



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB2001-0173-FEC

May 15, 2002

Mr. Lawrence C. Evans
U.S. Army Corps of Engineers
Portland District, CENWP-CO-GP
P.O. Box 2946
Portland, Oregon 97208-2946

Re: Endangered Species Action Section 7 Formal Consultation and Magnuson-Stevens Act
Essential Fish Habitat Consultation on the Joyce Streambank Protection Project, South
Umpqua River, Douglas County, Oregon (Corps No. 2001-00310)

Dear Mr. Evans:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) for the Joyce Streambank Protection Project, Douglas County, Oregon. NMFS concludes in this Opinion that the proposed action is not likely to jeopardize Oregon Coast (OC) coho salmon (*Oncorhynchus kisutch*) or destroy or adversely modify critical habitat. Pursuant to section 7 of the ESA, NMFS has included reasonable and prudent measures with non-discretionary terms and conditions that NMFS believes are necessary and appropriate to minimize the potential for incidental take associated with this project.

NMFS suspended this consultation on September 12, 2001 after U. S. District Court Judge Michael Hogan issued an order setting aside the listing of OC coho salmon as threatened under the Endangered Species Act. On December 14, 2001, the Ninth U. S. Circuit Court of Appeals stayed Judge Hogan's order pending resolution of an appeal, thus reinstating OC coho salmon as a threatened species. Although NMFS promptly resumed this consultation, the temporary suspension due to changes in the legal status of OC coho salmon added significantly to the time necessary for its completion. We apologize for any inconvenience caused by this delay.

The attached biological opinion contains an analysis of the effects of the proposed action on designated critical habitat. Shortly before the issuance of this opinion, however, a Federal court vacated the rule designating critical habitat for the ESUs considered in this opinion. The analysis and conclusions regarding critical habitat remain informative for our application of the jeopardy standard even though they no longer have independent legal significance. Also, if critical habitat is redesignated before this action is fully implemented, the analysis will be relevant when determining whether a reinitiation of consultation will be necessary at that time.



For these reasons and the need to timely issue this opinion, our critical habitat analysis has not been removed from this opinion.

This Opinion also serves as consultation on essential fish habitat pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and its implementing regulations (50 CFR Part 600). NMFS concluded that the proposed action may adversely affect designated EFH for OC coho salmon and OC chinook salmon (*O. tshawytscha*). As required by section 305(b)(4)(A) of the MSA, included are conservation recommendations that NMFS believes will avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from the proposed action. As described in the enclosed consultation, 305(b)(4)(B) of the MSA requires that a Federal action agency must provide a detailed response in writing within 30 days after receiving an EFH conservation recommendation.

Questions regarding this letter should be directed to Ken Phippen of my staff in the Oregon Habitat Branch at 541.957.3385.

Sincerely,


f.1
D. Robert Lohn
Regional Administrator

cc: Ed Emerick, Oregon Division of State Lands
Jim Brick, Oregon Department of Fish and Wildlife
Steve Wille, U.S. Fish and Wildlife Service
Walter Barton, Douglas Soil and Water Conservation District

Endangered Species Act - Section 7 Consultation
&
Magnuson-Stevens Act
Essential Fish Habitat Consultation
BIOLOGICAL OPINION

Joyce Streambank Protection Project, South Umpqua River, Douglas County, Oregon

Agency: Army Corps of Engineers

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: May 15, 2002

Issued by: *Michael R. Couse*

D. Robert Lohn
Regional Administrator

Refer to: OSB2001-0173-FEC

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1. ENDANGERED SPECIES ACT

1.1 Background

On July 30, 2001, you requested informal consultation under section 7 of the Endangered Species Act (ESA) on issuance of a permit under Section 404 of the Clean Water Act. The applicant (Douglas Soil and Water Conservation District - DSWCD) proposes to construct five rock barbs within the South Umpqua River and bank on the Jack Joyce property. The National Marine Fisheries Service (NMFS) has reviewed the materials provided by the Corps of Engineers (COE), a cover letter and the application to the COE, conducted several site visits, reviewed the application with the applicant (DSWCD), and discussed the proposal with Oregon Department of Fish and Wildlife (ODFW) and United States Fish and Wildlife Service (USFWS) staff. NMFS concluded Oregon Coast (OC) coho salmon (*Oncorhynchus kisutch*) juveniles may occur within the project area during the in-water work window, and therefore, implementation of this project is “likely to adversely affect” (LAA) OC coho salmon or their designated critical habitat.

In Oregon coastal streams north of Cape Blanco, including Umpqua River basin drainages such as the South Umpqua River, NMFS listed OC coho salmon under the ESA as threatened on August 10, 1998 (63 FR 42587), and designated critical habitat for this species on February 16, 2000 (65 FR 7764). Protective regulations for OC coho salmon were issued by NMFS under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). This consultation is undertaken under section 7(a)(2) of the ESA, and its implementing regulations, 50 CFR Part 402.

NMFS prepared this biological opinion (Opinion) to address affects of the proposed project on this species. The objective of this Opinion is to determine whether the subject action is likely to jeopardize the continued existence of the above listed species, or destroy or adversely modify critical habitat.

1.2 Proposed Action

The DSWCD proposes to construct five rock barbs along the South Umpqua River bank on the Jack Joyce property to prevent continuing erosion of the bank. The rock barb construction will include the excavation of approximately 1965 cubic yards (cy), with 350 cy occurring below the ordinary high waterline. The project area incorporates approximately 600 feet of bankline and includes excavation of the stream substrate to key the barbs into the substrate. Recontouring the streambank and the planting of trees and willows are part of the proposed action. The seeding plan presented on “sheet 5” of the application describes using fertilizer (16-16-16) applied at a rate of 32 pounds per acre on the streambank slope.

The applicant proposes to conduct the work during the low flow, in-water work dates of July 1 through August 31. The project is expected to be completed in one week, with an average of two hours per day of in-water work. Most of the work will be conducted from the streambank or

from the top of the barbs. All areas disturbed by construction will be seeded with grasses. All removed materials will be disposed of in an upland site away from the river.

1.3 Biological Information and Critical Habitat

Although limited data are available to assess population numbers or trends, NMFS believes that all OC coho salmon stocks comprising the OC coho salmon Evolutionarily Significant Unit (ESU) are depressed relative to past abundance. The OC coho salmon ESU is identified as all naturally-spawned populations of coho salmon in coastal streams south of the Columbia River and north of Cape Blanco (60 FR 38011, July 25, 1995). Biological information for OC coho salmon can be found in species status assessments by NMFS (Weitkamp et al. 1995) and by ODFW (Nickelson et al. 1992).

Abundance of wild OC coho salmon spawners in Oregon coastal streams declined from the period 1965 to 1975, and have fluctuated at a low level since then (Nickelson et al. 1992). Spawning escapements for this ESU may be less than 5 percent of that available in the early 1900s. Contemporary production of OC coho salmon may be less than 10 percent of the historic production (Nickelson et al. 1992). Average spawner abundance has been relatively constant since the late 1970s, but pre-harvest abundance has declined. Average recruits-per-spawner may also be declining. The OC coho salmon ESU, although not at immediate danger of extinction, may become endangered in the future, if present trends continue (Weitkamp et al. 1995).

The project is located near river mile (RM) 53.4 of the South Umpqua River. OC coho salmon enter the Umpqua River system from September through February, and migrate into upriver tributaries. Spawning typically occurs from late November through early February, depending on the location within the basin. For this area, OC coho salmon are typically observed spawning near the end of November through early January. In years of drought and low water conditions, OC coho salmon may spawn in the South Umpqua River due to inaccessible tributaries. Smolt migration extends from early April through July, but the peak is typically mid-April through mid-May. This is usually dependent on water temperatures (Kruzic 1998). Juvenile coho salmon will spend one year in freshwater prior to smolting. These juveniles are typically seeking thermal refugia and cover in smaller tributary streams, but at times are forced into the larger rivers, such as the South Umpqua, due to declining water discharge in August and September. As the tributaries lose water flow, the juveniles may be forced to enter the South Umpqua and inhabit areas like the project site. Some studies have observed downstream dispersal movement soon after emergence (Bradford and Taylor 1997). Kruzic (1998) and Roper (1995) observed juvenile OC coho salmon leaving the tributaries and entering the mainstem of the South Umpqua River in their studies of the upper South Umpqua basin.

The action area is located within the South Umpqua River, which has been designated as OC coho salmon critical habitat (65 FR 7764). Freshwater critical habitat includes all waterways, substrates, and adjacent riparian areas – areas adjacent to a stream that provides the following functions: (1) Shade; (2) sediment; (3) nutrient or chemical regulation; (4) streambank stability;

and (5) input of large woody debris (LWD) or organic matter – below longstanding, natural impassable barriers (i.e. natural waterfalls in existence for at least several hundred years) and several dams that block access to former OC coho salmon habitat. The project is located along the banks and substrate of the South Umpqua River, which provides spawning habitat for fall-run OC chinook salmon (*O. tshawytscha*), potential spawning for OC coho salmon, rearing habitat for OC chinook salmon and OC coho salmon juveniles, and a migration corridor for adults and smolts of both species.

1.4 Evaluating Proposed Action

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA as defined by 50 CFR 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of: (1) Defining the biological requirements of the listed species, and (2) evaluating the relevance of the environmental baseline to the species' current status. Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action; (2) the environmental baseline; and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmon's life stages which occur beyond the action area. If NMFS finds that the action is likely to jeopardize the continued existence of the listed species, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' critical habitat. NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. NMFS identifies those effects of the action that impair the function of any essential feature of critical habitat. NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will adversely modify critical habitat, it must identify any reasonable and prudent measures available. For the proposed action, NMFS' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential biological elements necessary for juvenile and adult migration, spawning, and rearing of the listed and proposed species under the existing environmental baseline.

1.4.1 Biological Requirements

The first step in the methods NMFS uses for applying the ESA to listed salmon is to define the biological requirements of the species most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution

and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list OC coho salmon for ESA protection and also considers new data available that are relevant to the determination (Weitkamp et al. 1995).

The relevant biological requirements are those necessary for OC coho salmon to survive and recover to naturally-reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful spawning, rearing and migration. The current status of the OC coho salmon, based upon their risk of extinction, has not significantly improved since the species was listed and, in some cases, their status may have worsened.

1.4.2 Environmental Baseline

Regulations implementing section 7 of the Act (CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. The environmental baseline also includes the anticipated impacts of all proposed Federal projects in the action area that have undergone section 7 consultation, and the impacts of State and private actions that are contemporaneous with the consultation in progress.

The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). Direct effects occur at the project site and may extend upstream or downstream based on the potential for disturbance, impairing fish passage, hydraulics, sediment and pollutant discharge, and the extent of riparian and instream habitat modifications. Indirect effects may occur throughout the watershed where actions lead to additional activities or affect ecological functions contributing to stream degradation. For this consultation, the action area includes the affected streambed, streambank, adjacent riparian zone, and aquatic areas of the South Umpqua River from 200 feet upstream of the upper barb location to 2,500 feet downstream of the last barb.

This reach of the South Umpqua River is currently listed on the Oregon State's list of water quality limited streams for temperature, aquatic weeds or algae, pH, bacteria, biological criteria, and dissolved oxygen (ODEQ 2001). The current baseline conditions are degraded and considered "*not properly functioning*" for most indicators of the Matrix of Pathways and Indicators (NMFS 1996). Site specific surveys have not been conducted; however, site visits confirm that the ODEQ parameters of concern are very likely all appropriate for this site. Within the immediate project area, riparian vegetation is dominated by Himalayan blackberry bushes and grass species, while upstream are many bigleaf maple trees. The substrate and streambank is dominated by cobbles and finer materials.

1.5 Analysis of Effects

1.5.1 Effects of Proposed Action

Direct harm may occur to OC coho salmon juveniles due to project in-water activities. Using mechanized machinery in the water has, at the minimum, the potential for disturbing juvenile OC coho salmon and causing displacement of these fish from the immediate work area. Additional risk is also possible due to impingement of individual fish and exposure to toxic substances. Excavation of the stream channel is expected to result in increases in turbidity that may also result in the displacement of individuals due to the high concentration of suspended sediments. Disturbance and harassment of individual juvenile OC coho salmon due to heavy equipment is expected to be limited to within the project site and 200 feet upstream and downstream of the site. Any juveniles outside of this described area are not expected to be affected by the equipment operation. Downstream effects of turbidity and hazardous materials could be expected to extend downstream 2,500 feet. Beyond this distance, turbidity levels are expected to be negligible. Hazardous material spills require immediate control in order to limit the extent of impacts. This problem must be addressed through proactive practices, such as sorbent booms and other control measures available during construction.

Indirect effects are expected to persist over the long term due to habitat alteration. The essential features potentially affected by this project are substrate, water quality (turbidity, hazardous substances), cover/shelter, food, and space. The proposed action includes excavating the stream substrate and placing 36-inch boulders within a “bank barb” configuration. This excavation will have a localized effect on macroinvertebrates (food) and channel substrate (substrate, cover/shelter, space). Cobbles are the dominant substrate material throughout the upstream half of the project site. For the area within the barb “footprint,” the substrate will be replaced with 36-inch boulders. Available habitat area associated with the interstitial spaces of the gravel and cobbles will be reduced due to this change in substrate size. Hynes (1970) described the controlling factors of macroinvertebrate populations in running waters. Substrate size is an important component related to the spaces created between particles. If substrate is too small or too large, space may be reduced, therefore reducing “living area”. Juvenile salmonids will also utilize this interstitial space for hiding cover. In the project area, interstitial space and water depth are the only cover components. In addition to this reduced macroinvertebrate and juvenile salmonid habitat, a reduction in potential spawning habitat will also occur. The majority of the area is not suitable spawning habitat, but some suitable habitat may be eliminated. Typically, OC coho salmon utilize tributaries of these larger river systems for spawning, but exceptions are seen during drought years when access to tributaries is reduced and the fish are forced to spawn in available areas. Spawning substrate is only a minor component of this project area.

Streambank modification, such as this bank barb construction, is considered a degradation of available critical habitat. Although the intent of the project is to reduce bank erosion, the action does reduce available spawning (to a minor degree), rearing, and food production habitat. Each bank barb is identified as approximately 50 feet long and 12 feet wide. This is a loss of 600

square feet of desirable substrate per barb (approximately 3000 square feet for the combined five barbs). The letter from the COE (July 30, 2001) identifies an area 50-feet by 20-feet is impacted with the proposal, but the design plans represent an impacted area estimated as above. No mitigation measures are proposed to offset this habitat loss. Bioengineered bank protection provides a compromise between the desire to prevent bank erosion and fish habitat benefits. Although the applicant proposes willow plantings at the bank toe, these willows will have limited success and benefits until they become well established. Recent assessments of bank barb structures have also identified the potential for upstream and downstream bank erosion on the near bank due to re-circulation eddies (Rosgen 2001). Without the proper spacing and bioengineering in these locations, erosion rates may actually increase.

Due to the loss of interstitial space and surface area, NMFS considers incorporation of large rootwads into project designs as an action that will provide some compensation for habitat loss. These rootwads should be incorporated into the barb construction, which is a common design of the Natural Resource Conservation Service (Castro personal communication). By imbedding the tree boles into the barb and positioning the rootwad facing out into the channel, some benefits will be recovered for macroinvertebrate production and hiding cover for juvenile fish. These rootwads are typically placed on the downstream side of the barb (NRCS 2001).

Hazardous materials, fertilizers, and post-project sediment erosion are additional potential concerns with this project. Hazardous materials from fuel spills and equipment failure are a concern. Operation of back-hoes and excavators requires the use of fuel, hydraulic fluid and lubricants, which, if spilled into the bed or channel of a water body or into the adjacent riparian zone of a water body during project construction, could injure or kill aquatic organisms. Petroleum-based contaminants (such as fuel, oil, and some hydraulic fluids) contain polycyclic aromatic hydrocarbons (PAHs) which can cause acute toxicity to salmonids at high levels of exposure and can also cause chronic lethal as well as acute and chronic sublethal effects to aquatic organisms (Neff 1985). Fertilizers applied near the stream can be washed into the stream and add to the eutrophication of the South Umpqua River's ecosystem. Post-project erosion can result in a chronic sediment source. Disturbance of the already erosive bank may increase erosion without proper vegetation recovery and monitoring.

1.5.2 Effects on Critical Habitat

NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features of the area for OC coho salmon are: (1) Substrate, (2) water quality, (3) water quantity, (4) water temperature, (5) water velocity, (6) cover/shelter, (7) food (juvenile only), (8) riparian vegetation, (9) space, and (10) safe passage conditions (50 CFR 226). Effects to critical habitat from these categories are included in the effects description expressed above in *Effects of Proposed Action*.

1.5.3 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as “those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation.” Other activities within the watershed have the potential to impact fish and habitat within the action area. Future Federal actions, including the ongoing operation of land management activities and highway construction that are being (or have been) reviewed through separate section 7 consultation processes.

Non-federal activities within the action area are expected to slightly increase in the near future. Although there is a projected 34 percent increase in human population over the next 25 years in Oregon (ODAS 1999), the area upstream of this site is not expected to follow this rapid population growth. Surrounding uplands are primarily agricultural land, containing several small communities, rural homes, small wood lot owners, and industrial timber land. Thus, NMFS assumes that future private and State actions will continue within the action area, at slightly increased levels due to population growth.

1.6 Conclusion

After reviewing the current status of OC coho salmon, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, NMFS has determined that the Joyce Streambank Protection Project, as proposed, is not likely to jeopardize the continued existence of the OC coho salmon, and is not likely to destroy or adversely modify designated critical habitat for the ESU. This finding is based, in part, on incorporation of the project design criteria into the proposed project design, (i.e., ODFW in-water work window, site revegetation, limited in-water work duration, and equipment working primarily from the bank and on top of the barbs), but also on the following considerations: (1) Placement of the most upstream barb first will deflect flow towards the opposite bank and reduce turbidity; (2) incorporation of the rootwads into the bank barbs will provide microhabitat diversity for hiding cover for juvenile OC coho salmon and macroinvertebrate production; (3) placement and maintenance of a sorbent boom downstream of the work site will minimize spread of any hazardous material spills; (4) eliminating the proposed use of fertilizer where it can wash into the stream will reduce potential cumulative effects of nutrient loading; (5) revegetation of the banks will result in the long-term recovery of riparian resources; and (6) the proposed action will not appreciably reduce the functioning of the ESU’s already impaired habitats, or retard the long-term progress of impaired habitats toward properly functioning condition (PFC).

1.7 Reinitiation of Consultation

This concludes formal consultation on this action in accordance with 50 CFR 402.14(b)(1). Reinitiation of consultation is required: (1) If the amount or extent of incidental take is exceeded; (2) the action is modified in a way that causes an effect on the listed species or critical habitat that was not previously considered in the biological assessment and this Opinion; (3) new

information or project monitoring reveals effects of the action that may affect the listed species or critical habitat in a way not previously considered; or (4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

2. INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered species and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Harm in the definition of “take” in the Act means an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, and sheltering (50 CFR 222.102). Harass is defined by NMFS as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the term and conditions of this Incidental Take Statement.

2.1 Amount or Extent of Take

NMFS anticipates that the proposed action covered by this Opinion has more than a negligible likelihood of incidental take of juvenile OC coho salmon resulting from the long-term removal of potential natural rearing habitat due to the use of riprap, disturbance and displacement from the use of equipment in the stream channel, and temporary displacement of individuals due to elevated turbidity levels. Effects of actions such as these are largely unquantifiable in the short term. The effects of these activities on population levels are also largely unquantifiable and not expected to be measurable in the long term. Therefore, even though NMFS expects some low level of non-lethal incidental take to occur due to the action covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as this, NMFS designates the expected level of take in terms of the extent of take allowed. Therefore, NMFS limits the area of allowable incidental take during construction to the distance from the action site downstream for a distance of 2,500 feet and upstream of the site for a distance of 200 feet. Incidental take occurring beyond these areas is not authorized by this consultation.

2.2 Reasonable and Prudent Measures

NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the above species. Minimizing the amount and extent of take is essential to avoid jeopardy to the listed species.

1. Minimize the likelihood of incidental take associated with impacts to riparian and instream habitats by avoiding or replacing lost riparian and instream functions.
2. Minimize the likelihood of incidental take from construction activities in or near watercourses by implementing pollution and erosion control measures.
3. Minimize the likelihood of incidental take associated with instream work by restricting work to recommended in-water work periods.
4. Monitor the effectiveness of the proposed conservation measures in minimizing incidental take and report to NMFS.

2.3 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the COE must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To implement Reasonable and Prudent Measure #1 (instream habitat function) the COE shall ensure that:
 - a. Rootwads are incorporated into the barb construction. Technical designs such as the NRCS designs for rootwad placement in bank deflectors should be used (NRCS 2001: <http://www.wa.nrcs.usda.gov/Eng/DesignAids/Dwgs/Standard/BioEng>).
 - b. Bank barbs should not exceed 25 percent of the active channel width (as per USFWS recommendation). The identified bank barb length is 50 feet, but the applicant did not provide the active channel width and NMFS is not aware of this width. If 50 feet is longer than 25 percent of the active channel width, then the barb length should be reduced accordingly.
 - c. Flag boundaries of the clearing limits associated with site access and construction to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.
 - d. Adoption of all project proposed design criteria are integral to this project's implementation. These include 5:1 slope of the barb towards the channel substrate, 150 feet or less between barbs, and barbs angled upstream from bank 45 degrees or less.

- e. Complete site restoration and clean up, including protection of bare earth by seeding, planting and mulching in the following manner:
 - i. Plant disturbed areas with native vegetation specific to the project vicinity or the region of the state where the project is found, using a diverse assemblage of woody and herbaceous species.
 - ii. Do not apply herbicide as part of this permitted action.
 - iii. Achieve an 80 percent survival success of planting after three years.
 - iv. If success standard has not been achieved after 3 years, prepare an alternative plan to address temporal loss of function.
 - v. Monitor establishment of planting until 80 percent survival has been achieved.

- 2. To implement Reasonable and Prudent Measure #2 (construction) the COE shall ensure that a Pollution and Erosion Control Plan (PECP) is developed for the project to prevent point-source pollution related to construction operations containing all of the pertinent elements listed below, and meeting requirements of all applicable laws and regulations.
 - a. Describe methods that will be used to prevent erosion and sedimentation associated with access roads, construction sites, equipment and material storage sites, fueling operations and staging areas. Fuel, maintain and store heavy equipment as follows:
 - i. Place vehicle staging, maintenance, refueling, and fuel storage areas at least 150 feet horizontal distance from any stream.
 - ii. Inspect all vehicles operated within 150 feet of any stream or water body daily for fluid leaks before leaving the vehicle staging area. Repair any leaks detected before the vehicle resumes operation.
 - iii. When not in use, store vehicles in the vehicle staging area.
 - b. Describe hazardous products or materials that will be used, including procedures for inventory, storage, handling, and monitoring.
 - c. Develop a spill containment and control plan with these components: Notification procedures; specific clean up and disposal instructions for different products; quick response containment and clean up measures; proposed methods for disposal of spilled materials; and employee training for spill containment.
 - d. Install a sorbant boom downstream of the project site prior to project implementation and maintain the boom throughout the in-water work phase.
 - e. Stockpile a supply of erosion control materials (e.g., silt fence and straw bales) on-site to respond to sediment emergencies. Use sterile straw or hay bales when available to prevent introduction of weeds.
 - f. Install all temporary erosion controls (e.g., straw bales, silt fences) downslope of project activities within the riparian area. Keep them in-place and maintained throughout the contract period, and until permanent erosion control measures are effective.
 - g. Where fertilizer can wash into the river, fertilizer should not be used within 50 feet of the river.

3. To implement Reasonable and Prudent Measure #3 (instream work) the COE shall ensure that:
 - a. All in-water work will be completed within the ODFW approved in-water work period (July 1 - August 31). Extensions of the in-water work period must be approved in advance by NMFS in writing.
 - b. Project design criteria requiring limited daily in-water work will be followed in order to minimize turbidity.
 - c. Placement of the most upstream barb will occur first in order to provide stream flow deflection for the remaining project activities.
 - d.
4. To implement Reasonable and Prudent Measure #4 (monitoring), the COE shall ensure that:
 - a. Comprehensive monitoring will occur and a post project report prepared to ensure that these terms and conditions meet their objective of minimizing the likelihood of adverse effects to OC coho salmon and their designated critical habitat.
 - i. Submit a report to NMFS within 120 days of completing the project. Describe the COE's success meeting conservation recommendations above. Include the following information:
 - (1) Project identification.
 - (a) Project name.
 - (b) Starting and ending dates of work completed for this project.
 - (c) the COE contact person.
 - (2) A summary of all pollution and erosion control inspection reports, including descriptions of any failures experienced with erosion control measures, efforts made to correct them and a description of any accidental spills of hazardous materials.
 - (3) Documentation of the following conditions:
 - (a) Finished grade slopes and elevations.
 - (b) Log and rock structure elevations, orientation, and anchoring, if any.
 - (c) Planting composition and density.
 - (d) A plan to inspect and, if necessary, replace failed plantings and structures as required in 1(e).
 - (4) A narrative assessment of the effects of the project and compensatory mitigation on natural stream function.
 - (5) Photographic documentation of environmental conditions at the project site before, during and after project completion.
 - (6) Photographs will include general project location views and close-ups showing details of the project area and project, including pre and post construction.

- (7) Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.
 - (8) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.
- b. Submit monitoring reports to:
- National Marine Fisheries Service
Oregon Habitat Branch, Habitat Conservation Division
Attn: OSB2001-0173-FEC
525 NE Oregon Street, Suite 500
Portland, Oregon 97232-2778
- c. If a dead, injured, or sick endangered or threatened species specimen is located, initial notification must be made to the National Marine Fisheries Service Law Enforcement Office, at the Roseburg Field Office, 2900 NW Stewart Parkway, Roseburg, Oregon 97470, at 541.957.3388. Care should be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered and threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not disturbed.

3. MAGNUSON-STEVENSON ACT

3.1 Magnuson-Stevens Fishery Conservation and Management Act

The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-297), requires the inclusion of essential fish habitat (EFH) descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NMFS on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of essential fish habitat: Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and

associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50CFR600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NMFS shall provide conservation recommendations for any Federal or State activity that may adversely affect EFH;
- Federal agencies shall within 30 days after receiving conservation recommendations from NMFS provide a detailed response in writing to NMFS regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NMFS, the Federal agency shall explain its reasons for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NMFS is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

3.2 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Pacific salmon: chinook salmon, coho salmon, and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (i.e., natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based on this information.

3.3 Proposed Action

The proposed action is detailed above in Section 1.2 of this document. The action area includes a reach of the South Umpqua River near RM 53.4. This area has been designated as EFH for various life stages of chinook salmon and OC coho salmon.

3.4 Effects of Proposed Action

As described in detail in Section 1.5 of this document, the proposed activity may result in detrimental short- and long-term adverse effects to a variety of habitat parameters. These include impacts to water quality (turbidity and chemical contamination), stream hydraulics, and displacement of rearing juveniles.

Effect #1: Turbidity - Excavation of a toe trench in the wetted channel will result in short-term releases of sediment. An increase in turbidity can impact fish and filter-feeding macro-invertebrates downstream of the work site. The potential exists that long-term and chronic erosion problems could be accelerated by placing the barbs.

Effect #2: Chemical Contamination - As with all construction activities, accidental release of fuel, oil, and other contaminants may occur.

Effect #3: Stream Hydraulics - Predicting stream channel response to bank barbs is an on-going monitoring process. Each stream site presents unique flow and channel response dynamics. Recent monitoring of rock barbs has resulted in evidence of accelerated near-bank erosion, therefore causing additional chronic streambank sediment contribution (Rosgen 2001).

Effect #4: Habitat Loss - Project caused alteration of the present habitat conditions will result in reduced juvenile salmonid hiding cover, loss of interstitial space leading to reduced macro-invertebrate production, and loss of potential spawning habitat (fall-run chinook salmon and OC coho salmon).

3.5 Conclusion

NMFS believes that the proposed action may adversely affect the EFH for chinook salmon and OC coho salmon.

3.6 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the Magnuson-Stevens Act, NMFS is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The conservation measures proposed for the project by the DSWCD and all of the reasonable and prudent measures and terms and conditions contained in Sections 2.2 and 2.3 are applicable to salmon EFH. Therefore, NMFS incorporates each of those measures here as EFH conservation recommendations.

3.7 Statutory Response Requirement

Please note that the Magnuson-Stevens Act (section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NMFS after receiving EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the adverse impacts of the activity on EFH. If the response is inconsistent with a conservation recommendation from NMFS, the agency must explain its reasons for not following the recommendation.

3.8 Supplemental Consultation

the COE must reinitiate EFH consultation with NMFS if the action is substantially revised or new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR 600.920).

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