UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
BIN C15700
Seattle, WA 98115-0070

Refer to:
OHB2002-0058-FEC

June 7, 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 for Fords Bridge Replacement Project, Douglas County, Oregon.

Dear Mr. Patron:

Enclosed is the biological opinion (Opinion) prepared by the National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) on the effects of funding the proposed Fords Bridge Replacement Project in Douglas County, Oregon. In this Opinion, NMFS concluded that the proposed action is not likely to jeopardize the continued existence of ESA-listed Oregon Coast coho salmon, or destroy or adversely modify designated critical habitat. As required by section 7 of the ESA, NMFS included reasonable and prudent measures with nondiscretionary terms and conditions that NMFS believes are necessary to minimize the potential for incidental take associated with this action.

The attached 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 evolutionarily significant units 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 for timely issuance of 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 and its implementing regulations (50 CFR part 600).

If you have any questions regarding this consultation, please contact Jim Collins, of my staff, in the Oregon Habitat Branch at 541.957.3389.

Sincerely,

for Michael R Crouse

D. Robert Lohn
Regional Administrator

cc: Rose Owens - ODOT
John Raasch - ODOT
Ken Franklin - ODOT

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

BIOLOGICAL OPINION

Fords Bridge Replacement Project
Douglas County, Oregon

Agency:	Federal Highway Administration
Consultation Conducted By:	National Marine Fisheries Service, Northwest Region
Date Issued:	June 7, 2002
Issued by:	for Michael R Crouse D. Robert Lohn Regional Administrator
Refer to:	**OHB2002-0048-FEC**

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1. ENDANGERED SPECIES ACT

1.1 Background

On April 2, 2002, the National Marine Fisheries Service (NMFS) received a biological assessment (BA) and a request from the U. S. Army Corps of Engineers (COE) for Endangered Species Act (ESA) Section 7 formal consultation for the Fords Bridge Replacement Project. The project includes replacement of the Fords Bridge and Yokum Road Overpass by the Oregon Department of Transportation (ODOT). The project area is approximately 2 miles north of the City of Canyonville, Oregon, along Interstate 5 (I-5). This biological opinion (Opinion) is based on the information presented in the BA and discussions with the applicant.

The COE has determined that Oregon Coast (OC) coho salmon (*Oncorhynchus kisutch*) may occur within the project area. OC coho salmon were listed as threatened under the ESA on August 10, 1998 (63 FR 42587), critical habitat was designated on February 16, 2000 (65 FR 7764), and interim protective regulations were issued under section 4(d) of the Endangered Species Act (ESA) on July 10, 2000 (65 FR 42422). Critical habitat is designated to include all river reaches accessible to listed coho salmon in Oregon coastal rivers between the Columbia River and Cape Blanco, Oregon. Excluded are areas above specific dams or above longstanding, naturally-impassable barriers (i.e., natural waterfalls in existence for at least several hundred years). The COE, using methods described in *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996), determined that the proposed action is likely to adversely affect OC coho salmon.

This Opinion is based on the information presented in the BA and developed through correspondence to obtain additional information and clarity. The objective of this Opinion is to determine whether the actions to remove the existing structure and construct a new structure are likely to jeopardize the continued existence of the OC coho salmon, or destroy or adversely modify critical habitat. This consultation is undertaken under section 7(a)(2) of the ESA, and its implementing regulations, 50 CFR Part 402.

The attached 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 evolutionarily significant units 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 for timely issuance of this Opinion, our critical habitat analysis has not been removed from this Opinion.

1.2 Proposed Action

1.2.1 Project Purpose

This project is designed to replace an overpass which crosses Yokum Road and the Fords Bridge over the South Umpqua River. I-5 provides vehicular and commercial access between the major cities of Portland, Salem, and Eugene through the Willamette Valley of Western Oregon to Southern Oregon and California.

Inspections of both bridges revealed that the concrete is deteriorated and cracked throughout. The poor condition of the Fords Bridge has caused it to be load restricted.

1.2.2 Yokum Road Overpass

I-5 crosses over Yokum Road at milepost (MP) 101.3. This crossing is known as the Yokum Road Overpass. The overpass is 37 meters long, with four bents, and is located approximately 300 meters south of the South Umpqua River, well outside of designated critical habitat. The existing structure would be replaced with two structures, one northbound and one southbound. Both structures would be an estimated 22 meters wide and 45 meters long. Once the existing overpass is removed, demolition material would be disposed of outside designated critical habitat, at an approved location. The Yokum Road Overpass lies outside of designated critical habitat and will not have impacts to OC coho salmon so this portion of the Fords Bridge Replacement Project will not be discussed in this document.

1.2.3 New Fords Bridges

The existing Fords Bridge has four bents and three piers, two of which lie below the ordinary high water mark (OHWM), and is approximately 172 meters in length. There would be two bridges built in place of the existing structure. The southbound bridge would be built an estimated 30 meters to the south, and the northbound structure would be in the approximately the same location as the existing structure. Both bridges would be continuous steel beams with four bents, one interior bent would lie at the edge of the OHWM which is estimated to be 13 meters long and 10 meters wide. The three spans of both bridges would be approximately 56.5, 72, and 56.5 meters long. The total length of the bridge would be approximately 185 meters and 13.4 meters wide. The new bridges would be approximately 8.6 meters longer and 5.22 meters wider than the existing structure. The increased length would allow the bents to be set back from the channel. The extra width would be for Federal safety compliance.

This portion of the project would be completed in three stages (construct southbound bridge, remove old bridge, construct new northbound bridge). The first phase would be to build the southbound structure. A temporary pile-supported work bridge may be necessary which would lie directly adjacent to and south of the new southbound structure. The work bridge would be approximately 12 meters wide and completely span the South Umpqua River. If a work bridge is needed, there would be approximately five piers within the OHWM. The deck would be sealed

to prevent any pollutants from entering designated critical habitat. Once the southbound structure is completed north and southbound traffic would be routed onto the new bridge.

The second phase of the project would be to remove the existing work bridge and build a second work bridge on the north side of the old Fords Bridge. This structure, would be approximately the same size as the first work bridge, with approximately six piers within the OHWM. Working from the new work bridge removal of the old Fords Bridge would begin. The steel truss section would be cut into manageable sections and lifted out with a crane. This would help to contain and prevent debris from entering designated critical habitat. It is possible that steel supports may be necessary to support the existing steel truss section during removal. In this case there would be an estimated 10 supports within the OHWM. The concrete spans, outside of the OHWM mark, would also likely be cut into smaller sections and lifted out.

The third phase would be to construct the new northbound bridge in the location of the existing structure. The northbound bridge will also be a continuous metal beam structure with a concrete deck. The dimensions will be similar to the southbound bridge. A second work bridge may be necessary to construct the northbound bridge, with approximately five bents within the OHWM, and a sealed deck to prevent pollutants from entering the waterway.

The project would result in an additional 39,140 cubic meters of fill within the 100-year floodplain, 9,140 of which is associated with the new footings and will be below the OHWM. The old footings would be removed, which would result in 8,865 cubic meters of removal below the OHWM. The project would result in an increase of 275 cubic meters of fill within the OHWM. The remaining 30,000 cubic meters of fill is required to widen the southern bridge approach.

Runoff from the new bridges and roadway would be piped to the ends of the bridge, and flow overland though existing vegetated ditches for approximately 100 meters, before entering the South Umpqua River. Currently there are seven scuppers, all tied together, draining directly to the bank of the river without any treatment.

The project would result in about 400 square meters of vegetation removal. Woody vegetation would be replanted at a rate of 1.5 to 1. Areas requiring revegetation would be replanted between October 15 and April 15. Mitigation plantings would be monitored for three years, achieving 80 percent groundcover after the third year. Approximately 75 trees ranging in size from two to 50 centimeters in diameter at breast height (dbh) would be cleared from the north bank in order to accommodate the realignment of the southbound bridge. To widen the southbound bridge approach, 103 trees from the south bank would be removed, ranging from two to 50 centimeters (dbh). Sediment and erosion control measures outlined in the BA (pages 30 - 35) will be implemented in this portion of the project.

Access on both the north and south ends of the bridge would be via existing access roads, so there would be little vegetation disturbance. An existing access road on the southwest quadrant of the bridge, and a second access road coming from either I-5 or a frontage road on the

northwest quadrant would also be used. Vehicle and material staging would occur at both the north and south ends of the bridge, at least 45 meters from the OHWM. Both potential staging areas are outside of designated critical habitat.

All activities below the OHWM elevation will be isolated using temporary cofferdams, and would occur during the Oregon Department of Fish and Wildlife (ODFW) negotiated in-water work period (July 1 to September 15). Any exceptions to this timing would be granted only with the approval of a NMFS biologist. Any fish trapped in the isolation area would be removed by an ODFW/ODOT-approved biologist before dewatering.

1.2.4 Compensatory Mitigation Site

The two footings for the new bridges that lie on the edge of the OHWM would result in approximately 260 square meters of lost instream habitat. Due to the nature of the project site, there is no feasible instream mitigation within the project area. As compensation, ODOT would work with ODFW to complete a habitat restoration project consisting of approximately 15 multiple log structures within Stouts Creek. Stouts Creek is located approximately 20.8 kilometers upstream of Fords Bridge, and the mitigation site lies an estimated 3.5 kilometers upstream of the mouth of Stouts Creek, a tributary to the South Umpqua River. This reach of Stouts Creek currently lacks instream large woody material. This project would provide instream habitat complexity by providing refugia and additional pools for rearing salmonids. The mitigation project would be designed by ODFW and funded by ODOT. All trees removed at the Fords Bridge site would hauled to Stouts Creek, with root wads attached, and used in the mitigation project. A track-mounted excavator would be used to individually place the logs in Stouts Creek. To minimize riparian disturbance, existing access corridors would be used.

1.3 Biological Information and Critical Habitat

Within the South Umpqua watershed, NMFS listed OC coho salmon as threatened under the ESA on August 10, 1998 (63 FR 42587), critical habitat was designated on February 16, 2000 (65 FR 7764), and protective regulations were issued under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). Critical habitat is designated to include all river reaches accessible to ESA-listed coho salmon in Oregon coastal rivers between the Columbia River and Cape Blanco, Oregon. Excluded are areas above specific dams or above longstanding, naturally-impassable barriers (i.e., natural waterfalls in existence for at least several hundred years). The adjacent riparian zone is defined based on key riparian functions. These functions are shade, sediment, nutrient/chemical regulation, streambank stability, and input of large woody debris/organic matter.

Coho salmon are known to spawn and rear in the South Umpqua watershed. Adult coho salmon enter the South Umpqua River in late September and spawn from October through January, with the majority of spawning activity occurring in smaller, low gradient tributaries. Coho salmon primarily use the South Umpqua River within the project area as a migration corridor. The migration of coho salmon smolts downstream typically occurs from early February though May,

but may extend into June. Due to warm summer water temperatures coho salmon aren't expected to be within the project area during the ODFW in-water work period (July 1 to September 15).

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). 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: (1) Definition of the biological requirements and current status of the listed species, and (2) evaluation of 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: collective effects of the proposed or continuing action, the environmental baseline, and any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. 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. 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 destroy or adversely modify critical habitat, it must identify any reasonable and prudent alternatives 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, and juvenile rearing of OC coho salmon.

1.4.1 Biological Requirements

The first step in the methods NMFS uses for applying the ESA section 7(a)(2) to listed coho 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 available data that is relevant to the determination.

The relevant biological requirements are those necessary for OC coho salmon to survive and recover to naturally-reproducing population levels, at which time 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 environmental.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful migration and holding in the action area. The current status of the OC coho salmon, based upon their risk of extinction, has not significantly improved since the species was listed. The South Umpqua watershed serves as freshwater riverine spawning habitat and year-round juvenile rearing habitat. However, high sand and silt content in the substrate makes the action area an unlikely spawning habitat. Lack of complex cover, deep pools, and undercut banks combined with high summer water temperatures make juvenile salmonid rearing very unlikely in the action area.

1.4.2 Environmental Baseline

The current range-wide status of the identified evolutionarily significant unit (ESU) may be found in Nickelson et al. (1992) and Weitkamp et. al (1995). The identified action will occur within the range of OC coho salmon. The action area is the area that is directly and indirectly affected by the action. The 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. As such, the action area for the proposed activity includes the immediate watershed where the bridge replacement and safety improvements will occur, and those areas upstream and downstream that may reasonably be affected. For the purposes of this Opinion, the action area is defined as I-5 from MP 101.2 to 101.6, the South Umpqua River 500 meters upstream and downstream of Fords Bridge, and Stouts Creek from the mouth upstream approximately 3.9 kilometers. Temporary indirect impacts (temperature modification, disruption of primary productivity and food resources) and potential direct affects (sediment, pollutant discharge and hydraulics) to the South Umpqua River and Stouts Creek could be caused by the in-water work and general riparian and bank disturbance within the project area.

The dominant land use in the South Umpqua watershed is residential, agricultural, forest, and recreational. The South Umpqua River is water-deficient, primarily due to the seasonal pattern of rainfall, and the demand for water for residential and irrigation use. The Oregon Department of Environmental Quality (ODEQ) has listed the South Umpqua River on their 303(d) List of Water Quality Limited Water Bodies (303(d) list). The ODEQ listed water quality problems identified within the project area include: Biological criteria, dissolved oxygen (May to October), periphyton (summer), pH (summer), temperature (summer), and fecal coliform (ODEQ 1999). There is only one reservoir in use in the South Umpqua basin.

Based on the best available information regarding the current status of OC coho salmon range-wide, the population status, trends, genetics, and the poor environmental baseline conditions within the action area, NMFS concludes that the biological requirements of OC coho salmon are not currently being met. Degraded habitat, resulting from agricultural practices, forestry practices, road building, and residential construction, indicate many aquatic habitat indicators are not properly functioning within the South Umpqua River. Actions that do not maintain or restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of OC coho salmon.

1.5 Analysis of Effects

1.5.1 Effects of Proposed Action

The proposed actions have the potential to cause the following impacts to OC coho salmon:

Construction Equipment. Accidental release of fuel, oil, and other contaminants may occur. Operation of back-hoes, excavators, and other equipment requires the use of fuel, lubricants, etc., which, if spilled into a waterbody channel, 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 of pollutants entering the waterway, construction equipment, materials and refueling would be staged at least 45 meters from the OHWM.

Hardened embankments. Impacts to waterways from installation of hardened embankments include 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 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 land-water interfaces and adjacent banks (USACE 1977). Streamside vegetation provides shade that reduces water temperature. 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 attachment points for aquatic prey organisms, shelter from swift currents during high flow events, retention of bed load materials, and reduction of flow velocity.

The most desirable method of bank protection is revegetation. However, revegetation alone can seldom stabilize banks steeper than 3 to 1 (horizontal-vertical) or areas of high velocity (USACE 1977). Although they are biologically less desirable, fixed structures provide the most reliable means of bank stability. The use of fixed structures should be a last resort. Combining structural measures such as sloped riprap, vegetation, and large woody debris (LWD) is preferable to a structural solution without vegetation (USACE 1977). Where riprap is necessary it would be buried under native streambank material to facilitate stream continuity and the growth of woody vegetation.

Sedimentation. Potential sedimentation impacts to listed salmonids from the proposed actions include both direct and indirect effects. Potential direct effects include mortality from exposure to suspended sediments (turbidity) and contaminants resulting for construction. Potential indirect effects include behavioral changes resulting from elevated turbidity level (Sigler *et al.* 1984, Berg and Whitman et al. 1982, Gregory 1988), during river bank habitat alterations.

Suspended sediment and turbidity influences on fish reported in the literature range from beneficial to detrimental. Elevated total suspended solids (TSS) conditions have been reported to enhance cover conditions, reduce piscivorous fish/bird predation rates, and improve survival. Elevated TSS conditions have also been reported to cause physiological stress, reduce growth, and adversely affect survival. Of key importance in considering the detrimental effects of TSS on fish are the frequency and the duration of the exposure, not just the TSS concentration.

Behavioral avoidance of turbid waters may be one of the most important effects of suspended sediments (DeVore *et al.* 1980, Scannell 1988). Salmonids have been observed to move laterally and downstream to avoid turbid plumes (Sigler *et al.* 1984, Lloyd 1987, Scannell 1988). Juvenile salmonids tend to avoid streams that are chronically turbid, such as glacial streams or those disturbed by human activities, unless the fish need to traverse these streams along migration routes (Lloyd *et al.* 1987). In addition, a potentially positive reported effect is providing refuge and cover from predation (Gregory and Levings 1998).

Fish that remain in turbid, or elevated TSS, waters experience a reduction in predation from piscivorous fish and birds (Gregory and Levings 1998). In systems with intense predation pressure, this provides a beneficial trade off (e.g., enhanced survival) to the cost of potential physical effects (e.g., reduced growth). Turbidity levels of about 23 Nephalometric Turbidity Units (NTU) have been found to minimize bird and fish predation risks (Gregory 1993). Exposure duration is a critical determinant of the occurrence and importance of physical or behavioral effects (Newcombe and MacDonald 1991). Salmonids have evolved in systems that periodically experience short-term pulses (days to weeks) of high suspended sediment loads, often associated with flood events, and are adapted to such high pulse exposures. Adult and larger juvenile salmonids may be little affected by the high concentrations of suspended sediments that occur during storm and snowmelt runoff episodes (Bjorn and Reiser 1991). However, research shows that chronic exposure can cause physiological stress responses that can increase maintenance energy and reduce feeding and growth (Redding et al. 1987, Lloyd 1987, Servizi and Martens 1991).

Turbidity, at moderate levels, has the potential to adversely affect primary and secondary productivity, and at high levels, has the potential to injure and kill adult and juvenile fish, and may also interfere with feeding (Spence *et al.* 1996). Newly emerged salmonid fry may be vulnerable to even moderate amounts of turbidity (Bjornn and Reiser 1991). Other behavioral effects on fish, such as gill flaring and feeding changes, have been observed in response to pulses of suspended sediment (Berg and Northcote 1985). Fine, redeposited sediments also have the potential to adversely affect primary and secondary productivity (Spence *et al.* 1996), and to reduce incubation success (Bell 1991) and cover for juvenile salmonids (Bjornn and Reiser 1991). Because the potential for turbidity should be localized and brief, the probability of direct mortality is negligible.

Construction-related effects necessary to complete the proposed action will be minimized by implementation of effective erosion and pollution control measures, and completing all work within the OHWM during the ODFW negotiated in-water work period. In addition, all work will be isolated from the wetted channel.

Water Quality Stormwater Effects. Due to an increase of new impervious surface, the potential exists for an increase in runoff from the proposed new impervious surface at both proposed project sites. However, the proposed stormwater runoff treatment criteria will more than offset any potential adverse effects to water quality as a result of the proposed action. The proposed stormwater treatment within the BA would require all stormwater to be routed to the end of the bridges, where it would be treated in a manner that would not result in a change in the hydraulic conditions or an increase of pollutants to the South Umpqua River.

Stream Hydraulics. The placement of fill material below the OHWM would typically result in simplification of habitat and increased stream velocities under the structure. However, the new bridges have fewer bents within the OHWM. The new bents within the OHWM would result in a slight increase of fill within the OHWM cross section. Bridge approach fill within the 100-year floodplain can result in a restriction of the floodway causing increased stream velocities during high flows. The increased velocities can facilitate stream degradation downstream an unknown distance. The degradation process begins with increased channel down-cutting and bank erosion. This can result in an increase of fine sediments within the channel substrate as well as a decrease in width to depth ratios. The instream habitat is simplified due to fewer pools and complex cover (Rosgen 1996).

The Fords Bridge Project will result in an additional 39,140 cubic meters of fill within the 100-year floodplain, 9,140 of which are associated with the new footings, and will be below the OHWM. The old footings will be removed, which will result in 8,865 cubic meters of removal below the OHWM. The project will result in an increase of 275 cubic meters of fill within the OHWM. The remaining 30,000 cubic meters of fill are required to widen the southern bridge approach. To minimize channel restriction, the new fill would not reduce the distance between the existing bridge approaches on opposite sides of the river. The increase of fill within the OHWM is not expected to result in significant changes to the hydrology of the South Umpqua River. The increase of fill associated with the bridge approach could result in changes in the

local hydraulic conditions during flow levels near the 100-year floodplain elevation. Fill within the 100-year floodplain restricts the stream channel, which can have a localized increase in stream velocity and bank erosion. Restricting the channel also would result in a loss of off-channel habitat.

Riparian Vegetation. The removal of some, mostly non-native invasive species of riparian vegetation such as Himalayan blackberry would result in the short-term potential for exposed soils and increased sediment transport to the South Umpqua River. Woody vegetation that would be cleared at the Lower Perry Interchange Bridges Project (OHB2002-0012) would include approximately 75 conifers, ranging between 75 and 300 millimeters dbh. However, during construction, erosion control measures and post-project riparian plantings would reduce erosion during construction and restore woody vegetation. All impacted areas would be restored to pre-work conditions. Damaged streambanks would be restored to a natural slope, pattern and profile suitable for establishment of permanent woody vegetation. All exposed soil surfaces, including construction access roads and associated staging areas, would be stabilized with mulch, native herbaceous seeding, and native woody vegetation. Woody vegetation removed during construction would be replanted at a 1.5 to 1 ratio. Areas requiring revegetation would be replanted between October 15 and April 15. The riparian plantings would provide bank stabilization, shading, and increase the potential for insect production. Mitigation plantings are proposed to be monitored for three years, achieving 80 percent ground after the third year.

Instream Habitat. There would be a long-term loss of 260 square meters of instream habitat due to the two interior bents that would be constructed within the OHWM. This reach of the South Umpqua River is composed primarily of bedrock, offering low habitat value.

The trees being removed from the project site will be installed in a series of multiple log structures within Stouts Creek, a tributary to the South Umpqua River. Stouts Creek provides both spawning and rearing habitat for coho salmon. The system is currently lacking LWD and stream habitat complexity. The additional LWD would create a more complex habitat by increasing the number and quality of pools, while improving back-water and off-channel habitat.

Work Area Isolation and Fish Removal. Bridge bent construction and removal may require work area isolation from the flowing water. Fish removal activities would be in accordance with NMFS fish handling guidelines. Any listed fish removed from the isolated work area would experience high stress with the possibility of up to a five percent delayed mortality rate, depending on rescue method.

Work area isolation can result in a loss of aquatic invertebrates due to dewatering within the wetted channel. In addition, sediment-laden water created within isolated work areas could escape, resulting in impacts to the aquatic environment downstream of the project site.

The adverse effects of these activities on OC coho salmon and their riparian and aquatic habitats would be avoided or minimized by carrying out construction methods and approaches described in the BA (pages 30-35).

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 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 or chemical regulation, streambank stability, and input of large woody debris or organic matter.

The proposed actions will affect critical habitat. In the short term, a temporary increase of sediments and turbidity, and disturbance of riparian and instream habitat is expected. Riparian function will be affected by the proposed action, as described in Section 1.5.1 of this Opinion. Habitat features that will likely be negatively affected by the proposed action include water quality (including temperature), water quantity, and riparian vegetation. Implementation of project conservation measures as described above in Section 1.2 (Proposed Action) would avoid or minimize the risk of adverse effects.

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." The action area is defined as I-5 from MP 101.2 to 101.6, the South Umpqua River 500 meters upstream and downstream of Fords Bridge, and Stouts Creek from the mouth upstream approximately 3.9 kilometers.

Many actions occur within the South Umpqua watershed, including the action area. Non-federal activities within the action area are expected to increase with a projected 34 percent increase in human population over the next 25 years in Oregon (Oregon Department of Administrative Services 1999). Thus, NMFS assumes that future private and state actions will continue within the action area, but at increasingly higher levels as population density increases. NMFS assumes that future COE transportation projects in the South Umpqua watershed will be reviewed through separate section 7 consultation processes and therefore are not considered cumulative effects.

1.6 Conclusion

NMFS has determined that, when the effects of the COE's proposed action (funding the Fords Bridge Replacement Project) are added to the environmental baseline and cumulative effects occurring in the action area, they are not likely to jeopardize the continued existence of OC coho salmon, or destroy or adversely modify designated critical habitat. These conclusions were based on the following considerations: (1) All in-water work and other construction activities within the OHWM elevation will take place according to ODFW guidelines for timing of in-

water work to protect fish and wildlife resources; (2) work area isolation (including use of NM FS' guidelines for proper fish handling) and other conservation measures will be in place to avoid or minimize adverse affects to water quality; (3) potential flow effects of increased impervious area will be avoided or minimized by water quality treatment and detention before being released into the South Umpqua River; (4) streambanks and riparian areas disturbed by new construction and in the area uncovered by removal of the old bridge will be planted with native woody vegetation; and (5) LWD from the project site would be installed in Stouts Creek to improve aquatic habitat in that stream. Therefore, the proposed action is not expected to prevent or delay the achievement of properly functioning habitat conditions in the action area.

1.7 Reinitiation of Consultation

As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and if: (1) The amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Opinion, (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this Opinion, or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of authorized incidental take is exceeded, any operations causing such take must cease pending reinitiation of consultation.

2. INCIDENTAL TAKE STATEMENT

Sections 4 (d) and 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 in the definition of "take" in the 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, or 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 endangered or 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 and Extent of the Take

NMFS anticipates that the action covered by this Opinion is reasonably certain to result in incidental take of OC coho salmon because of detrimental effects from sediment pulses and increased temperature levels (non-lethal) and the slight possibility of juvenile presence in the vicinity of the project site during in-water work. NMFS expects the possibility exists for incidental take of up to 20 juvenile coho salmon during work area isolation and handling of fish. Take resulting from the effects of other project actions covered by this Opinion is largely unquantifiable in the short term and not expected to be measurable in the long term. The extent of take is limited to 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 COE has the continuing duty to regulate the activities covered in this incidental take statement. If the COE fails to require 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 Fords Bridge Replacement Project includes a set of "conservation measures" designed to minimize take of ESA-listed species. These are described on pages 30 to 35 of the BA, dated February 20, 2002. Specific measures for in-water and bank work, clearing and grubbing, bridge removal, erosion control, hazardous materials, and site-specific conservation and habitat remediation measures are included.

NMFS believes that the following reasonable and prudent measures along with conservation measures described in the BA are necessary and appropriate in order to minimize the likelihood of take of listed fish resulting from implementation of this Opinion. These reasonable and prudent measures would also minimize adverse effects to designated critical habitat.

The COE shall:

1. Minimize the likelihood of incidental take by limit the time of in-water work as necessary to avoid harming vulnerable salmon life stages, including migration and rearing.

2. Minimize the likelihood of incidental take from in-water work by ensuring that the in-water work areas are isolated from flowing water.

3. Minimize the amount and extent of incidental take from construction activities in or near the waterway through development and implementation of effective erosion and pollution control measures throughout the area of disturbance and for the life of the project.

4. Minimize the amount and extent of take from loss of instream habitat and impacts to critical habitat by implementing measures to minimize impacts to riparian and instream habitat, or where impacts are unavoidable, to replace or restore lost riparian and instream functions.

5. Minimize the amount and extent of take from stormwater impacts and altered stream hydraulics by implementing measures to treat water and limit fill within the 100-year floodplain.

6. Ensure that temporary and permanent impacts to the riparian and instream habitat are restored and mitigated.

7. Ensure effectiveness of implementation of the reasonable and prudent measures, all fish handling, erosion control measures, and plantings for site restoration through monitoring and evaluation both during and following construction.

2.3 Terms and Conditions

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

1. To implement Reasonable and Prudent Measure #1 (in-water timing and minimizing the extent of in-water work), the COE shall ensure:
    a. Construction impacts will be confined to the minimum area necessary to complete the project.
        i. Survey and mark the ordinary high water mark at the project site prior to commencement of work.
        ii. All work within the active channel that could potentially contribute sediment or toxicants to downstream fish-bearing streams will be completed within the ODFW in-water work period (July 1 to September 15)
    b. Extensions of the in-water work period, including those for work outside the wetted perimeter of the stream but below the ordinary high water mark, must be approved by biologists from NMFS.
    c. ODOT will arrange a pre-construction meeting with NMFS and the contractor prior to commencement of project activities.
    d. ODOT shall notify NMFS at least one week prior to the start of work below the ordinary high water mark.

2. To implement Reasonable and Prudent Measure #2 (isolation of in-water work area and proper fish handling methods), the COE shall ensure that the work area is well isolated from the active flowing stream within a coffer dam (made out of sandbags, sheet pilings, inflatable bags, etc.), or similar structure, to minimize the potential for sediment

entrainment. The COE shall also ensure that during fish capture and salvage proper fish handling techniques will be practiced.

a. During in-water work (work within the OHWM), if the project involves either significant channel disturbance or use of equipment within the wetted channel, ensure that the work area is well isolated from the active flowing stream within a cofferdam (made out of sand bags, sheet pilings, inflatable bags, etc.) or similar structure, to minimize the potential for sediment entrainment. Furthermore, no ground or substrate disturbing action will occur within the OHWM 45 meters upstream of potential spawning habitat as measured at the thalweg without isolation of the work area from flowing waters. After the coffer dam is in place, any fish trapped in the isolation pool will be removed by a permitted ODOT and/or ODFW Biologist prior to de-watering, using the ODFW-approved methods.

   i. Any water intake structure authorized under this Opinion must have a fish screen installed, operated and maintained in accordance to NMFS fish screen criteria.

      (1) Water pumped from the work isolation area will be discharged into an upland area providing over-ground flow before returning to the creek. Discharge will occur so that it does not cause erosion.

      (2) Discharges into potential fish spawning areas or areas with submerged vegetation are prohibited.

   ii. Fish Salvage.

      (1) Prior to and intermittently during pumping attempts will be made to salvage and release fish from the work isolation area as is prudent to minimize risk of injury. If the fish salvaging aspect of this project requires the use of seine equipment to capture fish, it must be accomplished as follows:

         (a) Seining will be conducted by or under the supervision of a fishery biologist experienced in such efforts and all staff working with the seining operation must have the necessary knowledge, skills, and abilities to ensure the safe handling of all ESA-listed fish.

         (b) 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 necessary to prevent the added stress of an out-of-water transfer.

         (c) Seined fish must be released as near as possible to capture sites.

         (d) The transfer of any ESA-listed fish from the applicant to third-parties other than NMFS personnel requires written approval from NMFS.

(e) The applicant must obtain any other Federal, state, and local permits and authorizations necessary for the conduct of the seining activities.

(f) The applicant must allow the NMFS, or its designated representative, to accompany field personnel during the seining activity, and allow such representative to inspect the applicant's seining records and facilities.

(g) 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 prior to 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.

iii. If fish salvaging requires the use of electrofishing equipment to capture fish, it must be accomplished as follows (NMFS 1998):

(a) Electrofishing may not occur in the vicinity of listed adults in spawning condition or in the vicinity of redds containing eggs.

(b) Equipment must be in good working condition. Operators must go through the manufacturer's preseason checks, adhere to all provisions, and record major maintenance work in a log.

(c) 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 in the form of 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.

(d) Measure conductivity and set voltage as follows:

Conductivity (umhos/cm)	Voltage
Less than 100	900 to 1100
100 to 300	500 to 800
Greater than 300	150 to 400

(e) Direct current (DC) must be used at all times.

(f) 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.

(g) 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.

(h) 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.

(i) Crew 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.

(j) Whenever possible, a block net must be placed below the area being sampled to capture stunned fish that may drift downstream.

(k) The electrofishing settings must be recorded in a logbook along with conductivity, temperature, and other variables affecting efficiency. These notes, together with observations on fish condition, will improve technique and form the basis for training new operators.

iv. Fish Passage. Passage shall be provided for both adult and juvenile forms of salmonid species throughout the construction period. The COE/ODOT will ensure passage of fish as per ORS 498.268 and ORS 509.605 (Oregon's fish passage guidance).

3. To Implement Reasonable and Prudent Measure #3 (erosion and pollution control), COE will ensure that:

a. The Contractor will develop and implement a site-specific spill prevention, containment, and control plan (SPCCP), and is responsible for containment and removal of any toxicants released. The Contractor will be monitored by the ODOT Engineer to ensure compliance with this SPCCP.

b. Material removed during excavation will only be placed in locations where it cannot enter streams, wetlands, or other water bodies.

c. During excavation, native streambed materials will be stockpiled above the bankfull elevation for later use. Once riprap has been placed, native materials will be placed over the top of the riprap.

d. The following erosion and pollution control materials are onsite:
   i. 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.
   ii. An oil absorbing, floating boom is available on-site during all phases of construction. The boom must be of sufficient length to span the wetted channel.
   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. All exposed or disturbed areas will be stabilized to prevent erosion.
   i. Areas of bare soil within 45 meters of waterways, wetlands or other sensitive areas will be stabilized by native seeding[1], mulching, and placement of erosion control blankets and mats, if applicable, but within 14 days of exposure.
   ii. All other areas will be stabilized quickly as reasonable, but within 14 days of exposure.
   iii. Seeding outside of the growing season will not be considered adequate nor permanent stabilization.

f. All erosion control devices will be inspected during construction to ensure that they are working adequately.
   i. Erosion control devices will be inspected daily during the rainy season, weekly during the dry season, monthly on inactive sites.
   ii. If inspection shows that the erosion controls are ineffective, work crews will be mobilized immediately, during working and off-hours, to make repairs, install replacements, or install additional controls as necessary.
   iii. Erosion control measures will be judged ineffective when turbidity plumes are evident in waters occupied by listed salmonids during any part of the year.

g. If soil erosion and sediment resulting from construction activities is not effectively controlled, the engineer will limit the amount of disturbed area to that which can be adequately controlled.

h. Sediment will be removed from sediment controls once it has reached 1/3 of the exposed height of the control. Whenever straw bales are used, they will be staked and dug into the ground 12 cm. Catch basins will be maintained so that no more than 15 cm of sediment depth accumulates within traps or sumps.

i. Sediment-laden water created by construction activity will be filtered before it leaves the right-of-way or enters a stream or other water body. Silt fences or

[1] 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.

other detention methods will be installed as close as reasonable to culvert outlets to reduce the amount of sediment entering aquatic systems.

j. Any hazardous materials spill will be reported to NMFS.
   i. In the event of a hazardous materials or petrochemical spill, immediate action shall be taken to recovery toxic materials from further impacting aquatic or riparian resources.
   ii. In the event of a hazardous materials or petrochemical spill, a detailed description of the quantity, type, source, reason for the spill, and actions taken to recover materials will be documented. The documentation should include photographs.

k. The work bridges will have containment measures in place that minimizes any potential of petrochemicals or hazardous materials from entering the river.
   i. The decking of the work bridge shall be constructed to self-contain petrochemicals and hazardous materials.
   ii. The work bridges and the containment structure will be maintained to preserve containment integrity throughout the term of the project.

l. Refueling and hazardous materials.
   i. All staging and refueling shall occur at least 90 meters from the ordinary high-water mark, except as stated below.
      (1) Fuel storage locations within 90 meters of the ordinary high-water mark shall have containment measures in place that meets or exceeds 100% containment.
      (2) No auxiliary fuel tanks are stored within 90 meters of the ordinary high-water mark.
   ii. Hazardous materials stored within 90 meters of the ordinary high-water mark shall have containment measures in place that meets or exceeds 100% containment.
   iii. No hazardous materials will be stored on the work bridge.

4. To Implement Reasonable and Prudent Measure #4 (minimize loss of instream habitat), COE will ensure that:
   a. The distance between existing bridge approach fill and the 100-year flood plain or OHWM (whichever is closer to the existing fill) will not be reduced.
   b. The amount of fill within the flood plain will be minimized.
   c. Boundaries of the clearing limits associated with site access and construction will be flagged to prevent ground disturbance of riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.
   d. During excavation, native streambed material will be stockpiled out of the two-year flood plain and for later use in back-filling the trenches used to construct the coffer dams.
   e. During project design ODOT will work to minimize the amount of riprap used. Where riprap is necessary, only clean, non-erodible, upland angular rock of sufficient size for long term armoring will be employed. Riprap will not be "end-dumped" within the wetted channel.

f. Placement of large wood will be implemented as described in the Proposed Action section of the 2002 biological assessment and this Opinion. Wood placement will only include complex large wood to provide functional refugia habitat for fish (e.g. root wads shall not be trimmed).

g. Alteration or disturbance of stream banks and existing riparian vegetation will be minimized. Where bank work is necessary, bank protection material shall be placed to maintain normal waterway configuration whenever possible.

h. Temporary access roads will be designed as follows:
   i. Temporary access roads will not cross streams.
   ii. Alteration of existing native vegetation will be minimized in the construction, use, and maintenance of temporary access roads.
   iii. Existing roadways or travel paths will be used whenever reasonable.
   iv. Vehicles and machinery must cross riparian areas at right angles to the main channel wherever reasonable.
   v. Temporary roads within 45 meters of streams will avoid, minimize and mitigate soil disturbance and compaction by clearing vegetation to ground level and placing clean gravel over geotextile fabric.
   vi. No treated wood may be used within or above the ordinary high water mark.

i. All project operations, except efforts to minimize storm or high flow erosion, will cease under high flow conditions that may result in inundation of the immediate work area.

j. Measures will be taken to prevent any debris from falling within the boundaries of the ordinary high water mark. Any material that falls within this area will be removed in a manner that has a minimum impact to the riparian area, streambed and water quality.

5. To implement Reasonable and Prudent Measure # 5 (new impervious surface and stormwater management), above, the COE shall ensure that:

   a. All storm water runoff from any road or bridge built pursuant to a permit issued under this Opinion must be managed to ensure that it will not result in a change in the existing hydraulic conditions or an increase of pollutants to the receiving water.

   b. Any project that will produce new surfaces or land use conversions that retard the entry of water into the soil must control the quantity and quality of the resulting stormwater runoff for the life of the project.

   c. Stormwater must be infiltrated or dispersed onsite to the maximum extent possible without causing flooding or erosion impacts.

   d. When stormwater runoff must be discharged into a freshwater system, the following requirements apply.
      i. The area must be drained by a conveyance system comprised entirely of manufactured elements (e.g., pipes, ditches, outfall protection) that extends to the ordinary high water line of the receiving water.

ii. Any erodible elements of this system must be adequately stabilized to prevent erosion.
iii. Surface water from the area must not be diverted from or increased to an existing wetland, stream or near-shore habitat sufficient to cause a significant adverse effect.
iv. Runoff treatment facilities must be designed, built and maintained to collect runoff from the project site using the best available technology applicable to the site conditions. Treatment must be provided to remove debris, nutrients, sediment, petroleum hydrocarbons, metals and other pollutants likely to be present.

6. To implement Reasonable and Prudent Measure #6 (site restoration and mitigation), the COE shall ensure that:
   a. Site restoration and clean-up, including protection of bare earth by seeding, planting, mulching and fertilizing, is done in the following manner.
      i. All damaged areas will be restored to pre-work conditions including restoration of original streambank lines, and contours.
      ii. All exposed soil surfaces, including construction access roads and associated staging areas, will be stabilized at finished grade with mulch, native herbaceous seeding, and native woody vegetation.
         (1) Planting should occur between October 15 and March 15. Do not plant in freezing periods of weather.
         (2) On cut slopes steeper than 1 to 2, a tackified seed mulch will be used so that the seed does not wash away before germination and rooting occurs. In steep locations, a hydromulch will be applied at 1.5 times the normal rate.
      iii. 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.
      iv. Plantings will be arranged randomly within the revegetation area.
      v. No herbicide application will occur within 90 meters of any stream channel as part of this permitted action. Mechanical removal of undesired vegetation and root nodes is permitted.
      vi. No surface application of fertilizer will be used within 15 meters of any stream channel as part of this permitted action.
      vii. Fencing will be installed as necessary to prevent access to revegetated sites by livestock or unauthorized persons.
      viii. 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 the COE. The alternative plan will address temporal loss of function.

7. To implement Reasonable and Prudent Measure #7 (monitoring and reporting), the COE shall ensure that:

a. Within 90 days of completing the project, the COE/ODOT will submit a monitoring report to NMFS describing the 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 COE contact person.
   (4) Monitoring reports shall be submitted to:

   National Marine Fisheries Service
   Oregon State Branch, Habitat Conservation Division
   Attn: OSB2002-0058-FEC
   525 NE Oregon Street, Suite 500
   Portland, Oregon 97232-2778

ii. Isolation of in-water work area. 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 ESA-listed species.
   (3) Stream conditions before 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.
   Copies of 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 planting and structures for three years.

v. A narrative assessment of the project's effects on natural stream function.

vi. Photographic documentation of environmental conditions at the project site and compensatory mitigation site(s) (if any) 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.

vii. Post construction impacts. The COE/ODOT shall assess the project's impacts, temporary and permanent, and compare them to the impacts assessed in the 2002 Biological Assessment. This written assessment will be provided to NMFS for review. If the actually impacts exceed those outlined in the BA then the COE/ODOT will provide additional mitigation to offset those impacts.

3. MAGNUSON - STEVENS 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 Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-297), 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 salmon (*Oncorhynchus tshawytscha*), coho salmon (*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 actions are detailed in Section 1.2, Proposed Action. The action area is defined as I-5 from MP 101.2 to 101.6 and the South Umpqua River 500 meters upstream and downstream of the Fords Bridge. This area has been designated as EFH for various life stages of coho salmon and chinook salmon.

3.5 Effects of Proposed Action

As described in detail in Section 1.5, Analysis of Effects, the proposed activities may result in detrimental short- and long-term adverse effects to a variety of habitat parameters. These impacts include increases in turbidity, disturbance of the beds and banks of the river, removal of riparian vegetation, and the potential for pollutants to enter the water.

3.6 Conclusion

NMFS believes that the proposed action may adversely affect the EFH for coho salmon and chinook 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 COE and 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 conservation 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 Supplemental Consultation

The COE must reinitiate EFH consultation with NMFS if either the 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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