bureau of Land Management and other parties. A Tributary Enhancement Fund was included in the Settlement Agreement (Section 19.1) to improve aquatic and riparian habitat conditions in certain tributaries to and reaches of the North Umpqua River. The fund will be used to implement habitat enhancement measures included in the Memorandum of Understanding (MOU) between PacifiCorp and the Oregon Fish and Wildlife Commission for the Rock Creek and Canton Creek drainages. This MOU is included in the Settlement Agreement as Appendix E. One of the measures included in the MOU consists of adding large woody debris (LWD) and boulders to East Fork Rock Creek to improve fish habitat. This habitat enhancement work is also integral to a multi-year effectiveness monitoring project.

The MOU provides for net benefits to resident and anadromous fish in lieu of fish passage at certain North Umpqua Hydroelectric Project dams. The goal of the habitat enhancement program in East Fork Rock Creek is to increase coho salmon production in the drainage by increasing in-stream habitat complexity, and thereby increasing the winter carrying capacity for coho salmon. Habitat complexity will be increased primarily by the addition of LWD and boulders. Increased habitat complexity is expected to benefit all native fish to some degree, but coho salmon are the primary study species.

The proposed project would be coordinated, financed and implemented by PacifiCorp. The project sites are located in East Fork Rock Creek on private lands and on lands managed by the Bureau of Land Management (BLM). On the private lands, both boulders and LWD will be placed in the stream, while only LWD would be placed on BLM-managed lands.

While the majority of the project is located on private lands, the portion of the project proposed for BLM-managed lands is considered to be a federal action. The National Environmental Policy Act (NEPA) requires that the BLM complete an EA for this portion of the project.

Effectiveness monitoring is included as part of the enhancement project to determine how the project benefits anadromous fish, including coho salmon. The effectiveness monitoring study will be used to determine the LWD loading amounts that may be most effective at increasing coho salmon production in the East Fork Rock Creek drainage.

II. Purpose and Need

Aquatic restoration projects are needed to meet the objectives of the Aquatic Conservation Strategy (ACS) and management direction from the Record of Decision for the Resource Management Plan (ROD/RMP) that includes:

- Maintenance and restoration of the species composition and structural diversity of plant communities in riparian zones 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 (ROD/RMP, p. 20).
- As identified through watershed analysis, rehabilitation of streams and other waters to enhance natural populations of anadromous and resident fish. Possible rehabilitation measures will include, but not be limited to, fish passage improvements, instream structures using boulders and log placement to create spawning and rearing habitat, placement of fine and coarse materials for over-wintering habitat, and riparian rehabilitation to establish or release existing coniferous trees (ROD/RMP, p. 40).

Much of the East Fork Rock Creek drainage, including stream riparian areas within the project area, was logged during the 1950s, diminishing the source of future LWD. Large wood is needed in stream channels to create and maintain important fish habitat characteristics over time. Of particular importance to the fish species inhabiting the project area are the roles LWD plays in forming deep pools, providing refuge during high streamflow events, and maintaining a high level of stream channel complexity.

The objective of effectiveness monitoring is to assess the relative effectiveness of various densities of in-stream structures such as large wood at improving the over-winter survival of juvenile coho salmon. Because of the robust nature of the study (i.e., before-after control-treatment design, with densities ranging from one to 25 LWD pieces per stream habitat unit), the study requires a more contiguous stream reach than is available on the adjacent private land. No other suitable stream reaches for this study exist in the Rock Creek drainage. Thus, it is necessary to place a relatively small portion of the project (four structure sites out of a total of 39 sites for the entire project) on BLM-managed lands in order to get the desired number and spacing of treatment and control sites for a successful study.

Large wood is needed in stream channels to create and maintain important fish habitat characteristics over time. It is necessary to place some large wood “structure sites” in stream reaches on BLM administered lands to achieve the desired number and spacing of treatment and control sites for a successful study. The purpose of the LWD placement and the effectiveness monitoring study is: 1) retention of spawning gravels upstream and/or downstream of individual structures; 2) scouring of gravels underneath structures to form pools; 3) retention of smaller organic materials (leaves and branches); 4) reduction of water velocities; and 5) providing a source of stable, complex habitat that is available for fish to use at a variety of flow conditions.

Effectiveness monitoring study will determine how the habitat enhancement benefits anadromous fish and the LWD loading amounts that may be most effective at increasing coho production.

III. Relevant Policies, Assessments, and Plans

This environmental assessment (EA) analyzes the environmental consequences of both the proposed action alternative and the no action alternative to explain the environmental effects of each in the decision-making process. In addition to the ROD/RMP, the PacifiCorp Settlement Agreement, and the MOU between PacifiCorp and the Oregon Fish and Wildlife Commission for the Rock Creek and Canton Creek drainages, this analysis incorporates by reference the assumptions and analysis of consequences provided by the following NEPA analyses:

- The Final Supplemental Environmental Impact Statement (FSEIS) on Management of Habitat for Late-Successional and Old-Growth Related Species Within the Range of the Northern Spotted Owl (USDA and USDI 1994);
- The Final Supplement to the 2004 Supplemental Environmental Impact Statement to Remove or Modify the Survey and Manage Mitigation Measure Standard and Guidelines (USDA and USDI 2007);

Implementation of the actions proposed in this analysis would conform to the requirements of the ROD/RMP, incorporating the standards and guidelines of the Northwest Forest Plan as amended.

Chapter Two

DISCUSSION OF THE ALTERNATIVES

This chapter describes the basic features of the alternatives being analyzed in this environmental assessment.

I. Alternative One – No Action

Under this alternative, the BLM would not place any logs into the East Fork Rock Creek stream channel at this time. The habitat enhancement and effectiveness monitoring would be limited to the private land reach and would be compromised by an incomplete data set. The alternative of “No Action” will be addressed in the discussion of the environmental consequences of the alternatives, as it provides a comparative basis for describing the effects of the proposed action.

II. Alternative Two – Proposed Action

The proposed action on the BLM portion of the project is the placement of a total of 25 logs into four sites along a 600-foot section of East Fork Rock Creek (See Figure 1 for a map of the log placement sites and Figures 2 through 5 for photographs of each site.). With implementation of the proposed action, the habitat enhancement project would be complete and effectiveness monitoring would proceed with a complete data set.

Like those on the private land portion of the project, the logs used on BLM land would be 50 feet in length and at least 24 inches in diameter on the small end. All logs were obtained from hazard trees that were cut down along roads on the Umpqua National Forest. The logs would be placed using a cable yarding system in order to minimize the potential for ground disturbance, as well as eliminate the need for temporary access roads through the adjacent Riparian Reserve. The cable yarder would remain on existing gravel surfaced roads adjacent to the project area. Logs would be placed during the in-stream work period of July 1st through September 15th (ODFW 2000), unless timing extensions were approved by the Oregon Department of Fish and Wildlife (ODFW) and BLM. No new roads would be built; no existing roads would be closed or obliterated.

In this proposed project area, approximately 10 standing trees would serve as tailhold anchors. Tailhold anchors consist of medium-large standing trees (20-40” diameter) with 4”-8” blocks (large pulleys) temporarily attached near the ground in the general area of log drag routes and/or final placement locations. Cable is routed from the yarding machine, through these blocks, and then attached to the log to be moved – thereby achieving directional yarding capability. Prior to attaching any log yarding equipment to a tailhold tree, the tree would be protected from damage by one or more of the precautions noted in the Project Design Features below. Every reasonable effort will be made to utilize trees for tail holds that are far enough away from the work area to allow for safe yarding without felling the trees. In cases where it is not feasible to safely yard the logs without felling the tailhold trees, the trees will remain on site to provide down woody material.

Based on the four log structure sites, it is likely that there would be four log drag routes through the adjacent Riparian Reserve. The cable yarding system described above would be used to move the logs from the staging areas on the road to the placement sites in the creek. These drag routes would range in approximate length from 230 to 430 feet.

It would likely be necessary to cut or push over up to five small trees from along the log drag routes in order to maintain safe operations and avoid disturbance to larger trees and snags. These trees would likely be red alder or big-leaf maple and would have a diameter at breast height (dbh) of approximately eight inches or less. It is anticipated that vine maple and other shrub species would need to be cut from along the log drag routes to prevent log hang-ups.

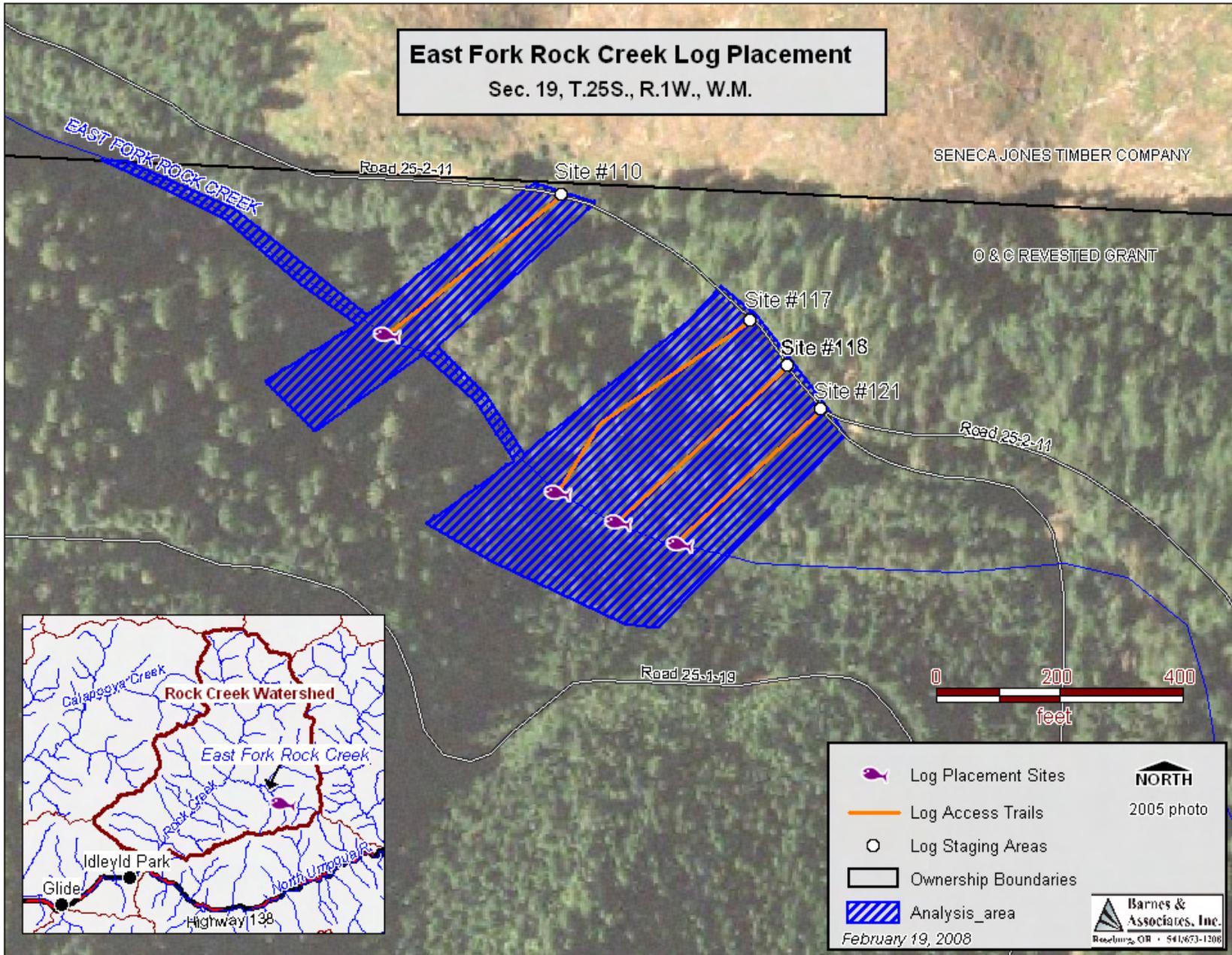


Figure 1. Map of Proposed Project Area.



Figure 2. Proposed Log Placement Site 110 (looking downstream from south side of stream).



Figure 3. Proposed Log Placement Site 117 (looking upstream from north side of stream).



Figure 4. Proposed Log Placement Site 118 (looking downstream from south side of stream).



Figure 5. Proposed Log Placement Site 121 (looking south from north side of stream).

III. Project Design Features of the Action Alternative

To protect Bureau Special Status and SEIS Special Attention Plants and Animals:

Special Status (Threatened or Endangered, Proposed Threatened or Endangered, Candidate Threatened or Endangered, State listed, Bureau Sensitive or Bureau Strategic species) and Special Attention plant and animal sites would be protected where needed to avoid listing of species and conserve candidate species, according to the Roseburg District Record of Decision and Resource Management Plan (ROD/RMP, p. 40-41) (USDI 1995a). Special Status Species are from the July 26, 2007 list prepared by the Bureau of Land Management.

If during implementation of the proposed action, any Bureau Special Status Species were found that were not discovered during pre-project surveys, operations would be suspended and appropriate protective measures would be implemented before operations were resumed.

To prevent the potential for disturbance to northern spotted owls:

Project work activities involving chain saws or heavy equipment would not occur during the standard seasonal restriction period of March 1st to June 30th (Note that the in-stream work period as listed below is July 1st to September 15.).

To protect riparian habitat:

No road building would take place within the Riparian Reserve.

Prior to attaching any log yarding equipment to a tail-hold tree, precautions to protect the tree from damage would be taken. Examples of protective measures include the use of cribbing (sound green limbs between the attachment strap and the bole of the tree to prevent girdling), tree plates, wide canvas straps, and plastic culvert.

The following measures would be used during log yarding to minimize damage to riparian habitat including the protection of mature trees, snags, downed woody debris, and the forest floor:

- 1) Log drag routes would be located and marked on the ground prior to log yarding to minimize the width of the disturbed area;
- 2) Logs would be yarded with one end suspended whenever practical;
- 3) In the event any trees must be felled to provide for safe yarding of logs, they would be retained on-site; and
- 4) All downed wood would be left on-site.

To protect water quality and beneficial uses:

All in-stream work, including log placement, would occur during the ODFW-authorized in-stream work period of July 1st through September 15th (ODFW 2000), unless otherwise approved by ODFW and BLM.

To limit soil erosion and sedimentation from yarding:

Logs will be yarded with one end suspended whenever practical to limit soil compaction and soil erosion. Skid routes will be marked on the ground prior to yarding to minimize the width of the disturbed areas.

In areas where concentrated soil furrowing has resulted in exposed mineral soils, or features that could focus sediment delivery into the stream, a combination of the following design features would be used:

1. Manually pull pack disturbed soils and duff back into the furrow,
2. Add limbs and/or other organic material into the furrow,
3. Hand dig water-bars in furrows located on slopes greater than 30 percent.

One or more of these measures will be used to prevent concentration of surface flow and consequent soil erosion in these areas.

To prevent and/or control the spread of noxious weeds:

Yarding equipment would be required to be clean and free of weed seed prior to entry on to BLM lands (BLM Manual 9015-Integrated Weed Management).

Noxious weed infestations within the project area would be sprayed or mechanically controlled prior to log yarding in order to minimize the existence of viable seeds and plant segments that could be spread down the log access trails during log yarding. Furthermore, the area will be inspected for noxious weeds at least once per year for the first three years following log placement. All detected weeds will be removed within one week from the time they are discovered. In the event herbicides are used, the “FY 2006 Mitigations Standards” as attached in Appendix D will be followed.

To protect cultural resources:

If any objects of cultural value (e.g., historic or prehistoric ruins, graves, fossils, or artifacts) were to be found during the implementation of the proposed action that were not found during pre-project surveys, operations would be suspended until the site has been evaluated for implementation of appropriate mitigation.

To prevent and report accidental spills of petroleum products or other hazardous material and provide for work site cleanup:

The operator would be required to comply with all applicable state and federal laws and regulations concerning the storage, use, and disposal of industrial chemicals and other hazardous materials. All equipment planned for in-stream work would be inspected beforehand for leaks. Accidental spills or discovery of the dumping of any hazardous materials would be reported to the BLM’s Authorized Officer and the procedures outlined in the “Roseburg District Hazardous Materials (HAZMAT) Emergency Response Contingency Plan” would be followed. Hazardous materials (particularly petroleum products) would be stored in durable containers and located so that any accidental spill would be contained and would not drain into watercourses. All landing trash and logging and construction materials would be removed from the project area.

IV. Resources Unaffected by Either Alternative

Resources Not in Project Area

The following resources or concerns are not present and would not be affected by either of the alternatives:

- Special areas (Areas of Critical Environmental Concern, Research Natural Areas, and the like)
- Minority populations or low income populations
- Farm lands (prime or unique)
- Hazardous waste
- Wild and Scenic Rivers
- Wilderness areas

Cultural Resources

The project area was inventoried (August 30 and 31, 2007) for cultural resources and none were discovered. It was determined that there would be no effect to any cultural resources since none were identified in the project area.

Native American Religious Concerns

No Native American religious concerns were identified by the interdisciplinary team or through correspondence with local tribal governments.

Indian Trust Resources

Secretary of Interior, Secretarial Order No. 3175 (November 8, 1993) requires that any significant impact to Indian trust resources be identified and addressed in NEPA documents. There are no known Indian trust resources on the Roseburg District. Therefore, this project is expected to have no impacts to Indian trust resources. Indian trust resources will not be discussed further in this EA.

Environmental Justice

The proposed action is consistent with Executive Order 12898 which addresses Environmental Justice in minority and low-income populations. The BLM has not identified any potential impacts to low-income or minority populations, either internally or through the public involvement process, arising from this type of activity.

Healthy Lands Initiative

This project would be consistent with the Healthy Lands Initiative. This project would be in compliance with the Roseburg District ROD/RMP which has been determined to be consistent with the standards and guidelines for healthy lands (43 CFR 4180.1) at the land use plan scale and associated time lines. Therefore, the Healthy Lands Initiative will not be discussed further in this EA.

Recreation

Recreation would not be impacted by the proposed action because there are no designated recreation sites in or near the project area. The proposed action would not alter the existing recreational opportunities (e.g., hunting and hiking) within the project area.

Visual Resources

The East Fork Rock Creek In-Stream Restoration Project is located on lands classified in the Roseburg District ROD/RMP as Visual Resource Management Classes IV, which, "... allows for major modification of the landscape." (ROD/RMP p. 52). There will be cable-yarding corridors and new structures in the stream. However, these changes are expected to be inconsequential to the overall visual resource since the yarding corridors will be narrow, should be low-intensity and will re-vegetate quickly. The structures will fit in with the existing scenery.

Critical Elements of the Human Environment

"Critical Elements of the Human Environment" is a list of elements specified in BLM Handbook H-1790-1 that must be considered in all EA's. These elements of the human environment are subject to requirements specified in statute, regulation, or Executive Order. Consideration of "Critical Elements of the Human Environment" is given in Appendix A of this EA.

Chapter Three

THE AFFECTED ENVIRONMENT

This chapter summarizes the specific resources that are present or potentially present and could be affected by the proposed action. The proposed action, if implemented, would be undertaken on a 600-foot section of East Fork Rock Creek managed by the BLM. Management of these lands is subject to the Standards and Guidelines of the Northwest Forest Plan and management direction from the Roseburg District Record of Decision and Resource Management Plan. Consequently, the analysis of resources and effects of the proposed action is appropriately scaled to those areas for which the BLM has an internal policy or legislative mandate and responsibility to consider. These are included in the discussion below.

I. Soils

The impacts of soils as a result of this project are minimal. A cable yarding systems will be used for the completion of this aquatic restoration project to minimize soil disturbance. There will be some light compaction and minor soil displacement along the logging corridors which would mostly be confined to the topsoil. The logging corridors should impact less than 7 percent of the project area

II. Vegetation

Vegetation within the proposed project area consists of a mix of hardwood and conifer species typical of a western Cascades riparian ecosystem. Red alder and bigleaf maple dominate the areas immediately adjacent to the stream, while Douglas-fir, western redcedar, and western hemlock dominate the interior portions of the project area. The shrub layer consists mostly of vine maple. Based on the multi-story structural characteristics of the stand, it is generally considered to be in a late-seral condition class. The age of the trees in this area vary greatly generally running 40 to 250 years in age. The Bureau of Land Management Forest Operations Inventory indicates the stand is 228 years old.

III. Fish and Aquatic Resources

East Fork Rock Creek within the project area is an unconstrained, cobble-dominated channel with a gradient of 3 to 4%. The streambank is well vegetated and the channel is well armored with rock. The first terrace above the active floodplain has abundant LWD, but most of it is in the late stages of decomposition. Large conifer trees and snags are deficient within the riparian area and little LWD is present within the active channel. An exception is at project site number 110 where LWD is present. This site was included as part of the project design. The 1993 stream survey for East Fork Rock Creek, conducted by ODFW, also documented the low volume of LWD within the stream channel and the low density of large riparian conifers within the channel recruitment zone (ODFW 1993).

The streamside vegetation is comprised predominately of red alder, bigleaf maple, and vine maple. Scattered conifers exist in the understory. Because the existing plant community is typically long-lived, it may take a century for it to develop into the conifer-dominated plant community that once occupied the site.

East Fork Rock Creek provides habitat for a variety of fish and other aquatic species. Oregon Coast (OC) coho, OC steelhead and cutthroat trout have been documented to occupy the project area. On February 4, 2008, the National Marine Fisheries Service (NMFS) published a final determination to list OC coho as threatened, along with final protective regulations and a final designation of critical habitat. East Fork Rock Creek, including the project site, lies within the area designated as critical habitat (refer to <http://www.nwr.noaa.gov>).

Based on a review of the Oregon BLM Special Status Species List, published in July 2007, the OC steelhead is a Bureau Sensitive Species and a NMFS Species of Concern (4/15/04 69 FR 19975). The OC chinook is also discussed because of East Fork Rock Creek's importance as a cold water source for downstream OC chinook.

The waters, substrate, LWD and associated riparian habitat which support salmon populations are considered "essential fish habitat" (EFH) under the Magnuson-Stevens Fishery Conservation and Management Act (Federal Register 2002 Vol. 67, No. 12). The Act requires that all federal actions which could affect EFH evaluate the potential effects and take measures to conserve EFH. As such, Rock Creek's waters, substrate, and associated riparian habitat (including LWD) are considered EFH for OC coho and OC chinook and the potential effects are discussed below.

A. Federally Threatened Species

Oregon Coast Coho Salmon

OC coho has been observed throughout the lower reaches of Rock Creek, including the project area. OC coho salmon likely use the project area to spawn and rear. Two structural habitat components that coho juveniles rely on during summer and winter are deep pools and LWD. Both of these habitat components are in a reduced condition within the project area due to past timber harvest and road construction. Cool summer water temperatures are important for rearing coho. The project area serves as important over-wintering habitat for winter parr.

B. Bureau Sensitive Species

Oregon Coast Steelhead

OC steelhead trout are well distributed throughout the rivers and streams of the Umpqua basin, and have been observed in the project area. They use the project area as spawning and rearing habitat. Water temperatures are suitable for summer rearing. The cold water supplied by East Fork Rock Creek enhances summer rearing habitat downstream of the project area as well. OC steelhead fry rely on riffle habitats, while larger parr use pool habitat.

C. Other Species

Oregon Coast Chinook

Spring-run OC chinook inhabits the mainstem of Rock Creek more than four stream miles downstream of the project area. Adults enter Rock Creek in the spring and summer and hold in deep pools throughout the summer before spawning in Rock Creek in the fall. Rearing likely occurs in Rock Creek and its low-gradient tributary reaches. They are unlikely to access the project area because of relatively low summer streamflows and the steep gradient between the project area and the mainstem of Rock Creek. However, because East Fork Rock Creek provides an important source of cold water to Rock Creek, it is considered EFH.

IV. Water Resources

Water quality affects the growth and survival of aquatic organisms. The water quality parameter of primary importance within the project area is water temperature. Water quality standards and beneficial uses are determined for each water body by the Oregon Department of Environmental Quality (ODEQ). The state-designated beneficial uses for Rock Creek include anadromous fish passage, resident fish and aquatic life, salmonid fish rearing, and salmonid fish spawning (ODEQ 2007a). Of particular importance is the maintenance of desirable summer temperatures within the project area, as this affects salmonid rearing.

V. Wildlife

The Oregon BLM Special Status Species List, published in July 2007, includes Bureau Sensitive and Bureau Strategic species. A total of 15 vertebrate and 12 invertebrate Special Status wildlife species have been documented or are suspected to occur within the Roseburg BLM District. These are displayed by status, presence and general habitat requirements in Table 1 below.

Table 1. Status, Presence and General Habitat Requirements of Bureau Sensitive and Strategy Species Documented or Suspected of Occurring within the Roseburg District.

Species	Status ¹	Present in Project Area? ²	General Habitat Requirements
BUREAU SENSITIVE			
American Peregrine Falcon <i>Falco peregrinus anatum</i>	BS, SE	Suspected	Cliffs, rock outcrops; open habitats for hunting birds
Bald Eagle <i>Haleaeetus leucocephalus</i>	BS, ST	Suspected	Late successional forests with multi-canopies, generally within two miles of a major water source
Chace Sideband <i>Monadenia chaceana</i>	BSO	Out of Range	Rocky, talus habitats in the Klamath Province and southwards

Species	Status ¹	Present in Project Area? ²	General Habitat Requirements
Columbian White Tailed Deer <i>Odocoileus virginianus leucurus</i>	BSO, CR	Out of Range	Bottomlands, oak/hardwood forests; cover for fawning
Crater Lake Tightcoil <i>Pristiloma arcticum crateris</i>	BSO	No Habitat	Perennially wet areas in late seral forests above 2000ft elevation and east of Interstate-5; seeps, springs, riparian areas
Fisher <i>Martes pennanti</i>	BS	Suspected	Structurally complex forests; mature open forests with large live trees, snags, and down wood.
Foothill Yellow-legged Frog <i>Rana boylei</i>	BSO, V	Suspected	Low gradient streams/ponds; gravel/cobble, bedrock pools
Fringed Myotis <i>Myotis thysanodes</i>	BSO, V	Suspected	Late-successional conifer forests, associated with water; caves, mines, bridges, rock crevices
Green Sideband <i>Monadenia fidelis beryllica</i>	BSO	Out of Range	Coast Range, riparian forests at low elevations; deciduous trees & shrubs in wet, undisturbed forest
Harlequin Duck <i>Histrionicus histrionicus</i>	BS, U	Suspected	Mountain Streams in forested areas on west slope of the Cascade Mountains
Lewis' Woodpecker <i>Melanerpes lewis</i>	BSO, CR	No Habitat	Open woodland habitat near water; open woodland canopy and large diameter dead/dying trees, snag cavities
Northwestern Pond Turtle <i>Clemmys marmorata marmorata</i>	BS, CR	No Habitat	Ponds, low gradient rivers; upland over-wintering habitat, CWD
Oregon Shoulderband <i>Helminthoglypta hertleini</i>	BSO	Suspected	Talus and rocky substrates, grasslands or other open areas with low-lying vegetation
Oregon Vesper Sparrow <i>Pooecetes gramineus affinis</i>	BS, CR	No Habitat	Open habitats such as grasslands, meadows, farmlands
Pallid Bat <i>Antrozous pallidus</i>	BS, V	Suspected	Usually rocky outcroppings near open, dry open areas; occasionally near evergreen forests
Purple Martin <i>Progne subis</i>	BSO, CR	Suspected	Snags cavities in open habitats (e.g. grasslands, brushlands, open woodlands)
Rotund Lanx <i>Lanx subrotundata</i>	BSO	Suspected	Major rivers and large tributaries with cold, well-aerated water and rocky substrate
Scott's Apatanian Caddisfly <i>Allomyia scotti</i>	BSO	Out of Range	High-elevation (>4,000ft), cold streams in the mountainous regions of Oregon
Spotted Tail-dropper <i>Prophysaon vannattaie pardalis</i>	BSO	Out of Range	Mature conifer forests in the Coast Range; associated with significant deciduous tree/shrub component
Townsend's Big-eared Bat <i>Corynorhinus townsendii</i>	BS, CR	Suspected	Late successional forests; Caves, mines, buildings, bridges, tunnels
Western Ridgemussel <i>Gonidea angulata</i>	BS	Suspected	Creeks, rivers, coarse substrates; Umpqua R. and possibly major tribs.
White-Tailed Kite <i>Elanus leucurus</i>	BS	No Habitat	Open grasslands, meadows, emergent wetlands, farmlands, lightly, wooded areas; wooded riparian habitats close to open hunting; tall trees and shrubs
BUREAU STRATEGIC			
Broadwhorl Tightcoil <i>Pristiloma johnsoni</i>	Strategic	Suspected	Moist forest sites, typically with deciduous component; Coast/Cascades in WA, Coast Range in OR, as far south as Lane County
Klamath Tail-Dropper <i>Prophysaon sp. nov.</i>	Strategic	Out of Range	Moist, open areas along streams or springs in Ponderosa Pine forests; as far North as Crater Lake
Merlin <i>Falco columbarius</i>	Strategic	Suspected	Coniferous forests adjacent to open habitats, along forest edges.

Species	Status ¹	Present in Project Area? ²	General Habitat Requirements
Pristine Springsnail <i>Pristinicola hemphilli</i>	Strategic	No Habitat	Shallow, cold, clear springs/seeps; strongly spring-influenced streams, slow-moderate flow; Umpqua R. drainage
Oregon Giant Earthworm <i>Driloleirus macelfreshi</i>	Strategic	No Habitat	Deep, moist, undisturbed soils of riparian forests.

¹ Status abbreviations: FE--Federal Endangered, FT--Federal Threatened, SE--State Endangered, ST--State Threatened, XC--Former Federal Candidate, CR--ODFW Critical, V--ODFW Vulnerable, P--ODFW Peripheral/Naturally Rare, U--ODFW Undetermined, BS-- Bureau Sensitive in Oregon and Washington, BSO-- Bureau Sensitive in Oregon,

² A "Suspected" species has not been documented, however based on literature review, species is expected to occur.
Source: July 26, 2007.

The habitat requirements of each of these species were compared to habitat conditions within the project area. As a result, it was determined the project area contains habitat conditions similar to those required by 13 Bureau Sensitive species and two Bureau Strategic species. In addition, the project area lies within the range of one federally-threatened species. These species are listed in alphabetical order, by category, and are discussed below.

A. Federally-Threatened Species

Northern Spotted Owl

The northern spotted owl inhabits forest stands with multiple shrub and canopy layers, large overstory trees, large snags, and accumulations of coarse woody debris. It nests in large broken-topped trees, cavities in trees and snags, or platforms in tree canopies (Forsman, et. al. 1984).

Historically the area had been surveyed as part of a demography study. There have not been regular surveys in the past eight years. The following information is based on a review of BLM's databases for all known (since 2006) spotted owl sites in western Oregon and known owl activity centers, it was determined that the project area lies approximately 156 meters north of the East Fork Rock Creek Known Owl Activity Center (KOAC IDNO 0356O), a 100 acre area of suitable habitat around a known nest site which is designated to minimize impacts and protect nest sites. The activity center has not been surveyed since 1990. Due to the general stand structure characteristics of the project area, it is considered suitable habitat. Therefore, a seasonal restriction, from March 1 to June 30, for use of chain saws within 65 yards and heavy equipment use within 35 yards of suitable habitat would be required (see Project Design Features).

B. Bureau Sensitive Species

American Peregrine Falcon

American peregrine falcons nest on large cliff faces and travel great distances to forage, preying primarily on other birds. They commonly forage near water bodies, but also use a variety of forest habitats. The closest known nest site is seven miles southwest of the project area. While there is no suitable nesting habitat in close proximity to the project

area, there was a documented sighting eight miles north of the project area, suggesting nesting may occur within the Rock Creek drainage. Therefore, the project area is considered foraging habitat.

Bald Eagle

Bald eagles typically forage near large water bodies and open areas. They nest in large conifers. Based on a review of BLM databases, the closest known nest site is 14 miles west of the project area. There are no bald eagle nests within the project area. However, there have been repeated bald eagle sightings within the Rock Creek drainage, indicating possible nesting. Therefore, the project area is considered foraging habitat.

Fisher

Fisher use structurally complex forests; mature open forests with large live trees, snags, and down wood. They have not been documented to occur within the area. However, based on a literature review, they are suspected to occur.

Foothill Yellow-legged Frog

Foothill yellow-legged frogs occur in and near streams and rivers with a canopy closure greater than 20%. They breed in shallow, slow-flowing waters with a pebble and cobble substrate. There are known populations in the mainstem of Rock Creek, approximately six stream miles downstream of the project area. Therefore, the project area may contain suitable habitat.

Pallid Bat, Townsend's Big-eared Bat, and Fringed Myotis

The pallid bat, Townsend's big-eared bat, and fringed myotis are colony nesters. While their nesting and roosting requirements vary somewhat, they are known to use rock crevices, caves, bridges, buildings, snags, and trees with deeply furrowed bark, loose bark, and cavities, typically in late-successional conifers. No caves, rock crevices, bridges, or buildings occur in the project area. However, a small amount of suitable snag and tree habitat does exist in and near the project area. Therefore, the project area may provide suitable nesting, roosting, and foraging habitat.

Harlequin Duck

Harlequin ducks nest and rear their young along swift mountain streams and rivers, including connected wetlands. They migrate to coastal areas for the remainder of the year. Their primary food during the nesting and rearing seasons is aquatic insects. While the project area lacks classic habitat, it may contain suitable nesting and rearing habitat.

Oregon Shoulderband

This snail has been found in rocky areas such as talus slopes, grasslands or other open areas with low-lying vegetation, and in areas with permanent ground cover or moisture, including rock fissures or woody debris. It does not require old-growth conifer conditions. Because the project area contains these general habitat components, it is considered suitable habitat.

Purple Martin

Purple martins forage in open areas and above open-canopy forests. They nest in colonies within cavities of large snags located in forest openings, meadows, and other open areas. The project area does not contain suitable nesting habitat. The nearest known purple martin colony is located along the North Umpqua River, more than six miles south of the project area, but within foraging distance. Therefore, the project area may provide foraging habitat.

Rotund Lanx

This freshwater snail has been documented on cobble and bedrock in the North Umpqua River where the water was fast, clear, and cold. Because the project area provides cobble substrate and fast, clear, cold water, it may be suitable habitat.

Western Ridgemussel

This bivalve inhabits the course substrates of Umpqua River and possibly major tributaries. Because Rock Creek is a major tributary with course substrates, it is considered suitable habitat.

C. Bureau Strategic Species

Broadwhirl Tightcoil

This snail inhabits moist forest sites, typically with deciduous trees or shrubs. Because the project site contains these habitat components, it is considered suitable habitat.

Merlin

This small falcon inhabits coniferous forests adjacent to open areas and along forest edges. Because the project site contains forest edge habitat, it is considered suitable habitat.

VI. Botany

A. Special Status Species

The following analysis considers Special Status Plants whose known range is within the project area, are documented or suspected to occur in the project area, and whose habitat is documented or suspected to occur within the project area. The project area is within the known range of Kincaid's lupine (*Lupinus sulphureus ssp. kincaidii*), a federally-threatened plant, and the rough popcorn flower (*Plagiobothrys hirtus*), a federally-endangered plant. The project contains suitable habitat for Kincaid's lupine but not for the rough popcorn flower. Field surveys were conducted in the summer of 2007 for both vascular and non-vascular plant species. There were no Special Status Plants detected, including Kincaid's lupine or the rough popcorn flower, in the East Fork Rock Creek Project Area. Therefore, special status plants will not be discussed further in this EA.

B. Noxious Weeds

There are infestations of noxious weeds scattered along both sides of the gravel access road and at the landing sites along the road where the logs will be stockpiled for yarding to the creek. There are also noxious weed plants along the south side of the gravel road at the top of the proposed log drag routes. The noxious weed plant populations do not extend down the log access routes, they are only located along the edge of the gravel road.

The logs were obtained from U.S. Forest Service lands. They are currently stockpiled along the main Rock Creek Road down stream from the East Fork of Rock Creek. It is possible there are some noxious weed seeds on these logs.

Noxious weed species encountered include: St. Johnswort (*Hypericum perforatum*), tansy ragwort (*Senecio jacobea*), Scotch broom (*Cytisus scoparius*), and bull thistle (*Cirsium vulgare*). Infestations range from low to high.

Chapter Four

ENVIRONMENTAL CONSEQUENCES

This chapter discusses specific resource values that may be affected directly, indirectly, or cumulatively. Direct effects are those that occur at the same time and place as the proposed action. An indirect effect is caused by the proposed action, but occurs at a later time or is felt at a different location than the proposed action. A cumulative effect is any small incremental impact that, when considered in combination with other similar or related impacts over time, causes a measurable impact, positive or negative, to the environment. Given the extremely small spatial scale of the project, it is expected any effects would be highly localized and would not be measurable in any cumulative sense.

The analysis area is the entire geographic area where direct and indirect effects could occur. The analysis area for this proposed action encompasses approximately six acres as shown on Figure 1 in Chapter Two, Section II and described as follows: that portion of the 25-2-11.0 road which includes the log staging areas for sites 110, 117, 118, and 121; East Fork Rock Creek from the 121 site downstream approximately 1100 feet to the private land boundary; and the riparian area lying between that portion of the 11.0 road previously described, south to the tailhold trees.

I. Soils

A. Alternative One – No Action Alternative

Under the no action alternative, there would be no immediate change in the soil conditions in the analysis area.

B. Alternative Two – Proposed Action

Under the proposed action dragging the logs from the road to the stream could potentially create some concentrated areas where soil is displaced, compacted and or furrowed. The project design requires treatment of these furrows to prevent concentrations of surface flow and consequent soil erosion in these areas.

Light compaction would mostly be confined to the topsoil and would heal satisfactorily without further mitigation. There would be pockets of heavier compaction, especially along terrain breaks. Where these pockets of compaction occur due to cable-yarding, it would be hand waterbarred and filled with the soil that has been displaced and/or with limbs or other organic debris. This is discussed in detail in Chapter 2 Section III, Project Design Features of the Action Alternative.

II. Vegetation

A. Alternative One – No Action

Under the no action alternative, there would be no immediate change in the current vegetation conditions in the analysis area. All the vegetative components of this late-seral forest stand would continue on their current successional trajectory.

B. Alternative Two – Proposed Action

Under the proposed action, up to five small diameter (with a diameter at breast height of eight inches or smaller) trees – likely red alder or bigleaf maple – would possibly get cut to facilitate the dragging of project logs down to the stream. Any required cutting would likely be to individual trees rather than groups of trees. The generally well-stocked forest canopy would quickly re-occupy any openings created. Because no late-seral or old growth conifers would be cut, there would be no change in stand size or the character of late-seral or old growth conifer habitat in the watershed. Further, there would be no reduction in stream shading because no trees that shade the stream would be cut.

Vine maple and other shrubs would get cut along the log access trails to facilitate log dragging. Other understory vegetation along the log access trails and near the log placement sites would be flattened by the log dragging.

Overall, the indirect effect of cutting individual trees would be a slight improvement to the vigor of neighboring trees, as they would benefit from the slight increase in growth resources.

III. Fish and Aquatic Resources

A. Federally Threatened Species

OC Coho

Alternative One – No Action

Implementation of this alternative would not change fish habitat conditions relating to the quality or quantity of water, substrate, LWD or riparian habitat, nor would it affect the number or health of individuals. The deficiency of in-stream LWD would not change.

Alternative Two – Proposed Action

The proposal would increase the amount of in-stream LWD which would increase the quantity and quality of pools, in-stream cover, side-channel habitat and spawning gravel. These habitat changes would likely result in increased winter parr survival.

At the time of wood placement, there would be small scale, low intensity streambank sloughing at the sites where logs would be placed. Small pools would be scoured into the stream sediments on the downstream edge of placed logs. Turbidity would be increased slightly, but would dissipate within hours following log placement. The increase in

turbidity would be detectable downstream of the work site, but would not be of sufficient magnitude or duration to harm juveniles. However, it is likely some summer parr would be temporarily displaced from desirable habitats during log placement activities. This would disrupt their feeding behavior and increase vulnerability to predation.

An indirect effect would occur during the first winter high flow event following log placement. At this time, increased stream flow energy would further deepen the pools. This would again cause an increase in turbidity, but it would be within the range of natural variability and would not be detectable beyond the analysis area. After high flows have subsided, the placed logs would maintain the deep pools and contribute to increased habitat quality for several decades.

Overall, water quality, stream sediments, LWD and riparian habitat would not be adversely affected.

The Proposed Action alternative would be implemented using Northwest Forest Plan standards and guidelines and Project Design Features. Standards and guidelines are designed to “meet” and “not prevent attainment” of the ASC objectives. Some 13 Project Design Features, listed in Chapter Two, Part III, were specifically developed to meet project objectives relating to the: protection of sensitive and federally listed plants and animals and their habitats, including OC coho; protection of riparian habitat; and protection of water quality; and limitation of soil erosion and sedimentation at the site scale. The following determination assumes compliance with the standards and guidelines and Project Design Features.

Implementation of the Proposed Action alternative would result in slight impacts to OC coho in the Rock Creek project area. A few summer parr would likely be temporarily displaced from desirable habitats during log placement activities; resulting in a short-term disruption of feeding behavior and increased exposure to predation.

B. Bureau Strategic Species

OC Steelhead

Alternative One – No Action

Implementation of this alternative would not change fish habitat conditions relating to the quality or quantity of water, substrate, LWD or riparian habitat, nor would it affect the number or health of individuals. The deficiency of in-stream LWD and pools would not change.

Alternative Two – Proposed Action

The addition of LWD would increase the quantity and quality of pools, in-stream cover, side-channel habitat, bank stability and spawning gravel. These habitat changes would likely result in increased smolt production and an overall increase in population size that would last for several decades.

At the time of log placement, there would be small scale, low intensity streambank sloughing at the site where logs would be placed. Small pools would be scoured into the stream sediments on the downstream edge of placed logs. Turbidity would be increased slightly, but would dissipate within hours following log placement. The increase in turbidity would be detectable downstream of the work site, but would not be of sufficient magnitude or duration to measurably affect fish. However, it is likely some summer par would be temporarily displaced from desirable habitats. This would disrupt their feeding behavior and increase vulnerability to predation.

An indirect effect would occur during the first high flow event following log placement. At this time, increased stream hydrology would further deepen the pools. This would again cause an increase in turbidity, but it would be within the range of natural variability and would not be detectable beyond the analysis area. After high flows have subsided, the placed logs would maintain the deep pools and would contribute to increased stream channel complexity and function for several decades.

C. Other Species

OC Chinook

Alternative One – No Action

Implementation of this alternative would not change fish habitat conditions relating to the quality or quantity of water, substrate, LWD or riparian habitat, nor would it affect the number or health of individuals.

Alternative Two – Proposed Action

Implementation of this alternative would not affect the quantity or quality of water, stream sediments, LWD, bank stability or riparian habitat used by OC chinook.

D. Determination of Effects to Essential Fish Habitat

The Proposed Action alternative would be implemented using Northwest Forest Plan standards and guidelines and Project Design Features. Standards and guidelines are designed to “meet” and “not prevent attainment” of the ASC objectives. Some 13 Project Design Features, listed in Chapter Two, Part III, were specifically developed to meet project objectives relating to the: protection of sensitive and federally listed plants and animals and their habitats, including OC coho; protection of riparian habitat; and protection of water quality; and limitation of soil erosion and sedimentation at the site scale. The following determination assumes compliance with the standards and guidelines and Project Design Features.

Alternative One – No Action

Implementation of this alternative would result in the same effects to Essential Fish Habitat as listed above for OC coho.

Alternative Two – Proposed Action

Implementation of this alternative would result in the same effects to Essential Fish Habitat as listed above for OC coho.

E. Compliance with the Aquatic Conservation Strategy

BLM lands within the project site are managed under the Northwest Forest Plan. This document, in effect since 1994, serves as a recovery plan for at-risk stocks of salmon and steelhead trout within the range of Pacific Ocean anadromy. An important element of the Northwest Forest Plan is the Aquatic Conservation Strategy (ACS) developed to help restore and maintain the ecological health of watersheds and associated riparian-dependant species over broad landscapes of public lands. This requires the biological and physical processes which create and maintain healthy watersheds and aquatic and riparian-dependant species be maintained or restored the within their range of natural variability. The ACS contains four components:

1. *Riparian Reserves*- Lands along streams and unstable or potentially unstable areas which are designated for protection and improvement.
2. *Key Watersheds*- A system of large refugia comprising watersheds (typically 5th field scale) that are crucial to at-risk fish species and stock and provide high water quality which are designated for maintenance and improvement.
3. *Watershed Analysis*- Procedures for conducting analysis that evaluates geological and ecological processes operating in specific watersheds which provide the basis for monitoring and restoration.
4. *Watershed Restoration*- A comprehensive, long-term program of restoring watershed health, aquatic ecosystems and aquatic and riparian-dependent organisms.

The ACS also contains nine objectives. All proposed management actions must be reviewed and found consistent with each of these objectives. Table 2 lists the ACS objectives and provides a brief compliance assessment at the project site scale and the 5th field watershed scale for each.

Table 2. Aquatic Conservation Strategy Assessment.

ACS Objective	Site/Project Scale Assessment	5 th Field Watershed Scale Assessment
	<u>Scale Description:</u> The proposed activities have the potential to affect approximately six acres riparian habitat and approximately 0.5 miles of stream habitat.	<u>Scale Description:</u> The proposed project is located in the Rock Creek 5 th field watershed.
1. Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations, and communities are uniquely adapted.	Project activities would restore stream complexity and diversity by increasing LWD and stream channel geometry. Use of Forest Plan standards and guidelines and Project Design Features would maintain other watershed and landscape-scale features. Therefore, the proposed management activities comply with this objective.	Although project activities would restore stream complexity and diversity at the site scale (and maintain all other watershed and landscape-scale features), the improvement is immeasurable at the watershed scale. Thus, watershed and landscape-scale features are maintained. Therefore, the proposed management activities comply with this objective.

ACS Objective	Site/Project Scale Assessment	5th Field Watershed Scale Assessment
<p>2. Maintain and restore spatial and temporal connectivity within and between watersheds</p>	<p>Project activities, together with the application of Forest Plan standards and guidelines and Project Design Features, would restore the spatial and temporal connectivity between the adjacent riparian zone and East Fork of Rock Creek. Project activities would maintain the level of connectivity between watersheds. Therefore, the proposed management activities comply with this objective.</p>	<p>Although project activities would restore the spatial and temporal connectivity between the adjacent riparian zone and aquatic system (and maintain the level of connectivity between watersheds) at the site scale, the improvement is immeasurable at the watershed scale. Thus, connectivity is maintained. Therefore, the proposed management activities comply with this objective.</p>
<p>3. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations</p>	<p>Placement of LWD into the East Fork of Rock Creek would restore the physical integrity of the aquatic system by increasing bank stability and pools. Therefore, the proposed management activities comply with this objective.</p>	<p>Although site-scale activities would restore the physical integrity of the aquatic system, the improvement is immeasurable at the watershed scale. Thus, the physical integrity of the aquatic system is maintained. Therefore, the proposed management activities comply with this objective.</p>
<p>4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.</p>	<p>Project activities, together with the application of Forest Plan standards and guidelines and Project Design Features, would maintain water quality. Although some increase in turbidity would occur for a short duration, it would maintain the biological, physical and chemical integrity of East Fork Rock Creek. Therefore, the proposed management activities comply with this objective.</p>	<p>Because project activities would maintain water quality at the site scale, they would maintain it at the watershed scale. Therefore, the proposed management activities comply with this objective.</p>
<p>5. Maintain and restore the sediment regime under which aquatic ecosystems evolved.</p>	<p>Project activities, together with the application of Forest Plan standards and guidelines and Project Design Features, would restore the sediment regime. Adding LWD would improve sediment capture and routing through the project site. Therefore, the proposed management activities comply with this objective.</p>	<p>Although project activities would restore the sediment regime at the site scale, the improvement is immeasurable at the watershed scale. Thus, the proposed management activities comply with this objective.</p>
<p>6. Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing.</p>	<p>Project activities, together with the application of Forest Plan standards and guidelines and Project Design Features, would maintain in-stream flows. Therefore, proposed management activities comply with this objective.</p>	<p>Because the project activities would maintain in-stream flows at the site scale, they would maintain instream flows at the watershed scale. Therefore, proposed management activities comply with this objective.</p>

ACS Objective	Site/Project Scale Assessment	5 th Field Watershed Scale Assessment
<p>7. Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and woodlands.</p>	<p>Project activities, together with the application of Forest Plan standards and guidelines and Project Design Features, would maintain floodplain inundation and water table elevation. Therefore, proposed management activities comply with this objective.</p>	<p>Because the project activities would maintain floodplain inundation and water table elevation at the site scale, they would maintain floodplain inundation and water table elevation at the watershed scale. Therefore, proposed management activities comply with this objective.</p>
<p>8. Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.</p>	<p>Project activities, together with the application of Forest Plan standards and guidelines and Project Design Features, would maintain species composition and structural diversity of plant communities. Although up to five small hardwood riparian trees may be cut, they would be retained on site where would contribute to the riparian and aquatic systems. This small potential impact would be partially off-set by the installation of LWD into the aquatic and riparian ecosystems. Therefore, proposed management activities comply with this objective.</p>	<p>Because project activities would maintain species composition and structural diversity of plant communities at the site scale, they would maintain species composition and structural diversity of plant communities at the watershed scale. Therefore, proposed management activities comply with this objective.</p>
<p>9. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate and vertebrate riparian-dependent species.</p>	<p>Project activities, together with the application of Forest Plan standards and guidelines and Project Design Features, would maintain habitat for riparian dependent species. Although up to five small riparian hardwood trees may be cut, they would be retained on site where they would contribute to the riparian and aquatic systems. This small potential impact would be partially off-set by the installation of LWD into the aquatic and riparian ecosystems. Therefore, proposed management activities comply with this objective.</p>	<p>Because project activities would maintain habitat for riparian dependent species at the site scale, they would maintain habitat for riparian dependent species at the watershed scale. Therefore, proposed management activities comply with this objective.</p>

Determination of Compliance

The Proposed Action alternative would be implemented using Northwest Forest Plan standards and guidelines and Project Design Features. Standards and guidelines are designed to “meet” and “not prevent attainment” of the ASC objectives. This determination assumes compliance with the standards and guidelines and Project Design Features. Some 16 Project Design Features, listed in Chapter 2, Part III, were specifically developed to meet project objectives relating to the: protection of sensitive and federally listed plants and animals and their habitats; prevention of disturbance to the northern spotted owl; protection of riparian habitat; protection of water quality; limitation of soil erosion and sedimentation; and prevention and/or control of noxious weeds at the site scale.

Based on a review of this document, implementation of the Proposed Action alternative would comply with all ACS objectives at the site and watershed scales. At the site scale, proposed

management activities would be restorative in nature for ACS objectives 1-3 and 5 and would maintain ASC objectives 4, and 6-9. At the watershed scale, proposed management activities would maintain all ACS objectives. The restorative nature of proposed management activities detected at the site scale is inadequate in both scale and magnitude to produce a corresponding restorative impact detectable at the watershed scale. Thus, they are considered to maintain, rather than restore, the existing condition at the watershed scale. Further, proposed management activities would not retard or prevent attainment of any ACS objective. Therefore, implementation of the Proposed Action alternative is fully consistent with the ACS objectives at the site and watershed scales.

IV. Water Resources

A. Alternative One – No Action

Water quality, including summer temperatures, would not be affected by implementing this alternative and would remain relatively constant over time.

B. Alternative Two – Proposed Action

Project Design Features would effectively minimize potential impacts to water quality. Water temperature would be maintained within the project area. As described in the Fish and Aquatic Resources section above, there would be a small, localized, short duration increase in turbidity during log placement and again during the first winter high flow event. However, this would not be of sufficient magnitude or duration to affect beneficial uses.

V. Wildlife

The potential effects of implementing the No Action and Proposed Action alternatives are described for all federally listed and Special Status wildlife species which occur or are suspected to occur within the projected area are described below. For a complete list of federally listed and Special Status wildlife species inhabiting the Roseburg BLM District and a summary of potential effects, refer to Table 1 in Chapter III, Section V.

A. Federally-Threatened Species

Northern Spotted Owl

Alternative One – No Action

There would be no effect to individuals or designated Critical Habitat.

Alternative Two – Proposed Action

Proposed activities would not occur within Critical Habitat. Therefore, Critical Habitat would not be affected. Established protocols for conducting management activities would be followed to minimize the potential for disturbance during the breeding and

rearing period. Project Design Features would adequately protect the character of existing habitat.

B. Bureau Sensitive Species

American Peregrine Falcon, Bald Eagle, and Purple Martin

No Action and Proposed Action

Because the character of their foraging habitat would not be changed, there would be no effect to individuals or their habitat.

Harlequin Duck

No Action

Because nesting and rearing habitat would not be affected, there would be no effect to individuals or their habitat.

Proposed Action

Because stream channel habitat conditions would be improved, the quality of nesting and rearing habitat would improve slightly for harlequin ducks using the analysis area.

Fisher

No Action and Proposed Action

Because the overall character of their foraging, breeding and rearing habitat would not be changed, there would be no effect to individuals or their habitat.

Yellow-legged Frog

No Action and Proposed Action

Because the project would improve pools and overall stream complexity, it would likely benefit yellow-legged frogs.

Pallid Bat, Townsend's Big-eared Bat, and Fringed Myotis

No Action and Proposed Action

Because the character of their roosting (including breeding) and foraging habitat would not be changed, there would be no effect to individuals or their habitat.

Oregon Shoulderband

No Action

There would be no effect to individuals or their habitat.

Proposed Action

Logs would be yarded across the forest floor. Project Design Features would minimize this potential impact by requiring one end suspension of logs and the use of narrow trails. Because only a small fraction of the analysis area would be impacted for a short period of time, the potential impact to populations would be relatively small.

Log yarding would also disturb habitat on the forest floor. Small vascular plants, lichen, fungi, mosses, downed woody debris, needles, leaves, duff, rock, and soil would be

displaced a short distance. Project Design Features require log access trail width to be minimized, one end of logs to be suspended during yarding, and excessive soil furrowing to be covered with organic material immediately following project work. These measures would minimize disturbance to the forest floor. Because only a small fraction of the analysis area would be impacted for a short period of time, the potential for impact to habitat, or individuals, would be relatively small and of short duration.

Rotund Lanx and Western Ridgemussel

No Action

There would be no effect to individuals or their habitat.

Proposed Action

The turbidity increase associated with log yarding and placement and the subsequent scouring of the pools would be small and of short duration. Therefore, the turbidity increase would not be sufficient to harm individuals.

Placed logs would improve channel complexity and stream function. This would likely improve habitat conditions for the species.

C. Bureau Strategic Species

Broadwhirl Tightcoil

No Action

There would be no effect to individuals or their habitat.

Proposed Action

Logs would be yarded across the forest floor. Project Design Features would minimize this potential impact by requiring one end suspension of logs and the use of narrow trails. Because only a small fraction of the analysis area would be impacted for a short period of time, the potential impact to populations would be relatively small.

Log yarding would also disturb habitat on the forest floor. Small vascular plants, lichen, fungi, mosses, downed woody debris, needles, leaves, duff, rock, and soil would be displaced a short distance. Project Design Features require log access trail width to be minimized, one end of logs to be suspended during yarding, and excessive soil furrowing to be covered with organic material immediately following project work. These measures would minimize disturbance to the forest floor. Because only a small fraction of the analysis area would be impacted for a short period of time, the potential for impact to habitat would be relatively small and of short duration.

Merlin

No Action and Proposed Action

Because the character of foraging and nesting habitat would not be changed, there would be no effect to individuals or their habitat.

D. Wildlife Cumulative Effects

Northern Spotted Owl

Critical Habitat does not occur within the analysis area. Therefore, it will not be affected. Because no late-seral or old growth conifers, hardwoods, multiple canopy layers, large snags or large downed wood would be cut or removed, there would be no change in stand size or the character of late-seral and old growth conifer habitat.

Project work activities which have the potential to cause disturbance would not occur during the critical breeding period from March 1 to June 30. Therefore, production would not be affected. Consequently, no cumulative effects to spotted owls would be anticipated from implementation of either alternative.

VI. Botany

Noxious Weeds

No Action

Individuals and stands of weeds would not be changed. Therefore, there would be no effect to noxious weeds.

Proposed Action

Disturbance to the forest floor from log yarding would create a favorable environment for the spread of noxious weeds by seed. A Project Design Feature calls for the noxious weeds within the project area to be removed prior to project implementation in order to reduce or eliminate the seed source. It is likely some weed seed would remain, thus contributing to the slight spread of noxious weeds. It is also possible some weed seeds will be on the logs that are placed in the riparian areas. However, any such spread would be into a heavily-forested, low-light environment where noxious weeds would not thrive. In addition, the project area will be inspected for noxious weeds for three years following log placement and all detected noxious weeds will be removed. The net result would likely be no net increase or a possible decrease in noxious weed coverage.

VII. Monitoring

The ROD/RMP (pg. 85) specifies that management activities would be monitored and the results reported on an annual basis. Monitoring would be done in accordance with the RMP guidelines outlined in Appendix I of the ROD/RMP.

In addition, effectiveness monitoring of the LWD and boulder in-stream enhancement project (only LWD on BLM-managed lands) is required by the MOU between PacifiCorp and ODFW. Monitoring would be used to determine the density and configuration of LWD that may be most effective at increasing coho salmon production in East Fork Rock Creek and elsewhere in the Rock Creek drainage. The effectiveness of the enhancement project would be measured primarily by comparing juvenile coho salmon carrying capacity (based on abundance estimates)

in the study stream reach before and after the in-stream enhancements, and also by comparing treated habitat units with control habitat units. The abundance estimates would be made by PacifiCorp via winter, spring, and summer snorkeling surveys. Habitat conditions would be monitored via photography and physical measurements. Detailed monitoring methods are described in a study plan (Stillwater Sciences 2006) developed cooperatively with PacifiCorp, ODFW, BLM, and Seneca-Jones.

Chapter Five

CONTACTS, CONSULTATIONS, AND PREPARERS

I. Agencies, Organizations, and Persons Consulted

The Agency is required by law to consult with certain federal and state agencies (40 CFR 1502.25).

A. Threatened and Endangered (T&E) Species Section 7 Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat 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 continued existence of any listed species or destroy or adversely modify critical habitat.

This project is considered to be an aquatic habitat restoration action and is intended to improve habitat conditions for OC coho, a federally threatened species. Under Section 7 ESA Consultation, a biological assessment covering programmatic Aquatic Habitat Restoration Activities in Oregon and Washington That Affect ESA-listed Fish, Wildlife, and Plant Species and Their Critical Habitats was submitted to the National Marine Fisheries Service and the US Fish and Wildlife Service in December of 2006. This consultation was concluded with completion and signature of a Biological Opinion (BO) from the National Marine Fisheries Service (NMFS) on April 28, 2007, and completion and signature of a BO and Letter of Concurrence from the U.S. Fish and Wildlife Service (USFWS) on June 14, 2007. This proposed project falls under the purview of those BO's, and all pertinent project design criteria and conservation measures would be applied to minimize potential impacts on ESA listed plant, wildlife, and fish species found in or near the project area.

The NMFS Biological Opinion referenced above also serves as programmatic consultation under the Magnuson-Stevens Fishery Conservation and Management Act for potential impacts to Essential Fish Habitat (EFH). All pertinent EFH conservation recommendations would be applied to this project.

B. Cultural Resources Section 106 Compliance

Compliance with Section 106 of the National Historic Preservation Act under the guidance of the 1997 National Programmatic Agreement and the 1998 Oregon Protocol has been documented with a Project Tracking Form dated November 9, 2007. A "No Effect" determination was made.

II. Public Notification

The general public was notified via the Roseburg District Planning Update (Winter 2007) which was sent to approximately 150 addressees. These addressees consist of members of the public who have expressed interest in Roseburg District BLM projects.

This EA, and its associated documents, will be provided to certain state, county and local government offices including: USFWS, NMFS, ODEQ, and ODFW. If the decision is made to implement this project, this EA and its associated documents will be sent to the aforementioned state, county, and local government offices.

A 30-day public comment period will be established for review of this EA. A Notice of Availability will be published in The News-Review. The public comment period will begin with publication of the availability notice in The News-Review on May 27, 2008, and end at the close of business June 26, 2008. Comments must be received during this period to be considered for the subsequent decision. This EA and its associated documents will be sent to all parties who request them. If the decision is made to implement this project, a notice will be published in The News-Review and notification sent to all parties who request them.

III. List of Preparers and Contributors

Core Team

Rick Barnes, Barnes & Associates, Inc. – Project manager
Dan Delany, Biological Information Specialists, Inc. – fisheries
John Fagan, Archaeological Investigations Northwest, Inc. – cultural/historic resources
Ron Hamill – non-vascular botany
Andrea Rabe, Rabe Consulting – vascular botany
Tim Vredenburg, Biological Information Specialists, Inc. – wildlife
Jay Walters, Barnes & Associates, Inc. – project management/writer-editor

Others Consulted During EA Process

Isaac Barner, Bureau of Land Management – cultural resources
Jim Brick, Oregon Department of Fish and Wildlife – fisheries
Susan Carter, Bureau of Land Management – botany
Allison C. Clough III, Bureau of Land Management – management representative
Elizabeth Gayner, Bureau of Land Management – wildlife
Rich Grost, PacifiCorp – proposed project
Kirk Haskett, Oregon Department of Fish and Wildlife – fisheries
Paul Heberling, Oregon Department of Environmental Quality – water quality
Scott Lightcap, Bureau of Land Management – fish biologist
Rex McGraw, Bureau of Land Management – NEPA
Jill Ralston, Bureau of Land Management – project coordination
Jeffrey McEnroe, Bureau of Land Management – fish biologist
Jake Winn, Bureau of Land Management – project coordination

IV. Literature and References Cited

Federal Register. 2004. Federal listing status of Species of Concern. 69FR 19975. April 15, 2005.

Forsman, E.D., E.C. Meslow, and H.M. Wight. 1984. Distribution and Biology of the Spotted Owl in Oregon. Wildlife Monogr. 87.

ODEQ (Oregon Department of Environmental Quality). 2007a. Water Pollution Division 41, Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Retrieved from www.deq.state.or.us/wq/standards/uses.htm.

ODEQ. 2007b. Oregon's 2004/2006 Integrated Report. Retrieved from www.deq.state.or.us/wq/assessment/rpt0406/results.asp.

ODFW (Oregon Department of Fish and Wildlife). 2000. Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources.

ODFW. 1993. ODFW Aquatic Inventory Project Stream Report. East Fork Rock Creek.

Stillwater Sciences. 2006. Study Plan for Effectiveness Monitoring of East Fork Rock Creek Habitat Enhancements. Arcata, California. Prepared for PacifiCorp, Portland, Oregon.

USDA (U.S. Department of Agriculture). 1992. Management Recommendations for the Northern Goshawk in the Southwestern United States. Reynolds, Richard T., Graham, Russell T., and Reiser, M. Hildegard. GTR-RM-217, Ft. Collins, CO, Forest Service, Rocky Mountain Forest and Range Experiment Station. 90 p.

USDA and USDI (U.S. Department of the Interior). 1994. 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.

USDA and USDI. 2007. Final Supplement to the 2004 Supplemental Environmental Impact Statement To Remove or Modify the Survey and Mangle Mitigation Measure Standards and Guidelines.

USDI. 1998. Northern Goshawk Management Guidelines (IM-OR-98-012). <http://www.blm.gov/nhp/efoia/or/fy98/IMs/m98012.htm>.

USDI. 1995a. Bureau of Land Management, Roseburg District Record of Decision and Resource Management Plan. Roseburg, Oregon.

USDI 1995b. Bureau of Land Management, Roseburg District Integrated Weed Control Plan and Environmental Assessment. Roseburg, Oregon.

APPENDIX A. CRITICAL ELEMENTS OF THE HUMAN ENVIRONMENT

Element	Relevant Authority	Environmental Effect
Air Quality	The Clean Air Act (as amended)	None - No burning will take place with this project; therefore, there will be no impacts to air quality.
Areas of Critical Environmental Concern (ACEC)	Federal Land Policy and Management Act of 1976 (FLPMA)	None - Project area is not within or near a designated or candidate ACEC.
Cultural Resources	National Historic Preservation Act of 1966 (as amended)	"No Effect" - See Project Tracking Form (Oct. 18, 2006).
Environmental Justice	E.O. 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (Feb. 2, 1994). <i>This EO requires that agencies insure that adverse health or environmental effects do not disproportionately affect minority or low-income populations.</i>	None - The proposed project area is not known to be used by, or disproportionately used by, Native Americans, minorities or low-income populations for specific cultural activities, or at greater rates than the general population. According to 2004 U.S. Census Bureau data approximately 6% of the population of Douglas County was classified as minority status. It is estimated that approximately 14% of the county is below the poverty level (2003 U.S. Census Bureau data).
Farm Lands (prime or unique)	Surface Mining Control and Reclamation Act of 1977. <i>This act seeks to identify and restore prime farmlands and other unique federal land characteristics.</i>	None - "No discernable effects are anticipated" U.S. Department of the Interior, Bureau of Land Management. October 1994. Roseburg District: Final - Roseburg District Proposed Resources Management Plan / Environmental Impact Statement (PRMP/EIS).
Floodplains	E.O. 11988, as amended, Floodplain Management (May 24, 1977). <i>This EO requires agencies to determine if a proposed action will occur in a floodplain and that the action will avoid adverse impacts associated with occupancy and modification of floodplains and avoids floodplain development.</i>	None - Project is not within a 100-yr. floodplain.

Invasive and Nonnative Species	Lacey Act, as amended; federal Noxious Weed Act of 1974 as amended; Endangered Species Act of 1973, as amended; and EO 13112 on Invasive Species dated Feb. 03, 1999. <i>This EO requires the prevention of introduction of invasive species and to provide for their control to minimize their economic, ecological, and human health impacts.</i>	Infestations of noxious weeds are being treated under the Roseburg District Integrated Weed Control Plan (USDI 1995b). Project Design Features are included in the proposed action to prevent or control the spread of noxious weeds.
Native American Religious Concerns	American Indian Religious Freedom Act of 1978. <i>This act seeks to protect and preserve for American Indians the right of exercise of traditional religion including access to religious sites.</i>	There are no known concerns including impacts to Indian trust resources.
Threatened or Endangered Species	Endangered Species Act of 1973 (as amended); The Pacific Coast Recovery Plan for the American Peregrine Falcon (1982); Columbian White-tailed Deer Recovery Plan (1983); Recovery Plan for the Pacific Bald Eagle (1986); and Recovery Plan for the Marbled Murrelet (1997).	Botany – Surveys were performed in 2007 and Kincaid’s lupine (federally-threatened) and the rough popcorn flower (federally-endangered) were not detected. Wildlife – The proposed action is not likely to adversely affect the northern spotted owl. The proposed action would have no effect on the bald eagle or peregrine falcon. Fisheries – The proposed action is likely to adversely affect coho salmon and would adversely affect EFH for coho or chinook salmon in East Fork Rock Creek. This project is in accordance with the NMFS Programmatic Consultation and Biological Opinion dated April 28, 2007.
Wastes, Hazardous or Solid	Resource Conservation and Recovery Act of 1976; Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (as amended). <i>These laws regulate hazardous waste that endangers public health or the environment.</i>	None - Applicable HazMat policies would be in effect.
Water Quality, Drinking / Ground	Clean Water Act of 1987; Safe Drinking Water Act Amendments of 1996; EO 12088, federal compliance with pollution control standards (Oct. 13, 1978); EO 12589 on Superfund implementation (Feb. 23, 1987); and EO 12372 intergovernmental review of federal programs (July 14, 1982).	None - Project is not in a municipal watershed covered under a Memorandum of Understanding. No domestic water users have been identified within one mile downstream from the project area.

Wetlands/Riparian Zones	E.O. 11990, Protection of Wetlands (May 24, 1977). <i>This EO requires federal agencies to avoid destruction or modifications of wetlands and to avoid undertaking or providing assistance for new construction located in wetlands.</i>	None: 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 of 1968 (as amended); The North Umpqua Wild and Scenic River Plan (July 1992).	None - Project is not within the North Umpqua Scenic River corridor.
Wilderness	Federal Land Policy and Management Act of 1976; Wilderness Act of 1964.	None - "There are no lands in the Roseburg District which are eligible as Wilderness Study Areas." (ROD/RMP, p. 54).

APPENDIX B. OTHER RESOURCES CONSIDERED

Resource	Environmental Effect / Concerns
Land Use (Leases, Grazing, etc.)	None – The proposed project has no conflicting land uses. The roads to the project site are owned or controlled by the BLM and the roads at the project site are owned and controlled by the BLM.
Minerals	None - Project is not within any mining claims or leases of record.
Recreation	Minimal short-term impacts – The proposed action would not alter the existing recreational opportunities within the project area.
Visual Resources	None - The Visual Resource Management classification for this area is IV. This classification allows major modification of the landscape. The proposed action would be consistent with ROD/RMP direction.

APPENDIX C. BOTANY SUMMARY

Roseburg District BLM

Project Name: East Fork Rock Creek In-stream Restoration
Prepared By: Andréa Rabe
Project Type: In-Stream Restoration
Date: September 2007
Location: T25S-R01W-Sec. 19

The following two tables include species which are documented or suspected to occur within the Roseburg District BLM. These species lists are derived from the USDI Bureau of Land Management Oregon State Office (IM-OR-2007-072). Sensitive Species (i.e. Federally Threatened and Endangered, State Threatened and Endangered, and Bureau Sensitive botanic species) suspected or documented to occur within the project area are detailed in **Table 1** and may be further discussed if necessary. Strategic Species are identified in **Table 2**.

A species list is available in the Unit Descriptions and Survey Summary that was completed under contract with Rabe Consulting, dated August 2007.

BLM districts are responsible to assess and review the effects of a proposed action on Federally listed Threatened or Endangered species, State listed Threatened or Endangered species, or Bureau Sensitive species. To comply with Bureau policy, Districts may use one or more of the following techniques:

- a. Evaluation of species-habitat associations and presence of potential habitat.
- b. Application of conservation strategies, plans, and other formalized conservation mechanisms.
- c. Review of existing survey records, inventories, and spatial data.
- d. Utilization of professional research and literature and other technology transfer methods.
- e. Use of expertise, both internal and external, that is based on documented, substantiated professional rationale.
- f. Complete pre-project survey, monitoring, and inventory for species that are based on technically sound and logistically feasible methods while considering staffing and funding constraints.

When Districts determine that additional conservation measures are necessary, options for conservation include, but are not limited to: modifying a project (e.g. timing, placement, and intensity), using buffers to protect sites, or implementing habitat restoration activities (IM-OR-2003-054, IM-OR-2007-072).

Table 1 : State Directors Sensitive Species List

Species	Within species range?	Habitat Present?	Species Present?	Reason for concern or no concern	Surveys Completed	Mitigation Measures
Threatened & Endangered Species						
<i>Lupinus sulphureus</i> ssp. <i>kincaidii</i> Kincaid's lupine (T)	Yes	Yes	No	Surveys performed, not detected.	July 2007	N/A
<i>Plagiobothrys hirtus</i> Rough popcorn flower (E)	Yes	No	No	No habitat present.	N/A	N/A
Sensitive Species						
<i>Chiloscyphus gemmiparus</i> Liverwort	Yes	No	No	No habitat present.	N/A	N/A
<i>Diplophyllum plicatum</i> Liverwort	Yes	No	No	No habitat present	N/A	N/A
<i>Entosthodon fascicularis</i> Moss	Yes	No	No	No habitat present	N/A	N/A
<i>Gymnomitrium concinnatum</i> Liverwort	Yes	No	No	No habitat present.	N/A	N/A
<i>Helodium blandowii</i> Moss	Yes	No	No	No habitat present	N/A	N/A
<i>Meesia uliginosa</i>	Yes	No	No	No habitat present	N/A	N/A

Species	Within species range?	Habitat Present?	Species Present?	Reason for concern or no concern	Surveys Completed	Mitigation Measures
Moss						
<i>Schistostega pennata</i> Moss	Yes	No	No	No habitat present	N/A	N/A
<i>Tayloria serrata</i> Moss	Yes	No	No	No habitat present	N/A	N/A
<i>Tetraphis geniculata</i> Moss	Yes	No	No	No habitat present	N/A	N/A
<i>Tetraplodon mnioides</i> Moss	Yes	No	No	No habitat present	N/A	N/A
<i>Tomentypnum nitens</i> Moss	Yes	No	No	No habitat present	N/A	N/A
<i>Tortula mucronifolia</i> Moss	Yes	No	No	No habitat present	N/A	N/A
<i>Trematodon boasii</i> Moss	Yes	No	No	No habitat present.	N/A	N/A
<i>Bridgeoporus nobilissimus</i> Giant polypore fungus	No	No	N/A	No habitat present.	N/A	N/A
<i>Cudonia monticola</i> Fungi	Yes	No	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Dermocybe humboldtensis</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Gomphus kauffmanii</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Helvella crassitunicata</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Leucogaster citrinus</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Otidea smithii</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Phaeocollybia californica</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Phaeocollybia dissiliens</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Phaeocollybia gregaria</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Phaeocollybia olivacea</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Phaeocollybia oregonensis</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Phaeocollybia pseudofestiva</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Phaeocollybia scatesiae</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Phaeocollybia sipei</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Phaeocollybia spacidea</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Pseudorhizina californica</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Ramaria amyloidea</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Ramaria gelatiniaurantia</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Ramaria largentii</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A

Species	Within species range?	Habitat Present?	Species Present?	Reason for concern or no concern	Surveys Completed	Mitigation Measures
<i>Ramaria spinulosa</i> var. <i>diminutiva</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Rhizopogon chamalelotinus</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Rhizopogon exiguus</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Sowerbyella rhenana</i> Fungus	Yes	Yes	N/A	Surveys Not Practical. ¹	N/A	N/A
<i>Adiantum jordanii</i> California maiden-hair	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Arabis koehleri</i> var. <i>koehleri</i> Koehler's rockcress	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Asplenium septentrionale</i> Grass-fern	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Bensoniella oregana</i> Bensonia	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Botrychium minganense</i> Gray moonwort	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Calochortus coxii</i> Crinite mariposa-lily	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Calochortus umpquaensis</i> Umpqua mariposa-lily	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Carex brevicaulis</i> Short stemmed sedge	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Carex comosa</i> Bristly sedge	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Carex gynodynamis</i> Hairy sedge	Yes	No	No	No habitat present	N/A	N/A
<i>Carex serratodens</i> Saw-tooth sedge	Yes	No	No	No habitat present.	N/A	N/A
<i>Cimicifuga elata</i> Tall bugbane	Yes	No	No	No habitat present.	N/A	N/A
<i>Eschscholzia caespitosa</i> Gold poppy	Yes	No	No	No habitat present.	N/A	N/A
<i>Eucephalus vialis</i> Wayside aster	Yes	No	No	No habitat present.	N/A	N/A
<i>Horkelia congesta</i> ssp. <i>congesta</i> Shaggy horkelia	Yes	No	No	No habitat present.	N/A	N/A
<i>Horkelia tridentata</i> ssp. <i>tridentata</i> Three-toothed horkelia	Yes	No	No	No habitat present.	N/A	N/A
<i>Iliamna latibracteata</i> California globe-mallow	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Kalmiopsis fragrans</i> Fragrant kalmiopsis	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Lathyrus holochlorus</i> Thin-leaved peavine	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Limnanthes gracilis</i> var. <i>gracilis</i> Slender meadow-foam	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Pellaea andromedifolia</i> Coffee fern	Yes	No	No	No habitat present	N/A	N/A
<i>Perideridia erythrorhiza</i> Red-rooted yampah	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Polystichum californicum</i> California sword-fern	Yes	No	N/A	No habitat present.	N/A	N/A

Species	Within species range?	Habitat Present?	Species Present?	Reason for concern or no concern	Surveys Completed	Mitigation Measures
<i>Romanzoffia thompsonii</i> Thompson's mistmaiden	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Schoenoplectus subterminalis</i> Water clubrush	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Scirpus pendulus</i> Drooping rush	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Sisyrinchium hitchcockii</i> Hitchcock's blue-eyed grass	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Utricularia gibba</i> Humped bladderwort	Yes	No	N/A	No habitat present	N/A	N/A
<i>Utricularia minor</i> Lesser bladderwort	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Wolffia borealis</i> Dotted water-meal	Yes	No	N/A	No habitat present.	N/A	N/A
<i>Wolffia columbiana</i> Columbia water-meal	Yes	No	N/A	No habitat present.	N/A	N/A

¹ Surveys are considered not practical for these species (Category B) or their status is undetermined (Category E or F) based on the 2003 Annual Species Review (IM-OR-2004-034).

Surveys were conducted for Oregon State Office State Director’s Strategic Species List species. To enable an early warning for species which may become Threatened or Endangered in the future, Districts are encouraged to collect occurrence data on species for which more information is needed to determine status within the state. Until the status of such species changes, Oregon State Office State Director’s Strategic Species List species will not be considered as Special Status Species for management purposes (IM-OR-2003-054, IM-OR-2007-072)

Table 2. USDI Bureau of Land Management – Oregon State Office State Director’s Strategic Species List

Scientific Name	Roseburg Occurrence?	Occurrence in the Project Area?
Bryophytes		
<i>Cephaloziella spinigera</i>	Suspected	None Observed
<i>Grimmia anomala</i>	Suspected	None Observed
<i>Scouleria marginata</i>	Suspected	None Observed
Fungi		
<i>Cazia flexiascus</i>	Suspected	None Observed
<i>Choiromyces alveolatus</i>	Suspected	None Observed
<i>Clavariadelphus subfastigiatus</i>	Documented	None Observed
<i>Gymnomyces monosporus</i>	Documented	None Observed
<i>Helvella elastica</i>	Documented	None Observed
<i>Hygrophorus albicarneus</i>	Suspected	None Observed
<i>Mycena quinaultensis</i>	Suspected	None Observed
<i>Nolanea verna</i> var. <i>isodiametrica</i>	Suspected	None Observed
<i>Plectania milleri</i>	Suspected	None Observed
<i>Psathyrella quercicola</i>	Suspected	None Observed
<i>Ramaria abietina</i>	Documented	None Observed
<i>Ramaria rubribrunnescens</i>	Suspected	None Observed
<i>Ramaria suecica</i>	Documented	None Observed
<i>Ramaria thiersii</i>	Suspected	None Observed
<i>Rhizopogon brunneiniger</i>	Suspected	None Observed
<i>Rhizopogon clavitisporus</i>	Suspected	None Observed
<i>Rhizopogon flavofibrillosus</i>	Documented	None Observed
<i>Rhizopogon variabilisporus</i>	Suspected	None Observed
<i>Sarcodon fuscoindicus</i>	Documented	None Observed
Lichens		
<i>Buellia oidalea</i>	Suspected	None Observed
<i>Lecanora pringlei</i>	Suspected	None Observed
<i>Lecidea dolodes</i>	Suspected	None Observed
<i>Leptogium rivale</i>	Documented	None Observed
<i>Leptogium teretiusculum</i>	Documented	None Observed
<i>Peltula euploca</i>	Suspected	None Observed
<i>Vezdaea stipitata</i>	Documented	None Observed
Vascular Plants		
<i>Camissonia ovata</i>	Suspected	None Observed
<i>Frasera umpquaensis</i>	Suspected	None Observed

APPENDIX D

Herbicide Use Mitigation Measures

The list of applicable mitigation measures that were identified, analyzed, and approved in relevant LUPs and existing NEPA documents are stated in the following.

All herbicide use will comply with USDI rules and policy, BLM policy and guidelines, Oregon State laws and regulations, Oregon Department of Agriculture (ODA) laws and regulations, Environmental Protection Agency (EPA), federal pesticide laws (FIRCA), Oregon Department of Environmental Quality (DEQ) regulations, local county weed district priorities and requirements, as well as product label requirements, and in strict accordance with the guidelines established in Managing Competing and Unwanted Vegetation Final Environmental Impact Statement (Nov. 1988).

Project Design Features for integrated weed treatment:

- 1) Prevention activities will be practiced on all projects. Prevention practices include:
 - a. Vehicles and equipment used on BLM-administered lands (including Rights-of-Ways) shall be cleaned as needed to remove dirt which may contain weed seeds.
 - b. Certified weed-free seed or straw mulch for restoration will be provided by BLM.
- 2) All herbicide applications will be applied by an Oregon State licensed and certified applicator.
- 3) Material Safety Data Sheets (MSDS) for each herbicide being applied will be at each project site with the applicator. Guidelines and information found in "Oregon Pesticide Applicator Manual" (Miller 1993) as updated will be followed.
- 4) Herbicide Use Restrictions are as follows:
 - a. Refueling of equipment, staging, mixing and loading of herbicides will be done at least 100 feet from surface water.
 - b. No application of herbicides will occur if wind speeds exceed 8 mph, with the exception of hand wipe applications.
 - c. Only 2,4-D, picloram (Tordon), dicamba (Banvel), and glyphosate (Rodeo and Accord only) and approved combinations will be allowed as per USDI BLM Information Bulletin No. 2003-102.
 - d. None of the products may be applied within 500 feet of any residence or other place of human occupation unless the occupant or resident gives his/her consent in writing (Northwest Area Noxious Weed Control Program ROD, pg. 2).
 - e. All chemicals will be applied only in accordance with Environmental Protection Agency standards specified on the herbicide label, and the stipulations in this DNA.
 - f. Herbicide applications will not be made in rain or fog, within 24 hours of a forecast for precipitation, or when snow or ice is on the ground.

- g. Herbicide application will not be made when the ambient air temperature is over 85°F.
- h. The following restrictions apply within riparian/wetland/pond areas:
 - No vehicle mounted boom sprayers or vehicle mounted handguns will be used within 60 feet of surface (live) water. (2004 Washington Toxics Coalition vs. EPA court ruling herbicide restriction on streams bearing listed salmonid species). All buffer strips will be delineated on the ground by means of flagging or other similarly effective physical delineation.
 - No vehicle mounted booms will be used in riparian/wetland/pond areas where weeds are closely intermingled with trees and shrubs.
 - In riparian/wetland/pond areas no spray equipment will be used when wind speeds exceed 5 mph. No aerial applications are allowed in riparian/wetland/ponds.
 - Hand application of general use herbicides (backpack, hand sprayers, wick wipers) may occur up to 15 feet of surface water. This is only for spot treatments of noxious weeds that do not exceed heights of 2.5 feet (Northwest Area Noxious Weed Control Program ROD, pg. 2).
 - Only herbicides formulated for aquatic application (i.e. Rodeo, AquaMaster) may be used up to the existing water surface of an active stream or pond. Only cut stump treatment methods on individual noxious weed plants hand application methods with low pressure hand operated systems may occur. (Northwest Area Noxious Weed Control Program ROD, pg. 2).
 - Areas of known or suspected sensitive amphibians will have as a minimum 100 foot buffer strip from surface water for all herbicide applications, with the exception of the use of Rodeo or other aquatic formulated herbicide, which is allowed immediately adjacent to surface water.
- 5) Disturbance is not permitted above ambient noise within 0.25 miles of known nests from Jan. 1 to Aug. 31 or until non-nesting is determined in Bald eagle habitat.
- 6) Chainsaw or other gas-powered equipment use will not occur within 65 yards of any known Spotted Owl nest site or activity center from Mar. 1 to June 30.
- 7) No soil disturbance is permitted at identified cultural resource sites.
- 8) Pesticides will not be used in riparian areas of the North Umpqua Wild and Scenic River Corridor except along seasonal streams during the dry season.