1792A
EA-09-01
Swamp Creek

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
EUGENE DISTRICT

Lake Creek Drainage – Swamp Creek Subbasin
Aquatic and Riparian Habitat
Restoration Plan

Environmental Assessment
DOI-BLM-OR-E050-2009-0001

1.0 INTRODUCTION

Swamp Creek is a fifth order tributary of Lake Creek, a tributary of the Siuslaw River with origins located in the Central Coast Range, Western Lane County, Oregon. The head waters begin in T. 15 S., R. 7 W., Sections 31 and 32; T. 16 S., R. 8 W., Section 1; and T. 16 S., R., 7 W., Sections 5 and 6. The confluence with Lake Creek is located in T.16 S., R. 7 W., Section 17. The project lies in the Riparian Management Area land use allocation on BLM-administered lands and on adjacent non-BLM-administered lands.

Historically, the Siuslaw River and its tributaries supported large runs of salmon, trout and other native fish species. Past land use practices have altered the processes and physical attributes that influence streams and watersheds. As a result, much of the aquatic and riparian habitat in the watershed is degraded and has contributed to the decline of fish populations. Although aquatic and riparian habitat restoration activities have occurred, additional opportunities exist within the watershed to improve conditions and further contribute to restoring impaired fish habitat.

Coho salmon (*Oncorhynchus kisutch*) within the watershed are part of the Oregon Coast coho salmon Evolutionary Significant Unit and are listed as threatened under the Endangered Species Act. The Final Environmental Impact Statement for the Revision of the Western Oregon Resource Management Plans (FEIS RMP, 2008) describes the status of the species, including life history, populations, status and distribution, and key limiting factors for the Oregon Coast coho Evolutionary Significant Unit. Habitat degradation has been identified as a factor of decline and a limiting factor that continues to threaten the Oregon Coast coho salmon population. Habitat improvement has also been identified as one of the greatest benefits in improving fish productivity; particularly for Oregon Coast coho salmon (Nickelson, 2001). The FEIS RMP (Appendix J – Fish pages 338-342) describes the status of this species.

Because of BLM's land ownership pattern, the BLM's ability to influence aquatic habitat depends not only on the overall amount of land ownership in a watershed, but also on the location of the ownership relative to areas such as high intrinsic potential streams. High intrinsic potential (HIP) streams are streams that have a greater potential to provide high-quality habitat for salmonids. High intrinsic potential is a topographical approach developed by Pacific Northwest Research Station scientists using empirical evidence and attributes of topography and flow to determine the potential of a stream to provide high-quality juvenile salmonid habitat. High intrinsic potential streams are described in the FEIS RMP Appendix J – Fish.

The Proposed Action is a cooperative restoration project. Since the BLM is not the predominant landowner within the watershed, the majority of opportunities to improve habitat exist on non-BLM-administered lands. Therefore, implementing cooperative projects on both BLM-administered and non-BLM-administered lands benefit resources across ownership boundaries to accomplish watershed restoration. Project cooperators include the BLM, Siuslaw Watershed Council, Oregon Department of Fish and Wildlife, Weyerhaeuser Company, Lincoln County Soil and Water Conservation Department, U.S. Fish and Wildlife Service, Oregon Watershed Enhancement Board, Oregon Department of Environment Quality and neighboring land owners. Previous restoration work

within Swamp Creek included the replacement of two barrier culverts on Pontius Creek, a tributary of Swamp Creek. Additionally, a large amount of garbage has been removed adjacent to Swamp Creek to prevent toxic waste from entering the stream reach.

This Environmental Assessment (EA) incorporates by reference the following NEPA and land use planning documents:

- *Final Environmental Impact Statement for the Revision of the Resource Management Plans of the Western Oregon Bureau of Land Management (FEIS RMP, 2008)*
- *Eugene District Record of Decision and Resource Management Plan (BLM, 2008).*
- *Lake Creek Habitat Management Plan and Environmental Assessment (BLM, 2000)*
- *Swamp Creek Aquatic and Riparian Habitat Restoration Plan/Eugene District Lake Creek Watershed Analysis (March 1999)*
- *Siuslaw Watershed Analysis (February 1996)*
- *Lake Creek Watershed Analysis (June 1995)*

Further information about the project is available in the project analysis file located at the Eugene District Office.

1.1. PURPOSE AND NEED

The purpose of the Proposed Action, through leveraged funds and partnerships in the Swamp Creek drainage, is to:

1. Replace and/or remove four culverts to improve access to approximately 4.2 miles of spawning, rearing, and high intrinsic potential habitat for fish and other aquatic species.
2. Decommission existing roads and fence riparian areas to eliminate grazing adjacent to stream channels in order to reduce sediment delivery to stream channels and restore water quality.
3. Plant trees and remove noxious weeds within the riparian area to increase the availability of large woody debris that could be recruited to the stream channel.
4. Place logs and boulders in the stream channel and restore stream sinuosity to improve channel complexity in streams that have a high intrinsic potential for fish.

The need for the action is that the management objectives from the 2008 Eugene District Resource Management Plan to provide large wood delivery to stream channels and restore access to stream channels for fish and other aquatic species are not being met along Swamp Creek. Currently, the culverts at milepost 0.22 (Road No. 16-7-6) and mileposts 0.44, 0.6, and 0.82 (Road No. 16-7-6.1), block adult salmonid migrations at various flows and juvenile movements at most flows. The riparian area currently lacks larger conifers that could be recruited to the stream channel. This lack of large wood recruitment to the stream channel has resulted in poor channel complexity throughout a reach that has a high intrinsic potential to support salmonids.

1.2. ISSUES SELECTED FOR ANALYSIS

ISSUE 1: Effects of the barrier culvert removals and instream structure placement on ESA listed coho salmon and designated critical habitat.

ISSUE 2: Effects of the proposed culvert removals on Road Nos. 16-7-6 and 16-7-6.1 on neighboring private land owners and public access.

1.3. ISSUES CONSIDERED BUT NOT ANALYZED

The effect of spreading noxious weeds to the culvert replacement site was an issue considered but not selected for analysis because the Best Management Practice (BMP) of cleaning heavy equipment used in the culvert removal and replacement prior to bringing the equipment onsite would be implemented.

2.0 ALTERNATIVES AND PROPOSED ACTION

2.1. Alternative 1 – No Action

Under the No Action Alternative, no additional actions would be taken to increase stream structure, replace or remove barrier culverts or stabilize roads. No logs, boulders, or gravel would be placed in the stream channel. No actions would be taken to prevent cattle from damaging the riparian area.

2.2. Alternative 2 – Proposed Action

1. Remove or replace migration barriers for fish and aquatic species. Replace barriers with structures (e.g. culverts or bridges) that allow for migration/access to upstream habitat in order to meet riparian management objectives (USDI, 2008 page 32).
2. Increase instream structure and restore stream sinuosity (e.g. large wood and boulders) to improve habitat complexity, reduce stream velocities, and improve passage at culverts for fish and aquatic species.
3. Decommission existing roads and fence riparian areas to eliminate cattle grazing adjacent to stream channels in order to reduce sediment delivery to stream channels and restore water quality.
4. Remove noxious weeds and plant trees within the riparian areas to increase the availability of large woody debris that could be recruited to the stream channel.

Fish and Aquatic Species Passage

The Proposed Action would include the removal and replacement of one barrier culvert on Road No. 16-7-6, a BLM owned and controlled road on private land. The culvert would be replaced with a new culvert, structural arch, bridge or other appropriate aquatic species passage structure that would provide for the movement of anadromous and resident fish and other aquatic organisms up and down stream. The type of structure to be used would be determined based on existing substrates and flows at the site. The structure would be constructed using a stream simulation method or a similar technique that meets federal government standards for stream passage as related to aquatic species passage and flood flows. Supplemental jump weirs would be installed below the structure during or after installation if future stream grade adjustments for fish and aquatic species passage are necessary. Trees within the culvert replacement site would be removed for safety reasons and used for instream work where feasible. Additional excavation would occur at the site as necessary to accommodate a larger structure. Fill around the existing culvert would be stored at borrow sites and reused around the new structure.

In addition, three culverts would be removed on Road No. 16-7-6.1, upstream from the culvert replacement site. The associated road would be decommissioned by the culvert removals and by decompacting the road surface where cattle may have impacted the road close to the stream. At approximately milepost 0.44, near the BLM-administered/private ownership property line, a low water crossing would be constructed at the culvert removal site to allow access to private land. Gravel and rock would be placed within the stream channel to provide channel stability and surface flow during periods of low stream flow. Boulders and logs would also be placed within the reach to reduce the potential for erosion and upstream down cutting.

Best management practices would be applied to excavated areas to stabilize the disturbed area and reduce the amount of sediment delivered to the stream channel.

Depending on site conditions, gravels, boulders and or woody debris (logs) would be added in conjunction with the culverts or other structures to assist with aquatic species passage and to maintain a more natural stream bottom beneath or within the new structure.

Instream Restoration

Large wood and boulders would be placed in the stream channel to increase habitat complexity. Instream activities would occur in the stream channel in the “in-water work period” from July 1 through September 15 in accordance with the Oregon Department of Fish and Wildlife (ODFW). Approximate locations of log, boulder and gravel placement are shown

on Map 1 (*Swamp Creek Barrier Culverts*). As described in the Affected Environment section below, heavy equipment would be used to modify stream channels in order to re-establish stream sinuosity and increase habitat complexity. The instream restoration design and implementation for the Proposed Action would be similar to that described in the Lake Creek Aquatic Habitat Management Plan (LCAHMP) (May, 2000). Design features for the project have been identified and are listed in Appendix A of this EA.

Riparian Fencing and Tree Planting

The Proposed Action would include installing a fence on private land adjacent to the riparian area of Swamp Creek in order to exclude cattle. The riparian areas would be planted to increase vegetation, restore riparian conditions, and increase the availability of trees for future large wood recruitment to the stream channel. Activities are proposed within riparian area to also control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain riparian management objectives (USDI, 2008).

Proposed Mitigation

Because the action areas are within the disruption distance (100 yards) of un-surveyed suitable marbled murrelet habitat, operations utilizing heavy machinery, chainsaws or other power equipment would not begin until two hours after sunrise and would cease two hours prior to sunset between April 1 and September 15; unless a wildlife biologist determines the mitigation standard does not need to be applied after August 5 if the Industrial Fire Precaution Level is at Level 2 or higher. The project does not affect the primary constituent elements of spotted owl habitat and therefore no mitigations are necessary for the northern spotted owl.

3.0 LAND USE PLAN CONFORMANCE

The Proposed Action and alternative are in conformance with the 2008 Eugene Record of Decision and Resource Management Plan and meet the objectives identified for the Riparian Land Use Allocation.

4.0 AFFECTED ENVIRONMENT

The Proposed Action would occur in Swamp Creek and tributaries to Swamp Creek. There are several anadromous and resident fish species that occur within Swamp Creek:

Common Name	Scientific Name
Coho Salmon	*Oncorhynchus kisutch*
Cutthroat Trout	*Oncorhynchus clarkii*
Sculpin Species	*Cottidae sp.*

Swamp Creek and several of its tributaries have been identified as having a high intrinsic potential to support salmonids. However, aquatic and riparian habitat in Swamp Creek has been altered and degraded over time.

The FEIS RMP describes the aquatic ecosystem conditions and processes for ecosystems typical of Swamp Creek. The FEIS RMP concluded that:

- Habitat degradation is a factor for decline for the Oregon Coast coho salmon, and is a major risk factor that continues to threaten population segments.
- Large wood and sediment are two of four factors that have the greatest influence on aquatic habitat and the ability of aquatic habitat to support fish populations.
- The abundance and survival of fish species is often closely linked to the abundance of large woody debris in stream channels. The current amount of large woody debris in channels is low.
- Seventy-five percent of streams on BLM-administered lands in the Coast Range province had less than 22% embeddedness of fine sediment.

Chapter 3 (pages 365-390) of the FEIS RMP describes the aquatic ecosystem conditions and processes.

In 2001, the Oregon Department of Fish and Wildlife conducted surveys, including fish presence surveys, in the North Fork of Swamp Creek in the proposed project reaches, and in Swamp Creek in 2002. This survey data and supporting information can be viewed at: http://oregonstate.edu/Dept/ODFW/freshwater/inventory/index.htm. The LCAHMP (Appendix A, pg 35-36; Appendix D, pg. 74) and the Lake Creek Watershed Analysis (Ch.4, pg. 27; Ch.7, pg. 2-3) describe the current condition of the affected environment. In 2003, BLM completed a fish passage and road/stream crossing assessment for culverts in the LCAHMP in the Swamp Creek drainage (USFS and ODFW). Salmonid and other fish species population and amphibian surveys have been conducted in Lake and Swamp Creek since the early 1970's (Lake Creek Watershed Analysis, 1995). These documents describe the fish passage barriers at road and stream crossings as a result of undersized culverts. The decrease of larger conifers in the riparian area as a result of timber harvest; grazing adjacent to the stream channel; a reduction of instream habitat complexity over time as a result of channel straightening; a reduction of large wood recruitment to the stream channel; and increases in chronic sediment delivery to the stream channel as a result of adjacent road conditions and grazing within the riparian area are also described.

Oregon Coast coho critical habitat was designated on March 12, 2008 (50FR7816), including Swamp Creek. The National Marine Fisheries Service (NMFS) Critical Habitat Analytical Review Team (CHART) rated watersheds in Oregon as having a high, medium, or low conservation value for listed salmonids (USDC NOAA, 2005). The Lake Creek watershed is rated as having a high conservation value for coho (USDC NOAA, 2005).

Large wood is an important component of aquatic habitats, from headwater channels to estuaries in forested ecosystems (Dolloff and Warren 2003) and is delivered to stream channels from various processes (Naiman et al., 2000). The FEIS RMP concluded that prior to the 20th century, large channels and large rivers such as the Willamette River were full of wood or blocked by wood jams and accumulations, but that wood loading in the Pacific Northwest has generally declined to 1/100th of historical amounts. A detailed description of the importance and function of large wood, wood recruitment processes, and a description of the decline of large wood in stream channels can be found in the FEIS RMP on pages 372-383.

Over time, the amount of large wood within Swamp Creek has also declined. Many riparian trees have been removed, which has reduced the recruitment of large woody debris to stream channels. Additionally, tributaries of Swamp Creek such as Druggs Creek, West Fork Swamp, and portions of Pontius Creek have been re-routed with heavy equipment in order to manage agricultural lands. This has resulted in channel simplification (straightening) in the lower and middle reaches of the mainstem. The straightening of these stream reaches has resulted in increased in stream velocities, a decrease of fish rearing habitat, altered riparian vegetation, and a reduction of potential large woody debris from conifer sources to brush and hardwoods.

In Western Oregon, ODFW considers the amount of large wood in stream channels to be high if there are more than 48 pieces per mile and low if there are less than 16 pieces per mile (Foster et al, 2001). The current amount of large wood within stream channels in the watersheds is a reflection of natural disturbance and past management. Aquatic habitat inventories and watershed analysis have documented the current amount of large wood in surveyed stream channels. Compared to the benchmark values, the average amount of large wood in Swamp Creek is less than 16 pieces per mile and considered "low".

Sediment Delivery to Stream Channels:

Fine sediments (sand, silt, and clay at less than 2 millimeters) enter and leave river channels naturally, but increased suspended sediment (turbidity) and sedimentation (embeddedness) can adversely affect fish (Anderson et al. 1996).

The effects of fine sediment on fish habitat are generally expressed as the percent of embeddedness at reach scales. Embeddedness is defined as the degree to which larger particles (such as boulders, cobble, and gravel) are surrounded and/or covered by smaller particles (silt, sand). Increases in

sedimentation or embeddedness can reduce fish-spawning and rearing habitat, fish egg and fry survival, and food availability (Chamberlin et al. 1991, Hicks et al. 1991).

The FEIS RMP describes the current fine sediment levels in stream channels and the thresholds at which effects to fish occur (Chapter 3 – Fish, pages 385-388). "Natural", "good", or "properly functioning" levels for the Coast Range province vary between 20% embeddedness (ODFW), 22% (EPA), 26% embeddedness (Murphy and Hall, 1981), and 52% (Murphy and Hall, 1981). The average amount of embeddedness in stream channels within Swamp Creek is approximately 54% and considered "high" compared to these levels.

The existing rate of fine sediment delivery entering stream channels from roads in the Lake Creek watershed is estimated to be approximately 17 tons per square mile per year on average (Swanson et al. 1982, Stallman et al. 2005).

Increased concentrations of suspended sediment (turbidity) can also have direct effects on fish behavior, physiology, and growth (Anderson et al. 1996). Currently, Swamp Creek and its tributaries are not listed by the Oregon Department of Environmental Quality (ODEQ) as turbidity impaired.

5.0 ENVIRONMENTAL CONSEQUENCES

5.1. PAST, PRESENT AND REASONABLY FOREEABLE FUTURE ACTIONS

Previous restoration work within Swamp Creek included the replacement of two barrier culverts on Pontius Creek, a tributary of Swamp Creek. Additionally, a large amount of garbage has been removed adjacent to Swamp Creek to prevent toxic waste from entering the stream reach. Many riparian trees have been removed which has reduced the recruitment of large woody debris to stream channels. Additionally, tributaries of Swamp Creek such as Druggs Creek, West Fork Swamp, and portions of Pontius Creek have been re-routed with heavy equipment in order to manage agricultural lands. This has resulted in channel simplification (straightening) in the lower and middle reaches of the mainstem. The straightening of these stream reaches has resulted in increased in stream velocities, a decrease of fish rearing habitat, altered riparian vegetation, and a reduction of potential large woody debris from conifer sources to brush and hardwoods. Other restoration actions may occur in the future as and when funding becomes available by BLM or other private land owners and government agencies.

5.2. DIRECT AND INDIRECT EFFECTS

ISSUE 1: Effects of the barrier culvert removals and instream structure placement on ESA listed coho salmon and designated critical habitat.

Proposed Action

The removal and replacement of culverts, streambank improvement, and placement of instream structures that would be beneficial for both coho habitat and populations would also result in short-term increases in sediment delivery and turbidity to Swamp Creek.

Large wood, boulder and gravel placement, streambank restoration, and culvert projects would require the operation of heavy equipment within and adjacent to the stream channel. These activities would temporarily (less than two weeks) disturb the riparian vegetation, expose soil, and increase stream turbidity and fine sediments.

Fish species have the ability to cope with some level of sediment at various life stages (BLM, 2008). Increases in suspended sediment and turbidity can have both beneficial and detrimental effects to coho salmon and other fish species. At certain levels, elevated turbidity can increase cover, reduce predation rates, and improve survival (NMFS, 2008). However, chronic exposure and increased turbidity greater than 25 nephelometric turbidity units can cause physiological stress responses that reduce feeding and growth in coho salmon (BLM, 2008). Bisson and Bilby (1982) found that juvenile coho salmon avoided water with turbidities that exceeded 70 nephelometric turbidity units. However, the timing, frequency, and duration

of exposure is often more important in determining the effects to fish that the overall concentration or amount (BLM, 2008; NMFS, 2008).

The proposed instream restoration and culvert replacement activities would increase turbidity (from instream disturbance from existing sediment) and embeddedness (fine sediment delivery in the stream channel from disturbance adjacent to the stream channel). Many studies have shown that fish can tolerate sediment exposure for short periods (McLeay et al. 1983); typically 3-5 days (Sigler et al, 1984) before adverse effects occur. Turbidity would increase above 25 nephelometric turbidity units for approximately several hours each day over a one to two week period. In order to meet ODEQ standards for increases in turbidity, increases in turbidity would not increase above 50 nephelometric turbidity units from the background rate (or no greater than 10%). Best Management Practices such as sediment control structures would be used to limit the increase in turbidity below this standard. Turbidity levels would decrease and return to background levels within approximately 2-24 hours (NOAA, 2008) after cessation of stream channel disturbance. Increases in fine sediment delivery to the stream channel would also occur from streambank disturbance and would temporarily increase stream substrate embeddedness at the site.

The Proposed Action would occur between July and September to minimize the impacts to fish populations. During this time period, adverse effects would be limited to resident fish species and coho salmon juveniles because fry would have previously emerged from stream gravels and returning adults would not be present or spawning.

Adverse effects to fish would be short-term and would occur during and shortly after construction. Direct mortality of fish would not occur as a result of the Proposed Action since increases in turbidity and fine sediment (embeddedness) would not be elevated to lethal levels. Adverse effects to coho salmon juveniles would include temporary avoidance, reduced feeding, and gill stress (Sutte et al, 2004, Bash et al, 2001) since the duration of the increase would occur beyond 3-5 days and at concentrations above 25 nephelometric turbidity units. The magnitude of the adverse effects to fish populations would be limited to the project reach (1.50 miles) and would not reduce fish populations because of the limited magnitude and duration of the effect. Increases in embeddedness would be temporary, would not increase to levels that would reduce spawning or pool depth, and would be limited to the project reach.

The culvert removal and placement of gravel for a low water crossing at Road No.16-7-6.1 (milepost 0.44) could potentially result in future sediment transport. Driving across a streambed could mobilize existing sediment that would not otherwise be transported during low flows. However, the stream gravel and other material would be added at the crossing to reduce or prevent the mobilizing of sediment. Sample et al. (1998) showed that, compared to a natural (unimproved) ford, much less sediment appeared downstream of a hardened ford (streambed excavated and replaced with compacted rock and gravel) after vehicles crossed. However, there are no reasonably foreseeable future actions that involve use of this low water crossing. There are no specific proposals or plans for actions that would require use of this low water crossing. Because the crossing would provide access to a small area (less than one acre) and would only be accessible for portions of the year (low flows), future use of the crossing is not highly probable based on known opportunities or trends. Therefore, the effects of future use of this low water crossing are speculative at this time.

The placement of instream structure, streambank improvement, and removal and replacement of culverts would also have a long term beneficial effect for coho salmon and other fish species. The placement of large wood and boulders would increase habitat complexity and result in an increase in cover and substrate for spawning. Roni and Quinn (2001a) found that large wood placement can lead to higher densities of juvenile coho salmon and increased growth. Roni et al (2006) found that the placement of boulder weirs led to increased pool area and increased abundances of coho salmon. The addition of gravels to the stream channel would increase spawning substrate available for coho salmon and other fish species. Merz and Chan (2005) found that gravel augmentation resulted in increased macroinvertebrate densities and biomass, thus leading to more food for juvenile salmonids.

Reeves et al (1995) described the four primary factors that affect the survival traits of fish which included increased mobility of juveniles. Removing these fish passage barriers increases the ability for juvenile coho to access cooler stream reaches during summer months and refuge areas from higher flows during winter months (USDI, 2008).

Approximately 4.2 miles of stream habitat suitable for adult and juvenile coho use would be made available after the removal of the four barrier culverts.

No Action

Under the No Action Alternative, no actions would be taken to replace barrier culverts, improve habitat complexity, improve bank stability or decommission roads. Culvert replacement already occurs as part of the district road maintenance program as culverts become damaged, age and decay. However, the emphasis would be on road stability and not on assisting with recovery of the aquatic system and its associated fauna. The existing culverts would likely stay in place for an estimated 15 to 30 years barring no major culvert removing flood events and would continue to be barriers to aquatic species movement. Cattle would continue to trespass and degrade riparian areas.

Under the No Action alternative, no stream or streambank disturbance would occur; therefore the background turbidity would continue at existing levels. Chronic fine sediment delivery from existing roads would continue at existing rates and would increase the amount of embeddedness within the stream channel over time within tributaries of Swamp Creek.

ISSUE 2: Effects of the proposed culvert removals in Road Nos. 16-7-6 and 16-7-6.1 on neighboring private land owners and public access.

The Proposed Action of removing and replacing the culvert under Road No. 16-7-6 in T. 16 S., R. 7 W. Section 6 would potentially restrict vehicular traffic from approximately July 1 through September 15 of the given year of culvert replacement. Replacement of this culvert would be expected occur over approximately a two to three week period. An alternate route for access to private land holdings west of this removal is located to the north and west and consists of Road No. 15-7-28 (Majors Creek road) via mainline Road No. 15-7-34.1 and County Road 3640. This route takes an estimated thirty to sixty minutes longer than the normal route of travel from Road No. 16-7-6 to County Road 3658 and State Highway 36. Should the need for additional culvert replacement time extend beyond the guidelines for timing of stream enhancement work, there would be a possibility the area would be closed to the public for additional, weekly time intervals.

The removal of the three culverts under Road No. 16-7-6.1 road would prohibit public access to BLM-administered land in Section 31 indefinitely. The installation of a gate at the junction with Road No. 16-7-6 would also prohibit access to BLM lands, but would also likely prevent future garbage dumping.

No Action

Under the No Action alternative, there would be no restriction of vehicular traffic flow through the project area.

6.0 CONSULTATION AND COORDINATION

ESA Critical Habitat – Essential Fish Habitat – Listed Fish Habitat: The Endangered Species Act (ESA) requires the federal government to designate “critical habitat” for any species it lists under the ESA; in this case, salmon and steelhead. Coho critical habitat designation became effective on May 12, 2008. “Critical habitat” is defined as: (1) specific areas within the geographical area occupied by the species *at the time of listing*, if they contain physical or biological features essential to conservation, and those features may require special management considerations or protection; and (2) specific *areas outside the geographical area occupied* by the species if the agency determines that the area itself is essential for conservation. The Magnuson-Stevens Fishery Conservation and Management Act requires Federal agencies to consult with the Secretary of Commerce regarding any

action or proposed action authorized, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH) under the Act.

The Proposed Action would occur within Swamp Creek, which is listed as designated critical habitat and as essential fish habitat (EFH). Coho salmon utilize Swamp Creek for spawning, rearing, and migration.

Coho Salmon: The proposed instream restoration actions would be a Likely to Adversely Effect under ESA and a May Adversely Affect for Essential Fish Habitat (EFH) for Oregon Coast coho salmon. ESA Section 7 and EFH consultation has been completed for the Proposed Action. The National Marine Fisheries Services issued a Biological Opinion for Fish Habitat Restoration Activities in Oregon and Washington on June 27, 2008.

Marbled Murrelets: Because the action areas are within the disruption distance (100 yards) of unsurveyed suitable marbled murrelet habitat, operations utilizing heavy machinery, chainsaws or other power equipment may not begin until two hours after sunrise and must cease two hours prior to sunset between April 1 and September 15. These timing restrictions make the Proposed Action a Not Likely to Adversely Affect on marbled murrelets due to disturbance. The wildlife biologist may waive this mitigation standard after August 5 if the Industrial Fire Precaution Level is at Level 2 or higher. Consultation has been completed with the United States Fish and Wildlife Service which issued an Aquatic Restoration Biological Opinion on June 14, 2007 for wildlife species. The Proposed Action is No Affect to marbled murrelets due to habitat modification.

Northern Spotted Owls: There are no mitigations necessary for the northern spotted owl at this location since recent annual surveys in the vicinity have resulted in no spotted owl occupancy and the project does not affect the primary constituent elements of spotted owl habitat; the project is a No Effect for spotted owls. Northern Spotted Owls are a threatened species.

Bureau sensitive wildlife species: None have been identified in the project area.

Special Status plants: None were found at the culverts sites or surveyed riparian areas adjacent to Road No. 16-7-6.

Cultural resources: The project area occurs in the Coast Range and survey techniques are based on those described in Appendix D of the *Protocol for Managing Cultural Resource on Lands Administered by the Bureau of Land Management in Oregon*. There are no known cultural resources in the project area.

Permits: All required permits would be obtained prior to the beginning of project work. Work under the Proposed Action would require a “General Authorization” permit from the Oregon Department of State Lands, unless the pending BLM programmatic general authorization permit for restoration actions is completed before activities begin.

Private Lands: Under the Oregon Coastal Salmon Restoration Initiative and authority provided to BLM by the Wyden Amendment (House Report, 1997), BLM has agreed to cooperate with other land owners in development and implementation of aquatic habitat restoration. Personal communications were conducted with adjacent private land owners with regard to proposed restoration activities and issues that could affect private resources and/or activities.

7.0 MONITORING

Post- project monitoring of aquatic species populations and/or presence and habitat changes as a result of the Proposed Action would continue for up to 15 years. Photography would be used to document changes in project stability and effects on adjoining riparian and stream habitats. Spawning ground counts would be continued in established index areas to determine whether passage occurs beyond the new replacement and the barrier removals. Juvenile sampling, using snorkeling and electrofishing would also be used to verify adult passage. Information on non-salmonid fish and amphibian species would be collected after project work. Disturbance areas would be monitored for invasive non-native plant species. The BLM would ensure completion of a monitoring and reporting

program to conform to the Terms and Conditions in the Biological Opinion for Fish Habitat Restoration Activities in Oregon and Washington Incidental Take Statement (NMFS 2008).

8.0 LIST OF CONTRIBUTORS

The following Bureau of Land Management specialists have examined the Proposed Action and have provided either written or verbal input in this assessment:

Leo Poole	BLM Fisheries Biologist/EA Writer
Nikki Moore	BLM District Fisheries Biologist
Steve Steiner	BLM Hydrologist
Karin Baitis	BLM Soil Scientist
Dan Crannell	BLM Wildlife Biologist
Sharmila Premdas	BLM Landscape Planner/NEPA
Doug Goldenberg	BLM Botanist
Gary Cairns	BLM Civil Engineering Technician
Heather Ulrich	BLM District Archeologist SCEP

9.0 PUBLIC PARTICIPATION

A public notice advertising of this EA and preliminary FONSI will be published in the Eugene Register Guard on April 29, 2009 and will be available for public comment for 30 days. The public comment period closes on May 29, 2009. The EA will be sent to local landowners, interest groups, state and local government agencies, and other members of the public who have expressed interest in restoration projects.

10.0 REFERENCES

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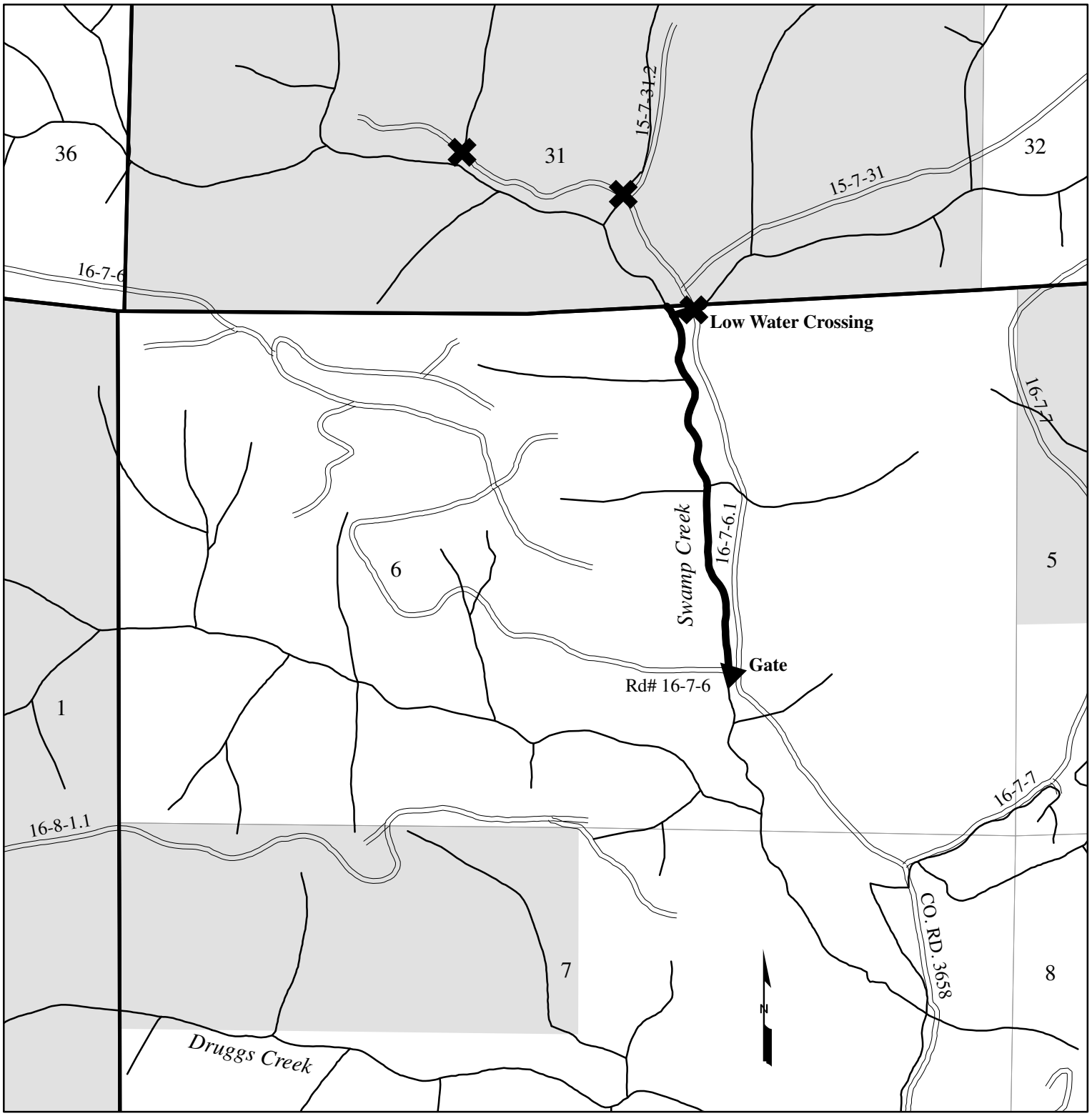
APPENDIX A. PROJECT DESIGN FEATURES

The following design features have been identified:

1. Guidelines established for timing of stream enhancement work by the Oregon Department of Fish and Wildlife (ODFW) would be adopted. Changes to the guidelines would be in concurrence with BLM and ODFW.
2. To prevent the further spread of noxious weeds, cleaning of heavy equipment would be required prior to entering project areas.
3. Movement of heavy equipment would be kept to a minimum in project areas to prevent the spread of noxious weeds.
4. As much coarse woody material (including stumps) as possible would be retained at project sites.
5. If funding is available, Scot's broom and/or non-native blackberry (Himalayan and evergreen), *Geranium robertianum*, English laurel and English holly plants would be pulled within project areas prior to equipment move-in and in the year after project implementation to prevent further spread.
6. To help maintain the existing native plant communities, roadsides would be seeded with native species mixtures. If native seed is not available and seeding is necessary for erosion control, an annual (70%) and perennial (30%) rye mixture would be used with strict guidelines on seed purity.
7. All tree falling would occur away from BLM Special Status sites.
8. When working in or next to the stream channel spill kits and an approved spill containment plan would be included in operations.
9. To reduce the potential for introduction of silt or petroleum products, when stream depth and channel conditions allow, use of a by-pass or retaining basin may be adopted.
10. Exposed sites would be hydro-mulched. Straw bales (or an accepted substitute) would be used for erosion controls as directed by the contracting officer.
11. No fresh concrete would come in contact with the active flowing stream (if used in culvert installation).
12. Turbidity should not exceed 10% above natural stream turbidities as a result of the project. The turbidity standard may be exceeded for a limited duration, (per OAR 340-41) provided all practicable erosion control measures have been implemented as applicable, including, but not limited to:
    - use of filter bags, sediment fences, silt curtains, leave strips or berms, or other measures sufficient to prevent offsite movement of soil;
    - use of an impervious material to cover stockpiles when unattended or during a rain event;
    - graveled construction accesses to prevent movement of material off site via construction vehicles;
    - sediment traps or catch basins to settle out solids prior to water entering ditches or waterways; and
    - erosion control measures shall be maintained as necessary to ensure their continued effectiveness, until soils become stabilized.

Swamp Creek Barrier Culverts

T.15 S., R.7 W., Sec. 31, and T.16 S., R.7 W., Sec. 6



Streams

Instream Restoration

Culvert--Remove

Culvert--Replace

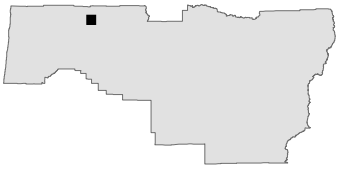
Roads

BLM_Ownership

Feet

0 750 1,500 3,000

Lane County, Or.



NATIONAL SYSTEM OF PUBLIC LANDS

United States Department of the Interior
Bureau of Land Management
Eugene District Office
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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
EUGENE DISTRICT OFFICE

Lake Creek Drainage – Swamp Creek Subbasin
Aquatic and Riparian Habitat
Restoration Plan

Preliminary Finding of No Significant Impact
DOI-BLM-OR-E050-2009-0001

Background

The Bureau of Land Management has prepared an Environmental Assessment (EA) (DOI-BLM-OR-E050-2009-0001) which has analyzed the effects of aquatic restoration work on Swamp Creek located at T. 15 S., R. 7 W., Sections 31 and 32; T. 16 S., R. 8 W., Section 1; and T. 16 S., R. 7 W., Sections 5 and 6. The EA considers two alternatives, the No Action and the Proposed Action alternatives.

Finding of No Significant Impact

On the basis of the information contained in the EA (DOI-BLM-OR-E050-2009-0001), and all other information available to me, it is my determination that the implementation of the proposed action is in conformance with the Eugene District's 2008 Record of Decision and Resource Management Plan (2008 ROD/RMP). The analysis supporting this determination tiers to the 2008 Final Environmental Impact Statement for the Revision of the Resource Management Plan of the Western Oregon Bureau of Land Management (2008 EIS RMP).

The implementation of this project will not have significant environmental effects beyond those already identified in the Final EIS. The proposed action does not constitute a major federal action having significant effects on the human environment; therefore, an environmental impact statement will not be prepared.

This finding is based on my consideration of the Council on Environmental Quality's (CEQ) criteria for significance (40 CFR 1508.27), both with regard to the context and to the intensity of the impacts described in the EA or as articulated in the letters of comment.

Context

The proposed action would occur within the Riparian Management Area, designated by the 2008 Eugene District ROD/RMP. Coho salmon (*Oncorhynchus kisutch*) within the watershed are part of the Oregon Coast coho salmon Evolutionary Significant Unit and are listed as threatened under the Endangered Species Act. The FEIS RMP describes the status of the species, including life history, populations, status and distribution, and key limiting factors for the Oregon Coast coho Evolutionary Significant Unit. Habitat degradation has been identified as a factor of decline and a limiting factor that continues to threaten the Oregon Coast coho salmon population. The 2008 ROD/RMP anticipated that aquatic restoration would occur within a major portion of the streams on the resource area to achieve restoration management objectives. Under the proposed action, fish passage would be restored and improved stream channel complexity would benefit aquatic species. Stream restoration is also planned on private lands. Under the Oregon Coastal Salmon Restoration Initiative and authority provided to BLM by the Wyden Amendment (House Report, 1997), BLM has agreed to cooperate with other land owners in development and implementation of aquatic habitat restoration.

Intensity

I have considered the potential intensity/severity of the impacts anticipated from the Swamp Creek Aquatic Restoration Project relative to each of the areas suggested by the CEQ. With regards to each:

1. **Impacts that may be both beneficial and adverse.** The EA considered both potential beneficial and adverse effects. None of the effects are beyond the range of effects analyzed in the Eugene District 2008 Final Environmental Impact Statement to which this EA is tiered. Adverse effects to fish would be short-term and would occur during and shortly after construction. Direct mortality of fish would not occur as a result of the proposed action since

increases in turbidity and fine sediment (embeddedness) would not be elevated to lethal levels. Adverse effects to coho salmon juveniles would include temporary avoidance, reduced feeding, and gill stress (Sutte et al, 2004, Bash et al, 2001) since the duration of the increase would occur beyond 3-5 days and at concentrations above 25 nephelometric turbidity units. The magnitude of the adverse effects to fish populations would be limited to the project reach (1.50 miles) and would not reduce fish populations because of the limited magnitude and duration of the effect. Increases in embeddedness would be temporary, would not increase to levels that would reduce spawning or pool depth, and would be limited to the project reach.

Approximately 4.2 miles of stream habitat suitable for adult and juvenile coho use will be made available after the removal of the four barrier culverts. The placement of instream structures, streambank improvement, and removal and replacement of culverts would have a long term beneficial effect for coho salmon and other fish species by increasing habitat complexity, cover, and substrate for spawning.

2. **The degree to which the proposed action affects public health and safety**. No aspect of the proposed action would have an effect on public health and safety.

3. **Unique characteristics of the geographic area such as proximity of historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.** There are no parks, prime farmlands, or wild and scenic rivers in the project area. There are no known historic or cultural resources in close proximity to the project site. The archaeologist's report states the area as being low for cultural site sensitivity.

4. **Degree to which effects are likely to be highly controversial.** Aquatic restoration projects such as these have been carried out several times in past years. No unique or appreciable scientific controversy has been identified regarding the effects of the proposed action.

5. **The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.** The analysis has not shown that there would be any unique or unknown risks to the human environment not previously considered and analyzed in the EISs to which this determination is tiered. Aquatic restoration has occurred on the Eugene District for a number of years and has been conducted in a manner that avoids unique or unknown risks. The use of Best Management Practices incorporated in the project design features substantially improves our capability to lessen impacts to the human environment.

6. **The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.** This project does not represent a decision in principle about future actions.

7. **Whether the action is related to other action with individually insignificant but cumulatively significant impacts.** The EA did not reveal any cumulative effects beyond those already analyzed in the EISs which accompanied the 2008 ROD/RMP.

8. **The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing the National Register of Historic Places or may cause loss or destruction of scientific, cultural, or historic resources.** There are no features within the planning area that are listed or eligible for listing in the National Register of Historic Places. The project is not expected to cause loss or destruction of scientific, cultural or historic resources.

9. **The degree to which the action may adversely affect an endangered or threatened species or its habitat has been determined to be critical under the Endangered Species Act of 1973. Marbled Murrelets are a threatened species.** Because the action areas are within the disruption distance (100 yards) of unsurveyed suitable marbled murrelet habitat, operations utilizing heavy machinery, chainsaws or other power equipment may not begin until two hours after sunrise and must cease two hours prior to sunset between April 1 and September 15. These timing restrictions make the proposed action a Not Likely to Adversely Affect on marbled murrelets due to disturbance. Consultation has been completed with the United States Fish and Wildlife Service which issued an Aquatic Restoration Biological Opinion

on June 14, 2007 for wildlife species. The Proposed Action is No Affect to the marbled murrelet due to habitat modification. The project is a No Effect for spotted owls.

Coho salmon are present in the stream channel where restoration is to take place. Coho salmon are currently listed as threatened. Culvert replacement with a new passage structure and stream restoration will cause a transient increase in sediment. Adverse effects to fish would be short-term and would occur during and shortly after construction. The effects determination is Likely to Adversely Affect coho salmon due to this short term impact. The restoration action has long term benefits such as improving and increasing spawning and rearing habitat available for coho salmon and other aquatic species. Section 7 consultation has been completed with National Marine Fisheries Services under the Biological Opinion for Fish Habitat Restoration Activities in Oregon and Washington issued on June 27, 2008.

10. **Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.** The proposed action does not threaten to violate any law. The proposed instream restoration and culvert replacement activities would increase turbidity (from instream disturbance due to existing sediment) above 25 nephelometric turbidity units for approximately several hours each day over a one to two week period. In order to meet ODEQ standards for increases in turbidity, increases in turbidity would not increase above 50 nephelometric turbidity units from the background rate (or no greater than 10%). Best Management Practices such as sediment control structures would be used to limit the increase in turbidity below this standard. Turbidity levels would decrease and return to background levels within approximately 2-24 hours (NOAA, 2008) after cessation of stream channel disturbance.

_____ _____

Field Manager Date
Siuslaw Resource Area