



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:
OSB2001-0247-FEC

January 23, 2002

Mr. Fred P. Patron
Senior Transportation Planning Engineer
Federal Highway Administration, Oregon Division
530 Center Street NE
Salem, OR 97301

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Act
Essential Fish Habitat Consultation, Neskowin Creek (Cascade Trace Road) Bridge
#18984, Tillamook County, Oregon

Dear Mr. Patron:

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 Neskowin Creek (Cascade Trace Road) Bridge #18984, Tillamook 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 designated 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. This Opinion also serves as consultation on essential fish habitat pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and its implementing regulations (50 CFR Part 600).

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 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 as a threatened species. Although NMFS promptly resumed this consultation, the temporary suspension due to changes in the legal status of OC coho added significantly to the time necessary for its completion. We apologize for any inconvenience caused by this delay.



Questions regarding this letter should be directed to Art Martin of my staff in the Oregon Habitat Branch at 503.231.6848.

Sincerely,

Michael R. Crouse
f.i

Robert Lohn
Regional Administrator

cc:

Rose Owens, ODOT
Randy Reeve, ODFW
Ray Bosch, USFWS
Ron Jee, Otak

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

BIOLOGICAL OPINION

Neskowin Creek (Cascade Trace Road) Bridge #18984
Tillamook County, Oregon

Agency: Federal Highway Administration

Consultation Conducted by: National Marine Fisheries Service,
Northwest Region

Date Issued: January 23, 2002

Issued by: 

D. Robert Lohn
Regional Administrator

Refer to: OSB2001-0247-FEC

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1. ENDANGERED SPECIES ACT

1.1 Background

On September 13, 2001, the National Marine Fisheries Service (NMFS) received a letter from the Federal Highway Administration (FHWA) requesting formal consultation pursuant to the Endangered Species Act (ESA) and essential fish habitat consultation pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSA) for funding of Tillamook County to implement the subject action. The Oregon Department of Transportation (ODOT) is the designated non-federal representative of the FHWA. The purpose of the proposed action is to replace the Neskowin Creek Bridge, State Bridge # 18984 (Cascade Trace Road) with a new structure. Neskowin Creek Bridge is a Tillamook County structure and crosses Neskowin Creek approximately 7.2 river kilometers (4.5 river miles) upstream of its confluence with the Pacific Ocean. This consultation is undertaken pursuant to section 7(a)(2) of the ESA and its implementing regulations (50 CFR Part 402), and pursuant to section 305(b) of the MSA and its implementing regulations (50 CFR Part 600).

This Opinion considers the potential effects of the proposed action on Oregon Coast (OC) coho salmon (*Oncorhynchus kisutch*) which occur in the proposed project area. OC coho salmon were listed as threatened under the ESA on August 10, 1998 (63 FR 42587), and critical habitat was designated on February 16, 2000 (65 FR 7764). Protective regulations for this species were issued by NMFS on July 10, 2000 (65 FR 42422).

1.2 Proposed Action

The proposed action is replacement of the Neskowin Creek (Cascade Trace Road) Bridge #18984. The FHWA proposes to remove the existing structure, excavate 28 cubic yards (cy) of bridge fill material, and replace it with a new structure including 10 cy of scour protection fill material below the ordinary high water elevation (OHW; also known as bankfull elevation¹) on the north bank of Neskowin Creek. The 10 cy of fill will consist of class 25 riprap fill material.

The existing structure consists of a 16.2-m (53.2-ft) long and 2.9-m (9.5-ft) wide single span railroad flatcar supported by timber abutments and rock fill material. The existing bridge will be removed and replaced with four precast, prestressed (PCPS) concrete slabs resulting in a 20-m (65.6-ft) long and 4.9-m (16.1-ft) wide bridge deck. The proposed bridge deck will be supported by a single row of pile and a cast-in-place concrete pile cap on the north bank of Neskowin Creek. The south bridge abutment will consist of a cast-in-place cap directly on the existing bed rock. Although both current bridge abutments are above the OHW, the existing fill associated with the northern bridge abutment will be removed and the bridge span will be increased to provide a net decrease in fill below the OHW of approximately 18 cy. Fill removal, site

¹ "Bankfull elevation" means the bank height inundated by a 2-year average recurrence interval and may be estimated by morphological features such as average bank height, scour lines and vegetation limits.

regrading and placement of 10 cy of scour protection fill will occur below the OHW and is considered in-water work. All in-water work activities will occur during the proposed in-water work timing window of July 1 through September 15.

The Neskowin Creek (Cascade Trace Road) Bridge #18984 biological assessment (BA) includes a set of best management practices (BMPs) designed to minimize adverse effects on salmon and their habitats. These BMPs are described on pages 14-18 of the BA for this project, dated August 9, 2001. Specific BMPs for in-water work, bank work, clearing and grubbing, bridge replacement, erosion control, hazardous materials, and site-specific conservation measures are included. The NMFS regard these BMPs as integral components of the project and considers them to be part of the proposed action.

1.3 Biological Information and Critical Habitat

Although limited data are available to assess population numbers or trends, NMFS believes that all coho salmon stocks comprising the OC coho salmon ESU are depressed compared with past abundance. The status and relevant biological information concerning OC coho salmon are well described in the proposed and final rules from the Federal Register (July 25, 1995, 60 FR 38011 and May 6, 1997, 62 FR 24588, respectively), Weitkamp *et al.* (1995), and Jacobs *et al.* (2000).

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). Spawning escapements for this ESU may be at less than 5% of abundance from that in the early 1900s and recent production of coho salmon may be less than 10% of the historic production (Nickelson *et al.* 1992). Average recruits-per-spawner may also be declining. Long-term trends of total pre-harvest abundance and spawner escapement show significant declining trends over the last 49 years (1950-1999). The level of both spawner escapement and total pre-harvest abundance observed in 1997 and 1998 was the lowest on record for OC coho salmon (Jacobs *et al.* 2000).

Timing of adult coho salmon river entry is largely influenced by river flow. Coho salmon normally wait for freshets before entering rivers. If habitat conditions (flow, temperature, etc.) in the stream are unsuitable, adults will hold near the streams entrance waiting, for several weeks if necessary, for river conditions to change. As river conditions improve, coho may take short excursions into the stream and return to salt water before commencing upstream migration (Sandercock 1991).

Usually, river entry for the OC coho salmon ESU occurs from mid-September to mid-February with peak entry occurring in October. Active upstream migration mostly occurs during daylight hours (Sandercock 1991). Spawning occurs from late October to February with most of spawning concentrated in November and December.

Juvenile coho salmon typically rear for one year in Oregon coastal streams before migrating to the ocean. Juveniles may also move downstream to upper estuarine and tidally-influenced habitats as age-0s in the spring or fall of their first year (Miller and Sadro 2000). Seaward

migration normally occurs from February through June with the highest concentration of migrants occurring in May. Coho salmon smolts are not believed to spend a great deal of time in the estuary before moving out to the ocean. However, juvenile coho salmon are likely to be present in Oregon's larger estuaries from early May through June.

1.4 Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). The 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 and current status 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. If NMFS finds that the action is likely to jeopardize 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' designated 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 element of critical habitat. If NMFS concludes that the action will destroy or 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 elements necessary for migration, spawning, and rearing of OC coho salmon under the existing environmental baseline.

1.4.1 Biological Requirements

The first step in the methods NMFS uses for applying the ESA section 7(a)(2) to listed salmon is to define the species' biological requirements that are 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 is 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.

1.4.2 Environmental Baseline

The environmental baseline is an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species or its habitat and ecosystem within the action area. 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 impairing fish passage, hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect effects may occur throughout the watershed where actions described in this opinion lead to additional activities or affect ecological functions contributing to stream degradation. For this consultation, the action area includes Neskowin Creek from the upstream limit of the proposed action, downstream to its confluence with the Pacific Ocean.

Neskowin Creek originates in the foot hills west of Neskowin and drains an area of 4,568 acres. The stream runs about 10 miles through United States Forest Service (USFS) land, private residential properties, private forest land, and agricultural land before entering the Pacific Ocean. Through the project reach, Neskowin Creek provides moderate quality salmonid habitat with limited side channel, beaver pond, and large woody debris habitat types. The channel width to depth ratio averages 30 with adequate floodplain connectivity (RNC 1998).

The bulk of production for the OC coho salmon ESU is skewed to its southern portion where the coastal lake systems (e.g., Tenmile, Tahkenitch, and Siltcoos Basins) and the Coos and Coquille Rivers are more productive (Jacobs *et al.* 2000, Weitkamp *et al.* 1995). The proposed action area is in the northern half of the ESU where production is more depressed and the habitat is under-seeded. OC coho spawn in Neskowin Creek and tributaries. Juveniles use this stream and its tributaries for rearing and winter refuge during high flows.

1.5 Analysis of Effects

1.5.1 Effects of the Proposed Action

Creeks and rivers are dynamic systems that naturally alter their courses in response to many physical processes. Roadways and other structures constructed along waterways are subject to

flooding and undercutting as a result of these natural changes in the stream course. Structural hardening of embankments is the traditional means of protecting these structures along waterways. Impacts to waterways from installation of hardened embankments are simplification of stream channels, alteration of hydraulic processes, and prevention of natural channel adjustments (Spence *et al.* 1996). Moreover, embankment hardening may shift the erosion point either upstream or downstream of the project site and contribute to stream velocity acceleration. As amplified erosive forces attack different locations and landowners respond with more bank hardening, the river eventually attains a continuous fixed alignment lacking habitat complexity (USACE 1977).

Fish habitats are enhanced by the diversity of habitats at the land-water interface and adjacent bank (USACE 1977). Streamside vegetation provides shade that reduces water temperature and stabilizes stream banks. Overhanging branches provide cover from predators. Insects and other invertebrates that fall from overhanging branches may be preyed upon by fish, or provide food sources for other prey organisms. Immersed vegetation, logs, and root wads provide points of attachment for aquatic prey organisms, shelter from swift currents during high flows, retain bed load sediment, create pools, and reduce flow velocity.

The most desirable method of bank protection is to retain or restore vegetation. However, vegetation alone can seldom stabilize banks steeper than 3:1 (horizontal:vertical) or areas of high velocity (USACE 1977). Native vegetation viability is often limited under and around bridges due primarily to low light conditions. Although they are biologically less desirable, fixed structures provide the most reliable means of bank stability.

The aquatic habitat elements that can be affected by the proposed bridge replacement include water quality (sediment and chemical contamination) and stream hydraulics. Juvenile coho and chinook salmon rearing in the Neskowin Creek reach may be directly and indirectly affected by proposed project actions.

Sediment. Excavation of bank material in the wetted channel will temporarily increase releases of sediment. An increase in turbidity from suspension of fine sediments can adversely affect fish and filter-feeding macro-invertebrates downstream of the work site. At moderate levels, turbidity has the potential to reduce primary and secondary productivity; at higher levels, turbidity may interfere with feeding and may injure and even kill both juvenile and adult fish (Spence *et al.* 1996, Berg and Northcote 1985).

Transportation of sediments to the river is also possible. Upland excavation will expose and dislodge soils, increasing erosion and stream turbidity during rainfall.

To minimize the potential for increased turbidity and disturbance of fish, work will occur during the ODFW recommended in-water work window (July 1 to September 15) or as approved by NMFS and ODFW biologists. During this window, creek flows are typically low, fish presence is reduced, and rainfall is minimal. Low flows will allow the work to occur in the dry, thereby reducing turbidity and disturbance of fish. During this period, rearing juveniles likely are

present, but adult spawning and egg incubation would not be occurring. The precipitation probability increases greatly after September 15, as does the potential presence of returning adult coho salmon.

Chemical Contamination. As with all construction activities, accidental release of fuel, oil, and other contaminants may occur. Operation of the backhoes, excavators, and other equipment requires the use of fuel, lubricants, etc., which, if spilled into the channel of a water body or into the adjacent riparian zone, can injure or kill aquatic organisms. Petroleum-based contaminants (such as fuel, oil, and some hydraulic fluids) contain poly-cyclic aromatic hydrocarbons (PAHs), which can be acutely toxic to salmonids at high levels of exposure and can also cause chronic lethal and acute and chronic sublethal effects to aquatic organisms (Neff 1985). Similarly, exposure to herbicides can have lethal and sublethal effects on salmonids, aquatic invertebrates, aquatic vegetation, and target and non-target riparian vegetation (Spence *et al.* 1996).

To minimize the potential for chemical contamination and disturbance of fish, work will occur during the ODFW recommended in-water work window (July 1 to September 15) or as approved by NMFS and ODFW biologists. During this window, creek flows are typically low, fish presence is reduced, and rainfall is minimal. Low flows will allow the work to occur in the dry, thereby reducing potential chemical contaminants from entering the actively flowing water and direct impacts to fish. Herbicide use is not proposed as part of this action.

Stream Hydraulics. The replacement of 28 cy of existing fill with 10 cy of scour protection fill and the lengthening the bridge span will increase the potential active channel width and increase the flood capacity under the structure. The hydraulic features of the new bridge will increase the potential for natural passage of bed load and woody debris. Long-term improvement of stream hydraulics at the bridge crossing will occur as the result of the proposed action. Less constricted stream hydraulics will allow for the natural formation of complex fish habitats potentially increasing the available quantity and quality of habitat for fish breeding, feeding and shelter.

1.5.2 Effects on Critical Habitat

The NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features for designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. Critical habitat for OC coho salmon consists of all waterways below naturally impassable barriers including the project area. The adjacent riparian zone is also included in the designation. This zone is defined as the area that provides the following functions: Shade, sediment, nutrient/chemical regulation, streambank stability, and input of large woody debris/organic matter.

Short-term impacts resulting from the proposed action could occur from turbidity and debris contribution to the waterway during construction activities and storms during construction.

These effects would be largely avoided by project timing (i.e., dry season) and work area isolation, if necessary, as described above in *Effects of Proposed Action*.

Long-term beneficial effects resulting from improved channel cross-sectional area under the structure and stream hydraulics will result in permanent improvements over baseline conditions.

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." Future federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes. Therefore, these actions are not considered cumulative to the proposed action.

The NMFS is not aware of any specific future non-federal activities within the action area that would cause greater impacts to listed species than presently occurs. The NMFS assumes that future private and state actions will continue at similar intensities as in recent years.

1.6 Conclusion

The NMFS has determined that, based on the available information, the proposed action is not likely to jeopardize the continued existence of OC coho salmon or result in the destruction or adverse modification of critical habitat. NMFS used the best available scientific and commercial data to analyze the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NMFS applied its evaluation methodology (NMFS 1996) to the proposed action and found that it could cause slight degradation of anadromous salmonid habitat due to increases in sedimentation and turbidity. These effects will be short-term and minor in scale (i.e., confined to lower Neskowin Creek). Furthermore, NMFS expects that construction noise and work isolation activities, if necessary, could alter normal feeding and sheltering behavior of juvenile OC coho salmon should any be present in the action area during the proposed action. These effects will be temporary and NMFS does not expect them to kill or injure individual coho salmon.

Our conclusions are based on the following considerations: (1) Most of the proposed work will occur outside of Neskowin Creek (i.e., in the dry); (2) in-water work will occur during the ODFW preferred work window of July 1-September 15, which is expected to minimize the likelihood of OC coho salmon presence in the action area due to low flow conditions; and (3) any increases in sedimentation and turbidity to the lower portion of Neskowin Creek will be short-term and minor in scale and would not change or worsen existing conditions for stream substrate in the action area.

1.7 Reinitiation of Consultation

Consultation must be reinitiated if: (1) The amount or extent of taking specified in the incidental take statement is exceeded, or is expected to be exceeded, (2) new information reveals effects of the action may affect listed species or critical habitats in a way not previously considered, (3) the action is modified in a way that causes an effect on listed species that was 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). To reinitiate consultation, the FHWA must contact the Habitat Conservation Division (Oregon Habitat Branch) of NMFS.

2. INCIDENTAL TAKE STATEMENT

Section 4(d) and Section 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering (64 FR 60727; November 8, 1999). Harass is defined as actions that create the likelihood of injuring 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 take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out 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 prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement. An incidental take statement specifies the impact of any incidental taking of threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.1 Amount or Extent of the Take

The NMFS anticipates that the action covered by this Opinion is reasonably certain to result in incidental take of listed salmonids because of short-term detrimental effects from increased turbidity levels (non-lethal), and the potential for direct incidental take during in-water work (non-lethal). Effects of actions such as the one covered by this Opinion are largely unquantifiable in the short term and are not expected to be measurable as long-term effects on habitat or population levels. Therefore, even though NMFS expects some low level of 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 these, the NMFS designates the expected level of take as unquantifiable. Based on the information provided by the FHWA and other available information, NMFS anticipates that an unquantifiable amount of incidental take could occur as a

result of the action covered by this Opinion. The extent of take authorized by this take statement is limited to that caused by the proposed action within the action area.

2.2 Reasonable and Prudent Measures

The measures described below are non-discretionary. They must be implemented so that they become binding conditions in order for the exemption in section 7(a)(2) to apply. The FHWA has the continuing duty to regulate the activities covered in this incidental take statement. If the FHWA fails to require the ODOT to adhere to the terms and conditions of the incidental take statement through enforceable terms added to the document authorizing this action, or fails to retain the oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the above species. The FHWA shall:

1. Minimize the likelihood of incidental take from streambank and shoreline protection actions by directing the contractor to use an approach that maximizes ecological functions and uses the best available bioengineering technology.
2. Minimize the likelihood of incidental take from activities involving temporary access roads, use of heavy equipment, earthwork, site restoration, or that may otherwise involve in-water work or affect fish passage by directing the contractor to avoid or minimize disturbance to riparian and aquatic systems.
3. Minimize the likelihood of incidental take from in-water work activities by ensuring that the in-water work activities (fill excavation, bank regrading and scour protection placement) are conducted in the dry or are isolated from flowing water.
4. Complete a comprehensive monitoring and reporting program to ensure implementation of these conservation measures are effective at minimizing the likelihood of take from permitted activities.

2.3 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, FHWA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above for each category of activity.

1. To Implement Reasonable and Prudent Measure #1 (streambank protection), the FHWA shall ensure that:
 - a. The use of rock and riprap is avoided or minimized.

- i. Rock will be individually placed in a way that produces an irregularly contoured face to provide velocity disruption. No end dumping will be allowed.
 - b. Any instream large wood or riparian vegetation that is moved or altered during construction will stay on site or be replaced with a functional equivalent.
2. To implement Reasonable and Prudent Measure #2 (construction), the FHWA shall ensure that:
 - a. Project design. Alteration or disturbance of the stream banks and existing riparian vegetation will be minimized.
 - b. In-water work. All work within the active channel will be completed within the following in-water work period (July 1 - September 15) for the site as recommended by ODFW.² Extensions of the in-water work period must be approved by NMFS.
 - c. Pollution and erosion control plan. A Pollution and Erosion Control Plan (PECP) will be developed for the project to prevent point-source pollution related to construction operations. The PECP will contain the pertinent elements listed below and meet requirements of all applicable laws and regulations:
 - i. 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.
 - ii. A description of the hazardous products or materials that will be used, including inventory, storage, handling, and monitoring.
 - iii. A spill containment and control plan with notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures that will be available on site, proposed methods for disposal of spilled materials, and employee training for spill containment.
 - iv. Measures that will be taken to prevent construction debris from falling into any aquatic habitat. Any material that falls into a stream during construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.
 - d. Pre-construction activities. Prior to significant alteration of the action area, the following actions will be accomplished.
 - i. Boundaries of the clearing limits associated with site access and construction are flagged to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.

² Oregon Department of Fish and Wildlife, *Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources*, 12 pp (June 2000)(identifying work periods with the least impact on fish)(http://www.dfw.state.or.us/ODFWhtml/InfoCntrHbt/0600_inwtrguide.pdf).

- ii. A supply of erosion control materials (e.g., silt fence and straw bales) is on hand to respond to sediment emergencies. Sterile straw or hay bales will be used when available to prevent introduction of weeds.
- iii. All temporary erosion controls (e.g., straw bales, silt fences) are in-place and appropriately installed downslope of project activities within the riparian area. Effective erosion control measures will be in-place at all times during the contract, and will remain and be maintained until such time that permanent erosion control measures are effective.
- e. Earthwork. Earthwork, including drilling, blasting, excavation, dredging, filling and compacting, is completed in the following manner:
 - i. Boulders, rock, woody materials and other natural construction materials used for the project must be obtained from outside of the riparian area.
 - ii. Material removed during excavation will only be placed in locations where it cannot enter streams or other water bodies.
 - iii. All exposed or disturbed areas will be stabilized to prevent erosion.
 - (1) Areas of bare soil within 150 feet of waterways, wetlands or other sensitive areas will be stabilized by native seeding,³ mulching, and placement of erosion control blankets and mats, if applicable, quickly as reasonable after exposure, but within 7 days of exposure.
 - (2) All other areas will be stabilized as quickly as reasonable, but within 14 days of exposure.
 - (3) Seeding outside of the growing season will not be considered adequate for permanent stabilization.
- f. Heavy Equipment. Heavy equipment use will be fueled, maintained and stored as follows:
 - i. Vehicle staging, maintenance, refueling, and fuel storage areas will be a minimum of 150 feet horizontal distance from any stream or in an area approved by a NMFS biologist.
 - ii. All vehicles operated within 150 feet of any stream or water body will be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected will be repaired before the vehicle resumes operation.
 - iii. When not in use, vehicles will be stored in the vehicle staging area.
- g. Site restoration. Site restoration and clean-up, including protection of bare earth by seeding, planting, mulching and fertilizing, is done in the following manner:
 - i. Disturbed areas will be planted with native vegetation specific to the project vicinity or the region of the state where the project is located, and will comprise a diverse assemblage of woody and herbaceous species.
 - ii. No herbicide application will occur as part of this permitted action. Mechanical removal of undesired vegetation and root nodes is permitted.

³ By Executive Order 13112 (February 3, 1999), Federal agencies are not authorized to permit, fund or carry out actions that are likely to cause, or promote, the introduction or spread of invasive species. Therefore, only native vegetation that is indigenous to the project vicinity, or the region of the state where the project is located, shall be used.

- iii. No surface application of fertilizer will be used within 50 feet of any stream channel as part of this permitted action.
 - iv. Plantings will achieve an 80 percent survival success after three years.
 - (1) If success standard has not been achieved after 3 years, the applicant will submit an alternative plan to NMFS. The alternative plan will address temporal loss of function.
 - (2) Plant establishment monitoring will continue and plans will be submitted to the NMFS until site restoration success has been achieved.
3. To implement Reasonable and Prudent Measure #3 (in-water work area activities), the FHWA shall ensure that the in-water work activities (fill excavation, bank regrading and scour protection placement) are conducted in the dry or are isolated from flowing water.
- a. If the fish salvaging aspect of this project requires the use of seine equipment to capture fish, it must be accomplished as follows:
 - i. Before and intermittently during pumping, attempts will be made to seine and release fish from the work isolation area as is prudent to minimize risk of injury.
 - ii. Seining will be conducted by, or under the supervision of a fishery biologist experienced in such efforts. Staff working with the seining operation must have the necessary knowledge, skills, and abilities to ensure the safe handling of all ESA-listed fish.
 - iii. ESA-listed fish must be handled with extreme care and kept in water to the maximum extent possible during seining and transfer procedures. The transfer of ESA-listed fish must be conducted using a sanctuary net that holds water during transfer, whenever appropriate, to prevent the added stress of an out-of-water transfer.
 - iv. Seined fish must be released as near as possible to capture sites.
 - v. The FHWA shall ensure that the transfer of any ESA-listed fish to third parties other than NMFS personnel receives prior approval from NMFS.
 - vi. The FHWA shall ensure that any other Federal, state, and local permits and authorizations necessary for the conduct of the seining activities will be obtained prior to project seining activity.
 - vii. The FHWA must allow the NMFS or its designated representative to accompany field personnel during the seining activity, and allow such representative to inspect the seining records and facilities.
 - viii. A description of any seine and release effort will be included in a post-project report, including the name and address of the supervisory fish biologist, methods used to isolate the work area and minimize disturbances to ESA-listed species, stream conditions before and following placement and removal of barriers, the means of fish removal, the number of fish removed by species, the condition of all fish released, and any incidence of observed injury or mortality.

- b. If the fish salvaging aspect of this project requires the use of electrofishing equipment to capture fish, it must be accomplished as follows (NMFS 1998):
- i. Electrofishing may not occur near listed adults in spawning condition or near redds containing eggs.
 - ii. Equipment must be in good working condition. Operators must go through the manufacturer's preseason checks, follow all provisions, and record major maintenance work in a log.
 - iii. A crew leader having at least 100 hours of electrofishing experience in the field using similar equipment must train the crew. The crew leader's experience must be documented and available for confirmation; such documentation may be a logbook. The training must occur before an inexperienced crew begins any electrofishing; it must also be conducted in waters that do not contain listed fish.
 - iv. Measure conductivity and set voltage as follows:

(1)	<u>Conductivity (umhos/cm)</u>	<u>Voltage</u>
(2)	Less than 100	900 to 1100
(3)	100 to 300	500 to 800
(4)	Greater than 300	150 to 400
 - v. Direct current (DC) must be used at all times.
 - vi. Each session must begin with pulse width and rate set to the minimum needed to capture fish. These settings should be gradually increased only to the point where fish are immobilized and captured. Start with pulse width of 500us and do not exceed 5 milliseconds. Pulse rate should start at 30Hz and work carefully upwards. In general, pulse rate should not exceed 40 Hz, to avoid unnecessary injury to the fish.
 - vii. The zone of potential fish injury is 0.5m from the anode. Care should be taken in shallow waters, undercut banks, or where fish can be concentrated because in such areas the fish are more likely to come into close contact with the anode.
 - viii. The monitoring area must be worked systematically, moving the anode continuously in a herringbone pattern through the water. Do not electrofish one area for an extended period.
 - ix. Crew members must carefully observe the condition of the sampled fish. Dark bands on the body and longer recovery times are signs of injury or handling stress. When such signs are noted, the settings for the electrofishing unit may need adjusting. Sampling must be terminated if injuries occur or abnormally long recovery times persist.
 - x. Whenever possible, a block net must be placed below the area being sampled to capture stunned fish that may drift downstream.
 - xi. The electrofishing settings must be recorded in a logbook along with conductivity, temperature, and other variables affecting efficiency. These

notes, with observations on fish condition, will improve technique and form the basis for training new operators.

4. To implement Reasonable and Prudent Measure #4 (monitoring and reporting), the FHWA shall ensure that:
 - a. Within 120 days of completing the project, the FHWA shall ensure submittal of a monitoring report to NMFS describing the FHWA's success meeting their permit conditions. This report will consist of the following information:
 - i. Project identification.
 - (1) Project name.
 - (2) Starting and ending dates of work completed for this project.
 - (3) The FHWA contact person.
 - ii. Isolation of in-water work area. All projects involving isolation of in-water work areas must include a report of any seine and release activity including:
 - (1) The name and address of the supervisory fish biologist.
 - (2) Methods used to isolate the work area and minimize disturbances to fish species
 - (3) Stream conditions prior to and following placement and removal of barriers
 - (4) The means of fish removal.
 - (5) The number of fish removed by species.
 - (6) The location and condition of all fish released.
 - (7) Any incidence of observed injury or mortality.
 - iii. Pollution and erosion control. 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.
 - iv. Site restoration. Documentation of the following conditions:
 - (1) Finished grade slopes and elevations.
 - (2) Log and rock structure elevations, orientation, and anchoring, if any.
 - (3) Planting composition and density.
 - (4) A plan to inspect and, if necessary, replace failed plantings and structures for a period of five years, including the compensatory mitigation site.
 - v. A narrative assessment of the effects of the project and compensatory mitigation on natural stream function.
 - vi. Photographic documentation of environmental conditions at the project site before, during and after project completion.
 - (1) Photographs will include general project location views and close-ups showing details of the project area and project, including pre- and post-construction.

- (2) 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.
 - (3) 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: OSB2001-0247
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 Fishery Service Law Enforcement Office, located at Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, Washington 98661 at 360.418.4246. Care will 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 unnecessarily disturbed.

3. MAGNUSON-STEVENSON ACT

3.1 Background

The objective of the Essential Fish Habitat (EFH) consultation is to determine whether the proposed action may adversely affect designated EFH for relevant species, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

3.2 Magnuson-Stevens Fishery Conservation and Management Act

The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires the inclusion of 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.

3.3 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Pacific salmon: chinook (*Oncorhynchus tshawytscha*), coho (*O. kisutch*), 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.

3.4 Proposed Actions

The proposed action is detailed above in section 1.2 of this document. The action area includes Neskowin Creek from the upstream limit of the proposed action, downstream to its confluence with the Pacific Ocean. This area has been designated as EFH for various life stages of chinook salmon and coho salmon.

3.5 Effects of Proposed Action

As described in detail in section 1.5 of this document, the proposed activities may result in short-term adverse effects to water quality (sediment and chemical contamination). Long-term beneficial effects are likely from greater cross-sectional channel area and improved hydraulic conditions under the new structure.

Effect #1: Turbidity - Excavation and fill of the stream bank in the wetted channel during bridge replacement and instillation of the scour protection 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.

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

Effect #3: Stream Hydraulics - The replacement of 28 cy of existing fill with 10 cy of scour protection fill and the lengthening of the bridge span will increase the potential active channel width and increase the flood capacity under the structure.

3.6 Conclusion

NMFS believes that the proposed action may adversely affect the EFH for Pacific salmon.

3.7 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 FHWA, all of the

Reasonable and Prudent Measures and the 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 recommendations.

3.8 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.

3.9 Consultation Renewal

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

4. LITERATURE CITED

Section 7(a)(2) of the ESA requires biological opinions to be based on the best scientific and commercial data available. This section identifies the data used in developing this Opinion.

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