



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT OFFICE
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Medford, Oregon 97504
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IN REPLY REFER TO:
1614 (OR-115)

JUN 14 2007

Dear Sir or Madam:

Attached is the recently completed Environmental Assessment (EA) for the West Fork Trail Creek Aquatic Habitat Restoration Project (EA #OR-115-07-01). This EA evaluates improving fish habitat conditions on 1.2 miles of West Fork Trail Creek by adding large boulders and wood to the stream. Current fish habitat conditions on West Fork Trail Creek are limited due to deficiencies in spawning gravel and number of pools, high levels of fine sediment in the gravel, and low amounts of large wood. Five wood structures and six boulder structures would be placed in West Fork Trail Creek. The Bureau of Land Management (BLM) designed this project to meet Aquatic Conservation Strategy objectives.

This document is available for public review and comment for a period of 15 days. The effective date for the beginning of the comment period is the date of publication of the notice of the EA availability is published in the *Medford Mail Tribune*.

Any comments received, including names and addresses of respondents, will be available for public review at the Medford District BLM Office; 3040 Biddle Road; Medford, Oregon during regular business hours (8:00 am to 4:30 pm), Monday through Friday. If you wish to withhold your name and address or both from public review or from disclosure under the Freedom of Information Act, you must state this at the beginning of your written comment. Your request will be honored to the extent allowed by law. All submissions from organizations or businesses and from individuals identifying themselves as representatives or officials of organizations or businesses will be made available for public inspection in their entirety.

As I make my decisions regarding this project, I will consider all pertinent site-specific comments. The most useful comments are those that clearly articulate site-specific issues or concerns. If you have questions or comments concerning this project, please contact Jean Williams at (541)618-2385. Comments may also be mailed to Bureau of Land Management, 3040 Biddle Road, Medford, OR 97504 or e-mailed to or110mb@or.blm.gov (be sure to include "Attention: Jean Williams"). We appreciate your interest and involvement in this project.

Sincerely,

Christopher J. McAlear
Field Manager
Butte Falls Resource Area

1 Attachment:
1 - EA #OR-115-07-01 (13pp)

West Fork Trail Creek Aquatic Habitat Restoration Project

Environmental Assessment

OR115-07-01

June 2007



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT

EA COVER SHEET

Resource Area: Butte Falls

EA Number: OR-115-07-01

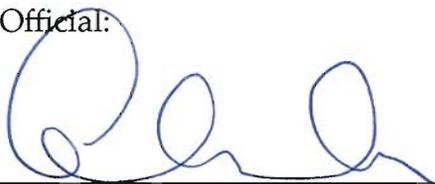
Action/Title: West Fork Trail Creek Aquatic Habitat Restoration

Location: T33S, R1W, Sections 19 and 29, Willamette Meridian, Jackson County, Oregon

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Reviewing Official:



Christopher J. McAlear
Butte Falls Resource Area Manager

6/11/07

Date

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Need for the Proposed Action

I. Introduction

This Environmental Assessment (EA) will analyze the impacts of a proposal by the Bureau of Land Management, Butte Falls Resource Area (BLM) to install fish habitat improvement structures in West Fork Trail Creek. The EA will provide the decision-maker, the Butte Falls Resource Area Field Manager, with the information needed in the decision-making process. It will determine if impacts are within those anticipated in the Medford District Proposed Management Plan/Environmental Impact Statement and whether a Finding of No Additional Impact is appropriate.

II. What is the BLM Proposing and Where?

The BLM has identified areas in the West Fork Trail Creek watershed for aquatic habitat restoration. These areas were selected based on (1) stream reach fish habitat deficiencies and (2) mechanical feasibility. The proposed project is located within the Trail Creek Watershed of the Butte Falls Resource Area, Medford District, BLM (see map). The proposed project would occur in West Fork Trail Creek, Township 33 South, Range 1 West, sections 19 and 29.

The West Fork Trail Creek watershed has been designated as a Core Area under the *Oregon Coastal Salmon Restoration Initiative*. The proposed project would occur within the stream channel and portions of the Riparian Reserve as designated in the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (NWFP, p. 7). The proposed project is located on public lands administered by the BLM.

III. Objectives for the Proposal

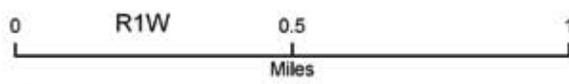
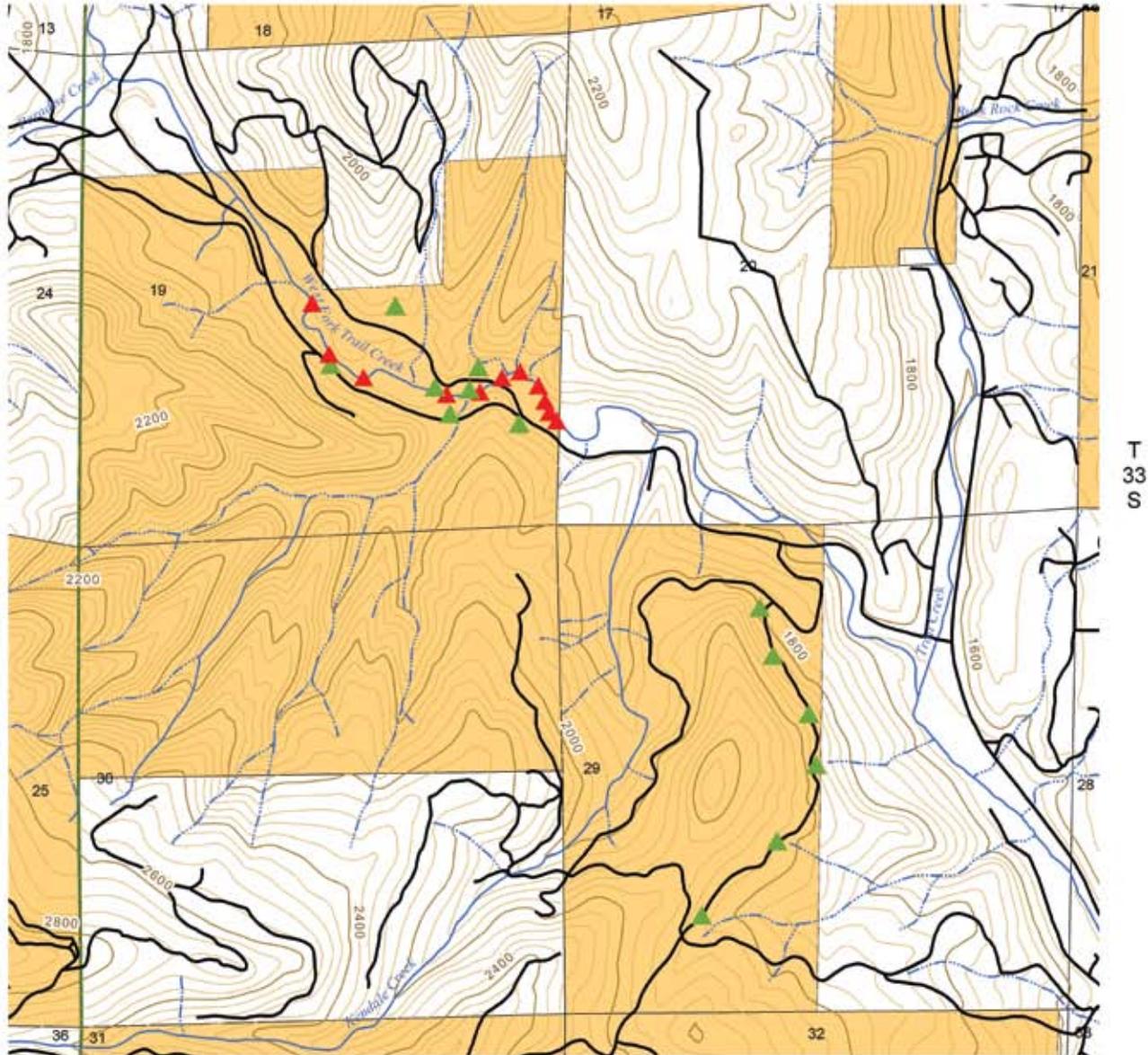
The objective for this project is to improve fish habitat conditions on 1.2 miles of West Fork Trail Creek. This restoration project is in conformance with the Medford District Resource Management Plan/Record of Decision (RMP/ROD) (p. 31) direction is to “design and implement fish and wildlife habitat restoration and enhancement activities in a manner that contributes to attainment of Aquatic Conservation Strategy and riparian reserve objectives. Current fish habitat conditions on West Fork Trail Creek are limited due to deficiencies of spawning gravel, number of pools, high amounts of fine sediment in the gravel, and low amounts of large wood. Adding boulders and large wood structures to the stream would trap spawning gravel, aggrade the stream channel, and dissipate the energy of flowing water.

IV. Conformance with Land Use Plans and Other Documents

Medford District Record of Decision and Resource Management Plan (ROD/RMP), June 1995

The *Medford District Record of Decision and Resource Management Plan* responds to the need for a healthy forest and rangeland ecosystem with habitat that will contribute toward and support populations of native species, particularly those associated with late-successional and old growth forests. The RMP responds to the need for a sustainable supply of timber and

West Fork Trail Creek Restoration Sites and Large Wood Sources



- ▲ Restoration Site
- ▲ Large Wood Source
- Road
- ~ Perennial Stream
- - - Intermittent Stream
- ~ Intermediate 40-ft contour
- ~ Index 200-ft contour
- BLM Administered Land
- Private



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other forest products that will help maintain the stability of local and regional economies, and contribute valuable resources to the national economy on a predictable and long-term basis. The RMP contains the same land use allocations and standards and guidelines as the NWFP, but also responds to issues specific to the Medford District.

Northwest Forest Plan (NWFP), April 1994

The *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (also known as the Northwest Forest Plan) provides extensive standards and guidelines, including land allocations, which comprise a comprehensive ecosystem management strategy. The Medford District ROD/RMP of June 1995 incorporated the standards and guidelines of the NWFP and superseded the NWFP. Since the NWFP is commonly referenced as a shorthand description of this coordinated set of standards and guidelines common to the various federal management units throughout the range of the northern spotted owl, we may make reference to the NWFP, even though it was replaced by the later adopted ROD/RMP. Wherever we refer to the “NWFP,” we are actually referring to the 1995 ROD/RMP which incorporated the conservation strategy of the 1994 decision.

Survey and Manage (S&M), January 2001

The *Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures (also known as Survey and Manage)* amends a portion of the 1995 Medford District ROD/RMP (which incorporated the conservation strategy of the 1994 NWFP) by adopting new standards and guidelines for Survey and Manage, Protection Buffers, and other mitigating measures.

Medford District Integrated Weed Management Plan (IWMP), June 1998

Medford District Integrated Weed Management Plan and Environmental Assessment (IWMP) provides a proactive ecosystem-based approach to reduce populations of alien plant species to a level which will allow for the restoration of native plant species, and provide for overall ecosystem health. Control measures may include cultural or preventative (seed testing, vehicle washing), physical (handpulling, competitive planting, burning), biological (insects), and chemical (herbicide), and may be found in greater detail in the *Northwest Area Noxious Weed Control Program EIS*, December 1985.

National Fire Plan (NFP), August 2000

The *National Fire Plan (NFP)* is an interagency plan between the US Forest Service and the US Department of the Interior that was designed to ensure sufficient firefighting resources for wildland fires; restore landscapes and rebuild communities damaged by wildland fire; reduce hazardous fuels in forests; work with local residents to reduce fire risk and improve fire protection; and ensure accountability.

V. Relationship to Statutes, Regulations, and Other Plans

Oregon and California Act (O&C), 1937

Requires the BLM to manage O&C lands for permanent forest production, in accord with sustained-yield principles. Management of O&C lands must also protect watersheds, regulate

streamflow, provide for recreational facilities, and contribute to the economic stability of local communities and industries.

Federal Land Policy and Management Act (FLPMA), 1976

Defines BLM's organization and provides the basic policy guidance for management of BLM lands.

National Environmental Policy Act (NEPA), 1969

Requires the preparation of environmental impact statements for Federal projects which may have a significant effect on the environment.

Endangered Species Act (ESA), 1973

Directs Federal agencies to ensure their actions do not jeopardize threatened and endangered species.

Clean Air Act (CAA), 1990

Provides the principal framework for national, state, and local efforts to protect air quality.

Archaeological Resources Protection Act (ARPA), 1979

Protects archeological resources and sites on federally-administered lands. Imposes criminal and civil penalties for removing archaeological items from federal lands without a permit.

Clean Water Act (CWA), 1987

Establishes objectives to restore and maintain the chemical, physical, and biological integrity of the nation's water.

Healthy Forests Initiative (HFI), 2002

Focuses on reducing the risk of catastrophic fire by thinning dense undergrowth and brush in priority locations that are identified on a collaborative basis with selected Federal, state, tribal, and local officials and communities. The initiative also provides for more timely responses to disease and insect infestations.

VI. What are the Relevant Issues?

Scoping

The Oregon Department of Fish and Wildlife, Oregon Division of State Lands and Rogue South Coast Level 1 Team were involved with the project review. This proposal was not scoped, nor was the public involved in its development.

Relevant Issues

A. Aquatic Systems

West Fork Trail Creek has a low salmonid fresh water survival rate because of limited quality

aquatic habitat. This is due to the lack of pool and complex stream habitat features associated with the historical anadromous fish production within the watershed.

B. Aquatic Conservation Strategy

The Aquatic Conservation Strategy (ACS) was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems contained within them on public lands. The strategy must strive to maintain and restore ecosystem health at watershed and landscape scales to protect habitat for fish and other riparian-dependent species and resources and restore currently degraded habitats. The following ACS standards and guidelines would be met by the proposed project:

- 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.**

The intent of this project is to increase the diversity and complexity of West Fork Trail Creek. Adding large woody debris (LWD) will increase instream habitat complexity and habitat types that are needed for all life stages of salmonids within West Fork Trail Creek.

- 2. Maintain and restore spatial and temporal connectivity within and between watersheds.**

Adding LWD will not affect the spatial and temporal connectivity within West Fork Trail Creek and other watersheds because the LWD structures would not create aquatic barriers within West Fork Trail Creek.

- 3. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.**

Adding LWD to West Fork Trail Creek will maintain and restore the physical integrity of the aquatic system. Some shorelines, banks and bottom configurations will adjust to the LWD being added at individual sites, however, this will be a beneficial process that will increase habitat complexity and have long term benefits for the aquatic system.

- 4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems.**

Adding LWD to West Fork Trail Creek will maintain and improve water quality by storing and sorting sediment behind log structures, and increasing flood plain connectivity.

- 5. Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.**

Adding LWD to West Fork Trail Creek will maintain and improve the sediment regime, including storage, and transport within West Fork Trail Creek.

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.

Adding LWD to West Fork Trail Creek will maintain and improve patterns of sediment, nutrient, and wood routing. As stated in ACS objective #5, LWD would help sort and store sediment and other substrate. Adding LWD to West Fork Trail Creek would enable these structures to trap smaller pieces of wood and debris that would otherwise be flushed further down stream into larger tributaries where it would be unlikely to stay in the aquatic system.

7. Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.

As stated in ACS objective #4, adding LWD to West Fork Trail Creek would increase flood plain connectivity and restore the timing, variability, and duration of floodplain inundation and water table within the West Fork Trail Creek basin.

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.

This project is intended to 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 would supply coarse woody debris to West Fork Trail Creek which is currently lacking LWD.

9. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

This project is intended to restore habitat complexity that would improve populations of native plant, invertebrate, and vertebrate riparian-dependent species.

Issues Considered but Eliminated from Further Analysis

Issues were discussed during the ID Team meetings for these proposals (see Chapter V for a list of preparers). After discussing the issues, the ID Team determined that while these issues and concerns were real, many were outside the scope of the EA and others were not major issues for this proposal that would affect the human environment.

- 1) Transportation System - Project will only use existing roads.
- 2) Visual Resources Management (VRM) - Project meets ROD/RMP VRM standards.
- 3) Air Quality - Project would not affect air quality.
- 4) Coarse Woody Debris - Coarse Woody Debris would meet the required standards to be left.
- 5) T&E, Special Status and Survey and Manage Plants – surveys were completed and no sites were found.

- 6) T&E and Survey and Manage Wildlife – survey protocols were followed, project would not cause a negative effect on site or habitat persistence.
- 7) Hazardous Materials – risk of hazardous material spills will be mitigated by project design features.
- 8) Cultural Resources – no known locations within project sites.

VII. Decisions to be Made Based on the Analysis

This Environmental Assessment will provide the information needed for the authorized officer, the Butte Falls Resource Area Field Manager, to render a decision regarding the selection of an alternative for the West Fork Trail Creek Aquatic Habitat Restoration project. The Butte Falls Resource Area Field Manager must decide whether to implement the Proposed Action as designed or whether to select the no-action alternative. In choosing the alternative that best meets the project purpose and need, the Field Manager will consider the extent to which each alternative responds to the objectives identified for this project.

The decision will document the authorized officer's rationale for selecting a course of action based on the effects documented in the EA, and the extent to which each alternative:

- 1) Address the balance between positive and negative environmental effects;
- 2) Maintains aquatic habitat for recovery of at risk stocks of fish; and
- 3) Maintains and improves water quality within streams located in West Fork Trail Creek.

The decision will also include a determination whether or not the impacts of the proposed action are significant to the human environment. If the impacts are determined to be within those impacts analyzed in the Medford District Proposed Resource Management Plan/EIS (PRMP/EIS) (USDI 1994) and the Northwest Forest Plan (USDA/USDI 1994), or otherwise determined to be insignificant, a Finding of No Significant Impact (FONSI) can be issued and a decision implemented. If this EA determines that the significance of impacts are unknown or greater than those previously analyzed and disclosed in the PRMP/EIS and the NWFP SEIS, then a project specific EIS must be prepared.

What Are the Alternative Ways of Accomplishing the Objectives?

I. Introduction

The project ID Team developed one action alternative to achieve the project objective of improved aquatic habitat conditions in West Fork Trail Creek. The Trail Creek Watershed Analysis provided analysis information.

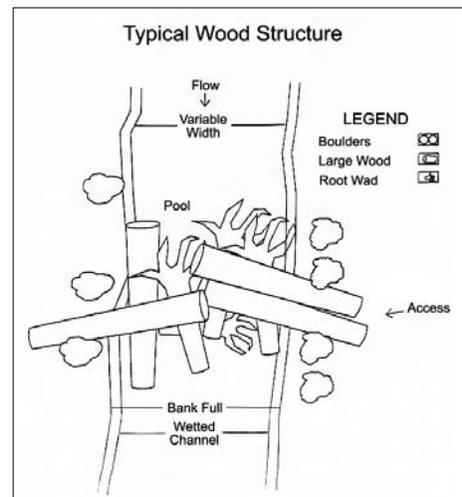
This section provides a description of the No Action Alternative and the Action Alternative.

II. Alternative 1 – No Action

Analysis of this alternative provides a baseline against which the effects of the action alternatives can be compared. The No Action Alternative is defined as not implementing the aquatic restoration project. Therefore, current fish habitat conditions on West Fork Trail Creek would continue to be limited due to deficiencies of spawning gravel, number of pools, high amounts of fine sediment in the gravel, and low amounts of large wood.

III. Alternative 2

Five wood structures and six boulder structures would be constructed in West Fork Trail Creek (see Table 1). A cable yarder would be used to pull over a total of 11 beetle-killed trees in the riparian area of West Fork Trail Creek and place them directly in the creek. A cable yarder would also be used to pull over 6 hazard trees located along BLM road 33-1W-29.1 in T33S, R1W, section 29. The hazard trees are located on BLM-administered lands adjacent to a road and would not require dragging in order to remove. These trees would be pulled over with a cable yarder in order to keep the rootwad attached. Trees would be transported on a lowboy to the two restoration sites locations on West Fork Trail Creek (see map) and placed in the creek with a cable yarder.



Five boulder weirs and one boulder cluster would be placed in West Fork Trail Creek with an excavator. Boulder clusters are single boulders placed strategically inside bedrock groves within the channel. Boulder weirs are boulders placed into 'U'-shaped configurations and would extend outside the active channel (range between 50 and 70 feet in total length). Boulders would be between two and three feet in height. Access to the weir sites would be on existing skid roads and the excavator would complete all weir construction while positioned in the channel. All heavy equipment activity will be confined to the existing skid roads and in the active channel. All boulder transport will be done on maintained roads and during dry conditions.

The logs and boulder structures would be keyed in to the bank channel in order to keep them in place. Structures would be constructed to simulate debris jams and gravel retention which would help recreate the watershed’s historical salmonid conditions. The majority of the logs would be at least 24 inches in diameter and 50 feet long; the majority of the boulders would be at least 3 feet in diameter.

All access routes would be ripped, mulched, seeded with native grasses, and planted after project completion.

Table 1. Site Types and Locations

Site	Site Location	Type of Structure	Number of Boulders/Trees
Site 1	T33S, R1W, sec.19, S½	Boulder	30
Site 2	T33S, R1W, sec.19, S½	Boulder	30
Site 3	T33S, R1W, sec.19, S½	Boulder	30
Site 4	T33S, R1W, sec.19, S½	Wood	3
Site 5	T33S, R1W, sec.19, S½	Boulder	20
Site 6	T33S, R1W, sec.19, S½	Boulder cluster	30
Site 7	T33S, R1W, sec.19, S½	Wood	3
Site 8	T33S, R1W, sec.19, S½	Boulder	30
Site 9	T33S, R1W, sec.19, S½	Wood	3
Site 10	T33S, R1W, sec.19, S½	Wood	4
Site 11	T33S, R1W, sec.19, S½	Wood	4

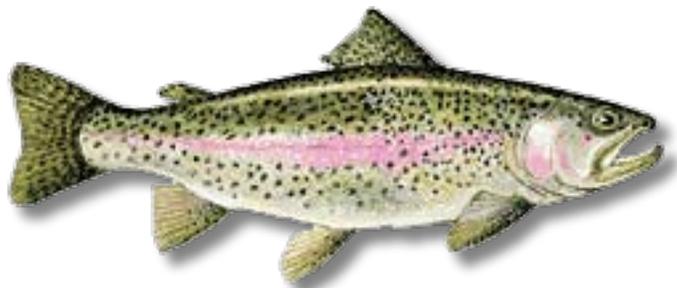


Coho Salmon (*Oncorhynchus mykiss*)

IV. Project Design Features

The following Project Design Features (PDFs) are included in the design of this project. The PDFs serve as a basis for resource protection in the implementation of the project and will be considered in the analysis of impacts.

- Apply no disturbance buffers to all known sensitive plant sites.
- Complete all instream work between June 15 and September 15 (both days inclusive) of any given year.
- Seed and mulch all exposed soil areas with approved native grass seed mix and weed-free mulch to a depth of 4 inches.
- Predesignate access to fish structure sites.
- Seasonally restrict activities from February 1 to July 15 for peregrine falcons.
- Seasonally restrict activities from March 1 to June 30 within 0.25 miles of known spotted owl sites.
- Do not remove snags/hazard trees in spotted owl 100-acre activity centers.
- Minimize operation of equipment within the stream channel.
- Require a hazardous material action plan and containment and cleanup kit on-site.
- Use spill containment booms while equipment is operating within the stream channel.
- Maintain fish passage at all times.
- Do not transport LWD or boulders during heavy rain events that create run-off.
- Power wash heavy equipment before moving onto Federal lands to remove soil and plant parts and prevent the spread of noxious weeds into the project area.
- Leave four snags per acre in snag/hazard tree removal areas.



Resident Rainbow Trout (*Oncorhynchus mykiss*)

Affected Environment

I. Introduction

This section describes the present condition of the environment within the proposed project area that would be affected by the alternatives. The information in this section serves as a general baseline for determining the effects of the alternatives.

II. General Description of the Proposed Project Area

The project area is located within a low, terrace-constrained valley approximately one mile upstream from the confluence of West Fork Trail Creek and Trail Creek. Stream substrate is composed of bedrock, boulders, cobbles, gravels, sand, and silt with bedrock being the dominant substrate. The channel also has consistently high width/depth ratios and high summer temperatures. Stream habitat conditions prior to current conditions likely consisted of more gravel and cobble substrate, and may have been lost due to earlier removal of LWD to facilitate log transport. Further scouring occurred during the 1964 flood (Trail Creek Watershed Analysis, p. 4-16). Current overstory vegetation adjacent to the site is dominated by hardwoods (alder, maple) along the edge of the stream and by conifer stands in the uplands.

Fish Species

A variety of resident and anadromous fish species are present in the West Fork Trail Creek watershed. Anadromous fish species that utilize West Fork Trail Creek and its tributaries are coho salmon (*Oncorhynchus mykiss*), summer and winter steelhead trout (*O. kistutch*), resident rainbow trout (*O. mykiss*), resident cutthroat trout (*O. clarki*), Pacific lamprey (*Lampetra tridentata*), reticulate sculpin (*Cottus sp.*), and Klamath small-scale suckers (*Catosteomus rimiculus*). Coho salmon are listed as a threatened species under the Endangered Species Act of 1973, as amended (ESA). Pacific lamprey are a state of Oregon designated sensitive species.

Salmonid Population

The BLM conducted juvenile coho densities in West Trail Creek from 2002 to 2006. West Fork Trail Creek averaged 0.10 fish per square meter in the years surveyed. When compared to the benchmark estimated for juvenile coho densities in Oregon coastal streams of 0.7 fish or more per square meter (Rodgers 2000), production appears poor.

Salmonid Habitat

An intensive aquatic habitat inventory was completed on West Fork Trail Creek in 1993 by Boise Cascade Corporation to assess the current condition of aquatic habitat within the mainstem of West Fork Trail Creek. Boise Cascade inventoried stream habitats on over 7.25 miles of the mainstem of West Fork Trail Creek. Analysis of the inventory data revealed aquatic habitat in West Fork Trail Creek to be in fair condition based on relevant stream habitat condition indicators, however the stream is lacking the habitat complexity that is preferred by salmonids. The most notable stream habitat deficiencies are the absence of high quality pools, spawning substrate, and large wood. The absence of these habitat features and the subsequent degraded condition of this stream appears to have persisted for at least the past 30 years (Trail

Creek Watershed Analysis 1999). West Fork Trail Creek has a reduced freshwater survival rate as a result of these deficiencies.

A stream restoration project was completed in 2005 by Oregon Department of Fish and Wildlife (ODFW) downstream of the project area on private land. The project entailed placing large wood and boulders within the stream channel to provide cover for rearing fish and to collect spawning gravels.

For a detailed description of the West Fork Trail Creek watershed, see the *Trail Creek Watershed Analysis*, completed in June 1999. This document is available at the Butte Falls Resource Area, Medford District BLM Office.

Environmental Consequences

I. Introduction

This section provides the basis for comparing the alternatives. The detail and depth of analysis is generally limited to that which is necessary to determine if significant environmental effects are anticipated.

II. Effects of Implementing Alternative 1 (No Action)

The current fish habitat conditions on West Fork Trail Creek would continue to be deficient of spawning gravel, number of pools, and large wood in the stream. The stream channel would continue to aggrade at the same trajectory.

Cumulative Effects

The cumulative effects include past and future actions of the BLM and must be considered in this analysis of the project area. Timber harvest activities have occurred and are expected to occur in the future in the West Fork Trail Creek 6th and Trail Creek 5th field watersheds as follows:

- The Trail Creek Timber Sale treated 880 acres in the Trail Creek 5th field watershed: 516 acres of tractor yarding, 205 acres of cable system yarding, and 159 acres of helicopter yarding.
- Over 29 percent of the Trail Creek 5th field watershed is owned by private timber companies. It is assumed logging operations would continue.
- A fish habitat restoration project completed in 2001 placed a total of 8 boulder weirs in T33S, R1W, section 19.

Table 2. Cumulative Effects of Alternative 1 on Aquatic Habitat and Salmonid Freshwater Survival

Past Actions	Present Action	Current Condition	Proposed Action	Future Action	Cumulative Effect
Issue: Aquatic Habitat Condition- percentage of pool habitat.					
Sedimentation, channelization, and loss of structure caused by roads, landings, skid trails, and stream cleaning reduced the number of pools and the amount of habitat.	Riparian reserves protect streams on public land. Low amounts of sedimentation from less logging on private land.	Lack of rearing pools and cover for salmonids.	No Action.	Timber harvest would continue on public land with riparian reserves and BMPs in place. Private timber harvest would be expected to continue on a 60-year rotation.	Aquatic habitat conditions would stay the same in the short term. In the long term as the riparian reserves mature, large wood will naturally fall into the creek and aquatic habitat conditions would improve gradually.
Issue: Aquatic Habitat Condition - LWD levels and overall structure					
Removal of LWD and potential LWD by logging in riparian areas.	More riparian conifers are maintained during timber harvest on public and private lands resulting in more LWD entering streams in the long-term.	Low amount of rearing pools and spawning gravel for juvenile salmonids.	There would be no LWD or boulders added to the stream	Low levels of LWD would exist in the short term (0-50 years). With riparian reserves maturing, long-term LWD levels would go up.	Aquatic habitat conditions would stay the same in the short-term. In the long-term as the riparian reserves mature, large wood will naturally fall into the creek and aquatic habitat conditions would improve gradually.
Issue: Freshwater Survival of Juvenile Salmonids					
Timber harvest occurred along most streams on both private and public lands. Riparian areas treated the same as upland sites.	Less timber harvest is occurring in riparian areas on public and private timber lands. Riparian areas continue to develop and eventually reach mature conditions, providing more LWD sources for streams and thus increasing freshwater survival.	Current juvenile salmonid survival is low, but improving as LWD is gradually added.	No Action. There would be no LWD or boulders added to the stream.	Future timber harvest would occur within the project area and the Trail Creek watershed. Riparian areas receive greater protection than they did in the past.	Current low levels of survival of juvenile salmonids would continue but improve over the long term

III. Effects of Implementing Alternative 2

A. Fish/Aquatic Habitat

1) Direct and Indirect Effects- Fisheries

This improvement project would have both short-term and long-term effects. Short-term effects to fish include reduced feeding opportunities from localized increases in turbidity and temporary displacement of fish from habitats where restoration operations occurs. During low summer flows, the channel is nearly dry. Therefore, construction during this time would lessen the effects. Experience observing similar restoration projects in creeks with similar

gradient and turbidity patterns as West Fork Trail Creek indicates that the effects of both increased turbidity and fish displacement would be expected to only last several hours. This duration would be biologically insignificant because of the short time of disturbance. Positive indirect effects to SONC coho salmon (and other fishes and aquatic organisms) would result from an increase in habitat quality. Increased spawning and rearing habitat would benefit the population of coho in West Fork Trail Creek in the short-term and long-term. The project is expected to increase individual fish survival rate and productivity in West Fork Trail Creek.

This improvement project would have a short-term (up to several hours) increase in turbidity as the wood/boulders are placed in the channel, and short-term (weeks or months) changes in downstream habitats as the stirred-up sediment settles out over substrate. The sediment would not initially move very far downstream, as all instream work would take place during periods of low flow. It is anticipated that the first pool downstream of each wood structure would accumulate and store some amount of sediment, potentially decreasing habitat availability for macroinvertebrates and reducing feeding opportunities for fish. Levels of sediment deposition would decline below this first pool, and likely would not be noticeable three or more pools downstream. However, following the pattern of sediment movement in West Fork Trail Creek, deposited sediment would be flushed out during the first substantial flow event following wood placement, and transported to natural deposition areas in West Fork Trail Creek, or carried by high flows to Trail Creek as a very brief pulse of turbidity. This turbidity would not be detectable above background turbidity levels.

Positive effects include long-term benefits derived from the addition of large wood and boulders to the stream channel such as increased habitat complexity by the formation of pools and increased amount of cover provided by the wood. This would benefit juvenile rearing habitat in West Fork Trail Creek. Aggradations of spawning gravels upstream of the wood would increase spawning habitat available to adult salmonids. Wood additions would also increase the potential for lateral stream movement, possibly encouraging formation of slow water habitats (a crucial winter rearing habitat that is currently almost non-existent in West Fork Trail Creek), adding to habitat complexity.

The removal of trees and snags from designated sites would decrease the amount of coarse woody material that would be available for wildlife habitat in the immediate vicinity. Each location was surveyed for coarse woody debris and it was found that the number of trees that are on the ground at these sites is more than substantial to provide for the minimum requirements for wildlife habitat, therefore the proposed action would not have an effect on coarse woody material for wildlife. All coarse woody material requirements would be met before logs are removed.

Ground disturbance would occur when logs are removed from the designated sites. This would result in the removal of brushy vegetation and possibly a limited number of seedlings (less than 2" diameter breast height) along the roadway. This may cause short-term erosion in the immediate vicinity. Disturbed areas would be water-barred, seeded, and mulched after use to reduce the potential for long-term soil erosion. Designated skid trails would be used throughout the project area.

2) Cumulative Effects

Implementation of the proposed project would reduce the amount of degraded aquatic and riparian habitat and lessen cumulative impacts which have occurred within the watershed. Short-term, localized increases to baseline stream turbidity levels could have effects on fish and aquatic resources, though cumulatively, this would be expected to be insignificant.

The project fisheries biologist expects the improved aquatic habitat and rearing opportunities from this project to increase the freshwater survival of juvenile anadromous salmonids. This would improve the long-term productivity of the freshwater life history stage of anadromous salmonids. Short-term, localized increases to baseline stream turbidity levels could have negative effects on fish and aquatic resources, though we would not expect this to compromise the long-term productivity of fish and aquatic resources.

The removal of beetle-killed trees would decrease the amount of snags and coarse woody material that would be available for wildlife habitat in the immediate vicinity. However, the number of trees that are in the area at these sites is adequate to provide for the minimum requirements for wildlife habitat, therefore the proposed action would not be expected to have any negative direct or indirect effects upon wildlife. All coarse woody material requirements would be met before trees are designated for removal.

Table 3. Cumulative Effects of Alternative 2 on Aquatic Habitat and Salmonid Freshwater Survival

Past Actions	Present Action	Current Condition	Proposed Action	Future Action	Cumulative Effect
Issue: Aquatic Habitat Condition- percentage of pool habitat.					
Sedimentation, channelization and loss of structure caused by roads, landings and skid trails reduced the number of pools and amount of habitat.	Riparian reserves protect streams on public land. Low amounts of sedimentation from lower amounts of logging on private land.	Lack of rearing pools for salmonids.	Add 17 trees and 6 boulder structures.	Timber harvest would continue on public land with riparian reserves and BMPs in place. Private timber harvest would be expected to continue on a 60 year rotation.	Aquatic habitat would improve through increased spawning habitat and more pools.
Issue: Aquatic Habitat Condition - LWD levels and overall structure					
Removal of LWD and boulders through stream cleaning (3-25) and floods. Removal of potential LWD by logging in riparian areas.	More riparian conifers are maintained during timber harvest on public and private lands resulting in more LWD entering streams in the long term. Stream Cleaning no longer occurs.	Low amount of rearing pools, spawning gravel and adult holding areas for salmonids due to a lack of structure and LWD.	Add 17 trees and 6 boulder structures to the creek.	Stream and riparian areas receive greater protection than they did in the past.	LWD levels and overall structure would improve.

Table 3. Cumulative Effects of Alternative 2 on Aquatic Habitat and Salmonid Freshwater Survival

Past Actions	Present Action	Current Condition	Proposed Action	Future Action	Cumulative Effect
Issue: Freshwater Survival of Juvenile Salmonids					
Timber harvest occurred along most streams on both private and public lands. Riparian areas treated the same as upland sites.	Less timber harvest is occurring in riparian areas on public and private timber lands. Riparian areas continue to develop and eventually reach mature conditions, providing more LWD sources. Boulders eventually will make it downstream from landslides and thus increasing structure and salmonid freshwater survival will go up.	Current juvenile salmonid survival is low, but improving as LWD and boulders are gradually added.	Add 17 trees and 6 boulder structures.	Future timber harvest would occur within the project area and the Trail Creek watershed. Riparian areas receive greater protection than they did in the past.	Freshwater survival of juvenile salmonids would improve in the short- and long-term.

This project is included in the April 28, 2007 Biological Opinion issued by the National Marine Fisheries Service (NMFS) pursuant to Section 7(a)(2) of the Endangered Species Act (ESA) on the effects of the Forest Service, BLM, and Bureau of Indian Affairs (BIA) (acting for the Coquille Tribe) implementing fish habitat restoration activities in Oregon and Washington. In this Opinion, NMFS concludes that the programmatic action, as proposed, is not likely to jeopardize the continued existence of 16 species of salmon and steelhead listed under the ESA or result in the destruction or adverse modification of designated critical habitat for these species.

Restoration activities are designed to maintain, enhance and restore watershed functions that affect aquatic species. This consultation addressed those aquatic restoration activities that are commonly implemented on Action Agency lands that are predictable as to their effects to ESA-listed species and EFH and are consistent with broad scale aquatic conservation strategies.

The Butte Falls Resource Area wildlife biologist reviewed the wood sources for this project and determined the sites are not located near any sensitive or Threatened and Endangered wildlife specie. A seasonal restriction for northern spotted owls is required.

All wood source locations meet snag retention and coarse woody debris requirements. The removal of beetle-killed trees from would decrease the amount of snags and coarse woody material that would be available for wildlife habitat in the immediate vicinity. However, the number of trees in the area at these sites is adequate to provide for the minimum requirements for wildlife habitat, therefore the proposed action would not be expected to have any negative direct or indirect effects upon wildlife. All coarse woody material requirements would be met before trees are designated for removal.

List of Preparers and Persons Consulted

Name	Title	Responsibilities
Linda Hale	Wildlife Biologist	Wildlife, T&E Wildlife
Marcia Wineteer	Botanist	Riparian Vegetation, Noxious Weeds, Sensitive Plants
Kevin Kocarek	Fisheries Biologist	Fisheries/Aquatic Ecosystem, T&E Fish
John McNeel	Archaeological/Cultural Coordinator	Cultural
Shawn Simpson	Hydrologist	Hydrology
Ken Van Etten	Soil Scientist	Soils
Randy Bryan	Engineer	Engineering, Roads
Kevin Kocarek	Fisheries Biologist	EA Writer
Jean Williams	EA Coordinator	NEPA Compliance

Bibliography

Beidler, W. M., T. E. Nickelson, and A. M. McGie. 1980. "Escapement goals for Coho Salmon in Coastal Oregon streams." Oregon Department Fish and Wildlife. Research and Development Section. Information Report Series, Fisheries Number 80-10.

J.R. Beschta and Naimen 1979. "The suspended sediment regime of an Oregon Coast Range stream." *Water Resources Bulletin* 15:144-154

Nickelson, T.E., J.D. Rodgers, S.L. Johnson, and M.F. Solazzi 1992. "Seasonal changes in habitat use by juvenile coho salmon (*Oncorhynchus kisutch*) in Oregon."

ODFW. 1999. Aquatic Habitat Inventories, Rogue River Basin. Available at the Butte Falls Resource Area, Medford District, 3040 Biddle Road, Medford OR 97504.

USDA, US Forest Service and USDI, Bureau of Land Management. 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* Government Printing Office. Available at the Butte Falls Resource Area, Medford District, 3040 Biddle Road, Medford, OR 97504.

USDI, Bureau of Land Management, Medford District Office 1995. *Record of Decision and Resource Management Plan* Available at the Butte Falls Resource Area, Medford District, 3040 Biddle Road, Medford, OR 97504.

USDI, Bureau of Land Management, Medford District Office 1994. *Medford District Proposed Resource Management Plan/Environmental Impact Statement* Available at the Butte Falls Resource Area, Medford District, 3040 Biddle Road, Medford, OR 97504.

USDI, Bureau of Land Management, Medford District Office 1999. *Trail Creek Watershed Analysis* Available at the Butte Falls Resource Area, Medford District, 3040 Biddle Road, Medford, OR 97504.



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