**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:**
**2003/00554**

June 30, 2003

Mr. Fred Patron
Federal Highway Administration
The Equitable Center, Suite 100
530 Center Street NE
Salem, OR 97301

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation on the Effects of the Kellogg Creek Fish Ladder Improvement Project, Kellogg Creek Watershed, Multnomah County, Oregon

Dear Mr. Patron:

Enclosed is a biological opinion (Opinion) pursuant to section 7 of the Endangered Species Act (ESA) prepared by NOAA's National Marine Fisheries Service (NOAA Fisheries), on the effects of the proposed Kellogg Creek Fish Ladder Improvement Project, Kellogg Creek Watershed, Multnomah County, Oregon. In this Opinion, NOAA Fisheries concludes that the proposed action is not likely to jeopardize the continued existence of ESA-listed Lower Columbia River steelhead (*Oncorhynchus mykiss*), Upper Willamette River steelhead, Lower Columbia River chinook salmon (*O. tshawytscha*), and Upper Willamette River chinook salmon. As required by section 7 of the ESA, NOAA Fisheries included reasonable and prudent measures with non-discretionary terms and conditions that NOAA Fisheries believes are necessary to minimize the impact of incidental take associated with this action.

This document also serves as consultation on essential fish habitat (EFH) for chinook and coho salmon pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and implementing regulations at 50 CFR Part 600. After review of the EFH information included with the BA, NOAA Fisheries has determined the proposed action is likely to adversely effect EFH for chinook and coho salmon.

If you have any questions regarding this consultation, please contact Art Martin of my staff in the Oregon Habitat Branch at 503.231.6848.

Sincerely,

for Michael R Course

D. Robert Lohn
Regional Administrator

cc: Molly Cary, ODOT
Diana Hwang, USFWS
Tom Murtagh, ODFW

# Endangered Species Act - Section 7 Consultation
# Biological Opinion

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# Magnuson-Stevens Fishery Conservation and Management Act
# Essential Fish Habitat Consultation

Kellogg Creek Fish Ladder Improvement Project,
Kellogg Creek Watershed, Multnomah County, Oregon

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|---|---|
| Agency: | Federal Highway Administration |
| Consultation Conducted By: | NOAA's National Marine Fisheries Service, Northwest Region |
| Date Issued: | June 30, 2003 |
| Issued by: | for Michael R Course<br>D. Robert Lohn<br>Regional Administrator |
| **Refer to:** | **2003/00554** |

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# 1. INTRODUCTION

## 1.1 Background

On May 12, 2003, NOAA's National Marine Fisheries Service (NOAA Fisheries) received a request, and biological assessment (BA), from the Federal Highway Administration (FHWA) for Endangered Species Act (ESA) section 7 formal consultation and Magnuson-Stevens Fishery Conservation and Management Act (MSA) essential fish habitat (EFH) consultation for the Kellogg Creek Fish Ladder Improvement Project, in the Kellogg Creek watershed, Multnomah County, Oregon. The Oregon Department of Transportation (ODOT) is the designated non-Federal representative of the FHWA and is responsible for the project design and construction management.

On May 22, 2003, NOAA Fisheries sent to the FHWA, a request for additional information with regard to the proposed Kellogg Creek fish ladder improvements design. The request information was needed to adequately evaluate the expected hydraulic characteristics of the design relative to fish passage conditions and complete the consultation process. On May 22, 2003, NOAA Fisheries received a letter including the necessary requested additional information on the proposed Kellogg Creek fish ladder design.

In the May 12, 2003, letter and BA, the FHWA determined that the following four listed evolutionarily significant units (ESUs) of Columbia basin salmonids may occur within the project area: Lower Columbia River (LCR) steelhead (*Oncorhynchus mykiss*), Upper Willamette River (UWR) steelhead, LCR chinook salmon (*O. tshawytscha*), and UWR chinook salmon. Subsequently, the FHWA determined that the proposed action is "likely to adversely affect" (LAA) LCR steelhead, UWR steelhead, LCR chinook salmon, and UWR chinook salmon. LCR steelhead were listed as threatened on March 19, 1998 (63 FR 13347), UWR steelhead were listed as threatened on March 25, 1999 (64 FR 14517), LCR chinook salmon and UWR chinook salmon were listed as threatened on March 24, 1999 (64 FR 14308). The FHWA determined that the proposed action may adversely effect EFH for chinook or coho salmon.

The objective of this consultation is to determine whether the proposed action is likely to jeopardize the continued existence of the four listed ESUs of Columbia basin salmonids described above, and to explain why NOAA Fisheries believes the proposed action will adversely effect EFH.

This document is based on the information presented in the BA, Hydraulics Report, additional information provided on the fish ladder improvement design, site visits, and discussions with ODOT, the Oregon Department of Fish and Wildlife (ODFW), and project consultants.

## 1.2 Proposed Action

The proposed action includes repair and improvement of fish passage performance at the existing Kellogg Creek fish ladder at the stream crossing of Kellogg Creek and Highway 99E. The

project BA includes a set of minimization and avoidance measures (section 6.2) and conservation measures (section 7.0) or best management practices (BMPs) designed to minimize adverse effects to steelhead, chinook salmon, and their habitats. These BMPs are described on pages 21 and 28-32 of the BA. Specific BMPs for in-water work, fish ladder repair and improvement, design and construction, vegetation removal, equipment and materials staging, erosion control, stream diversion, intake screening for temporary water management, sediment transport, vehicle fueling and fuel storage, hazardous materials, and site-specific conservation measures are included. NOAA Fisheries regards these BMPs as integral components of the project and considers them to be part of the proposed action.

Direct effects to listed species may occur at the project sites and may extend upstream or downstream based on: (1) The potential for impairing or improving fish passage; (2) any change to stream hydraulics; (3) sediment and pollutant discharge; (4) the risk of chemical contamination of the aquatic environment; and (5) the extent of riparian habitat modifications. As such, the action area for the proposed activities includes the immediate watershed where the proposed action will occur, and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term. For the purposes of this Opinion, the action area is defined as the streambed and streambank of Kellogg Creek, extending 3 meters (m) upstream of the fish ladder, 30 m downstream of the fish ladder, and a 50 m buffer surrounding the fish ladder, encompassing the potential equipment access disturbance area.

All in-water work activities will occur during the Oregon Department of Fish and Wildlife's (ODFW) preferred in-water work timing guideline[1] of July 1 through September 30. Any extensions or alterations to this in-water work timing will require concurrence from NOAA Fisheries.

### 1.2.1 Staging and Construction Access

The proposed action includes the staging of construction equipment and materials at either an existing gravel parking area to the south of the fish ladder or the paved boat ramp parking area to the north of the fish ladder or both. No hazardous material or vehicle maintenance will occur within 45 m of any wetted channels. Stationary equipment such as generators or other non-mobile equipment may be within 45 m of wetted channel if adequate containment measures are in place to prevent spills and contamination of action area.

Construction of a temporary entrance and work pad will be necessary between the boat ramp parking lot and the Kellogg Creek channel. Heavy construction equipment such as backhoes, graders, excavators, dump trucks, track vehicles, or other similar equipment will access the fish ladder and Kellogg Creek stream channel via this access area following dewatering of the isolated work area.

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[1] 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).

### 1.2.2 In-water Work Area Isolation

The proposed action includes isolation and dewatering of the work area to make the repairs and improvements to the fish ladder in the dry, and to minimizing potential take of fish and potential effects to fish habitat. The isolated work area will encompass the area from the upstream end of the temporary diversion at the fish ladder raceway, downstream to a coffer dam constructed below the existing structure and access area. A gravity-fed diversion pipe will be used to pass the flowing water of Kellogg Creek around the isolated work area. Screened pumps may by used for short periods during set up and removal of the diversion system, or as needed to assure that flowing water is maintained to the downstream reach of Kellogg Creek at all times. A detailed Temporary Water Management Plan (TWMP) will be developed with the contractor or ODOT maintenance manger to ensure best management practices are incorporated and to avoid and minimize effects to fish and fish habitat.

Any remaining creek water within the isolated work area and fish ladder will be pumped out to dewater the work area. Before and/or during implementation of the TWMP, fish rescue and salvage will occur by a qualified fish biologist using an electofisher, seine nets, blocknets, dipnets, or any combination of methods necessary to effectively remove trapped fish while minimizing harm to listed species. Any necessary electrofishing activity will be conducted following NOAA fisheries' electrofishing guidelines.[2] Any listed fish removed from isolated work area will be released into Kellogg Creek upstream of the fish ladder, downstream of the fish ladder, into the confluence of Kellogg Creek and the Willamette River, or into Johnson Creek depending on water quality conditions and best professional judgement of the fish rescue and salvage biologist at the time. The goal is to minimize harm of listed fish.

### 1.2.3 Fish Ladder Repairs and Improvements

The proposed action includes the repair of various small cracks and fissures that currently leak water out of the fish ladder and limit the ladder's effectiveness during low water periods. The proposed action also includes minor structural changes to maximize the beneficial hydraulic characteristics of the fish ladder during low and high flows. Structural changes include: (1) Flow control within the ladder; (2) extension of, and reorientation, of the ladder entrance closer to the spillway; (3) excavation of the bedrock at, and along, the new entrance; (4) construction of a debris-deflecting device; (5) raising the sidewalls of the structure; and (6) reconstruction of the existing steps to provide uniform step heights. Within the isolated and dewatered area, general concrete construction procedures will be employed to facilitate these repairs and improvements. Concrete curing time will be accelerated with the use of rapid cure agents and any water contaminated by green concrete or other pollutants will be pumped into a settling pond to avoid exposure to the aquatic environment.

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[2] NMFS (National Marine Fisheries Service), *Backpack Electrofishing Guidelines* (2000) (http://www.nwr.noaa.gov/1salmon/salmesa/pubs/electrog.pdf).

# 2. ENDANGERED SPECIES ACT

## 2.1 Biological Opinion

### 2.1.1 Biological Information

Essential features of salmonid habitat required for the survival and recovery of listed species are water quality, water quantity, water temperature, water velocity, substrate, cover/shelter, food, space, and safe passage conditions (NMFS 1996). Together, these factors determine the biotic composition, structure, function, and stability of aquatic and riparian ecosystems and their ability to support the biological requirements of the species (Spence *et al.* 1996).

Pacific anadromous salmonid populations in the Pacific Northwest have evolved under the unimpaired flow regimes historically provided by their natal streams. The flow regimes reflect the dynamic character of flowing water systems, which is determined by the quantity, timing and natural variability of stream flow. These characteristics drive many of the physical processes in watersheds that are important to salmonid survival and conservation. Unimpaired flow regimes benefit salmonids in two critical ways: (1) They provide temporally and spatially appropriate water quantities to support specific life stages; and (2) they ensure self-sustaining ecosystem processes by which salmonid habitat is created and maintained over time.

Dynamic hydraulic, geomorphic, and ecologic processes must be maintained to provide salmonids a high probability of access to sufficient quantities of quality habitats for timely and successful completion of each and every life stage in freshwater (Bisson *et al.* 1997). However, given inter-annual hydrologic variability, even under an unimpaired flow regime, the quantity and quality of freshwater habitat necessary to obtain food and grow, escape predation, resist disease, migrate, and survive extreme environmental events is highly variable and can readily become limiting (Bjornn and Reiser 1991). Stream-rearing salmonids must survive extended periods in freshwater through winter and summer rearing bottlenecks (Bjornn and Reiser 1991). In addition, environmental conditions during extensive downstream and upstream migrations during juvenile and smolt life stages and again during adult and pre-spawning life stages can also significantly limit survival.

### 2.1.2 Evaluating Proposed Action

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). NOAA Fisheries must determine whether the action is likely to jeopardize the listed species. This analysis involves the initial steps of defining the biological requirements and current status of the listed species, and evaluating the relevance of the environmental baseline to the species' current status. Subsequently, NOAA Fisheries 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, NOAA Fisheries must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action; (2) the environmental baseline; and

(3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NOAA Fisheries finds that the action is likely to jeopardize the listed species, NOAA Fisheries must identify reasonable and prudent alternatives for the action. For the proposed action, NOAA Fisheries' jeopardy analysis considers direct or indirect mortality of fish attributable to the action.

### 2.1.3 Biological Requirements

The first step in the method NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed salmon is to define the biological requirements of the species most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species by taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list LCR steelhead, UWR steelhead, LCR chinook salmon, and UWR chinook salmon for ESA protection and also considers new data available that are relevant to the determination.

The relevant biological requirements are those necessary for LCR steelhead, UWR steelhead, LCR chinook salmon, and UWR chinook 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 environment.

For this consultation, the biological requirements are habitat characteristics that function to support successful spawning, rearing and migration. These involve adequate fish passage, water quality, water quantity, substrate, shade and cover. Because the current status of the LCR steelhead, UWR steelhead, LCR chinook salmon, and UWR chinook salmon, based upon their risk of extinction, has not significantly improved since the species were listed, adverse impacts to these biological requirements have the potential to be significant.

### 2.1.4 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 (bankline, adjacent riparian zone, and aquatic area) to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02).

The project is at the mouth of Kellogg Creek. Kellogg Creek flows into the Willamette River in Milwaukie, Oregon. The headwaters are in Clackamas County, just west of I-205. The largest tributary to Kellogg Creek is Mt. Scott Creek. Mt. Scott Creek originates in springs northeast of Happy Valley, flows southwesterly through Happy Valley, then turns west and flows between Mt. Scott and Mt. Talbert. Several minor tributaries enter the creek in its upper reaches. Mt.

Scott Creek flows through North Clackamas Central Park and joins Kellogg Creek 3.2 kilometers (km) or 2.0 miles (mi) above its confluence with the Willamette River.

Willamette River Basin

The Willamette River, a tributary of the Lower Columbia River, drains an area of approximately 30,000 square km (11,500 square mi). The basin is roughly rectangular in shape with a north-south length of approximately 241 km (150 mi), an east-west width of approximately 121 km (75 mi), and a channel length of 497 km (309 mi). Elevations in the basin range from over 3,048 m (10,000 ft) in the Cascade Range to less than 3 m (10 ft) at the confluence with the Columbia River.

Vegetation assemblages found in the Willamette Valley include deciduous forest, coniferous forest, grasslands and riparian communities. The lower Willamette riparian corridor consists of deciduous trees such as red alder (*Alnus rubra*), black cottonwood (*Populus balsamifera*), bigleaf maple (*Acer macrophyllum*), and willow (*Salix spp.*) mixed with coniferous trees such as western red cedar (*Thuja plicata*) and Douglas-fir (*Pseudotsuga menziesii*) (ODFW 1992). Where native vegetation has been disturbed or removed, the riparian vegetation consists of grasses, Himalayan blackberry (*Rubus discolor*), English ivy (*Hedra helix*) and other species. Climatic conditions include dry, moderately warm summers and wet, mild winters.

Although there are no dams on the mainstem Willamette River, the U.S. Army Corps of Engineers (USACE) has constructed 13 reservoirs within the basin, 11 of which have flood control functions (WRBTF 1997). Flood control dams modify river flow in approximately 20% of the basin (WRBTF 1997). Peak flows in the mainstem Willamette River have been reduced by 30 to 50% and summer flows have been augmented to approximately double historical flows (WRBTF 1997). The mean annual flow of the Willamette River is approximately 680 cubic m per second (24,010 cubic ft per second) with winter flows of approximately 1,800 cubic m per second (63,570 cubic ft per second) and summer flows of approximately 250 cubic m per second (8,830 cubic ft per second) (Hughes and Gammon 1987).

Many segments of the Willamette River basin are currently listed on the Oregon Department of Environmental Quality (ODEQ) 303(d) List of Water Quality Limited Water Bodies. The segment of the mainstem Willamette River between the confluence with the Columbia and Willamette Falls, which includes the project area, is currently listed for bacteria (fecal coliform), temperature, and toxics (mercury levels) violations (ODEQ 2002).

Kellogg Creek Watershed

Kellogg Creek joins the Willamette River 29 km (18 mi) upstream from its confluence with the Columbia River. Kellogg Creek is a third order stream draining approximately 1,220 hectares (ha) or 3,014 acres (ac) in Clackamas County, Oregon. Land uses within the watershed include commercial, light industrial, urban and residential. Its headwaters are in Clackamas, Oregon, just west of I-205. Land use along the majority of the stream is primarily residential.

The Kellogg Creek watershed is a mix of natural and urbanized vegetation. Native trees within the watershed include Douglas-fir, western hemlock (*Tusuga heterophylla*), big leaf and vine maple, red alder, Oregon ash (*Fraxinus latifolia*), black cottonwood, and western red cedar. Native shrubs include Oregon grape (*Berberis aquifolium*), pacific and red osier dogwood (*Cornus* spp.), trailing blackberry (*Rubus ursinus*) and willow species. The native ground cover species within the watershed include various species of fern, sedges (*Carex* ssp.), orchard grass (*Dactylis glomerata*), red fescue (*Festuca rubra*), and other grass species. Reed canarygrass (*Phalaris arundinacea)*, an exotic species, has invaded many of the wetlands in the watershed (Montgomery Watson 1996).

The Kellogg Creek watershed has geographically distinct areas that have different hydrologic characteristics. These areas include steeper portions, low-lying, flat areas, and "bowl" shaped areas in Milwaukie. The steeper areas drain primarily well defined channels, streams, ditches, and culverts (Montgomery Watson 1996). Sediments are easily washed off this steep terrain. Velocities of stormwater coming from such areas tend to be high with high, early peak flows following storm events.

The low-lying areas in the Kellogg Creek watershed drain via open channels/ditches, streams, culverts, storm sewers, and dry wells. The relatively flat slopes slow runoff rates and cause ponding and flooding in several areas. The "bowl" shaped areas are formed by ridges and depressions, leaving no natural overland routes for stormwater to drain out of the system. Flooding is not a problem in this area because soils and the underlying geologic formations tend to have moderate infiltration rates (Montgomery Watson 1996).

Timber harvest, agriculture, and urbanization have impacted streams in the Kellogg Creek watershed. Paved road density is very high. The land adjacent to the channel is mostly residential with areas of mixed-commercial and residential, road and railroad corridors, and open space (Montgomery Watson 1996). The low degree of habitat complexity stems in part, from past human activities within the watershed.

The majority of the riparian canopy within the watershed consists of mature deciduous and coniferous trees and provides good shading to the stream channel with an overall canopy density rating of 75 to 100%. Road crossing corridors and residential land use are the exception where the canopy has been thinned or removed. A mixture of mature red alder, black cottonwood, Oregon ash, willow, western red cedar, and Douglas-fir form the dominant canopy. Residential landscaping has thinned the canopy vegetation and removed much of the understory vegetation and extensive residential landscaping has encroached upon the riparian width. Grasses, blackberries (native and exotic), and shrubs dominate the bankside vegetation.

Fish passage is a major issue in the Kellogg Creek watershed. Kellogg Lake is impounded by a bulkhead under the Hwy 99 bridge that has been classified as a temporal barrier to fish passage because it impairs passage seasonally during low flows. ODFW biologists concluded that the fish ladder at the impoundment is probably impassable at low flows but may provide some passage at higher flows. However, it is believed that the structure does not provide fish passage

at the highest of flows. Several culverts on Kellogg and Mt. Scott Creeks may also be marginally passable to fish or passable only at certain flows (ODFW 1999). Other culverts on these creeks are probably not passable to fish due to their height above the active channel, extreme length, or low flow. In addition to the culverts, small dams and weirs, screened and unscreened pumps, and diversions are present throughout Kellogg and Mt. Scott Creeks. Mt. Scott Creek at I-205 was recently retrofitted with baffles to reduce flow velocities and create resting pools for migrating fish. A non-functional fish ladder on Mt. Scott Creek at Sunnyside Road is being replaced by a bridge.

The streams within the Kellogg Creek watershed, like those of other watersheds in northern Clackamas County, exhibit a low degree of habitat complexity (ODFW 1999). The creeks have significant amounts of gravel and cobble in most reaches; therefore, the availability of adequate spawning substrate does not appear to be a factor limiting salmonids in these streams (ODFW 1999). However, the degree to which gravel and cobble is embedded in silt and fine organic matter is not known. Glides comprise the largest proportional surface area through Kellogg Creek (ODFW 1999). The streams generally lack secondary channels, undercutting, and large woody debris. Little instream structure exists for summer rearing and winter refuge habitats. Fish cover is primarily limited to boulders and pool depth. Although depths are generally shallow, the Mt. Scott Creek canyon immediately upstream of the I-205 culvert contains the best remaining fish habitat of the stream system. Nevertheless, large amounts of silt and clay can limit spawning success of salmonids in this area (ODFW 1999).

Kellogg Lake

Kellogg Lake comprises approximately 4.8 ha (12 ac) of water impounded by the Hwy 99 bridge dam. The lake functions as a shallow warm water habitat that extends 1.2 km (0.75 mi) into Kellogg Creek. Anecdotal accounts of exotic species present include nutria (*Myocastor coypus*), carp (*Cyprinus carpio*), yellow water-flag (*Iris pseudacorus*), and Himalayan blackberry (MWH 2001).

Kellogg Lake has a drainage area of 38.3 square km (14.8 square mi). The surface elevation is 2 m (8 ft) above sea level. Water depth within the lake ranges from 0.6 to 2.4 m (2 to 8 ft). The Willamette River has the potential to flood the lake during periods of extreme high water. Water quality and fish habitat data are not available for Kellogg Lake. Adult salmon, steelhead trout, and cutthroat trout have been documented above the fish ladder and culvert under Hwy 99 indicating that it is passable when Willamette River water elevations are high (ODFW 1999).

Action Area

The project site is approximately 38 m (125 ft) upstream of the Kellogg Creek/Willamette River confluence. As such, the Willamette River heavily influences the portion of Kellogg Creek within the action area. In addition, the Kellogg Lake impoundment and Highway 99 embankment have significantly affected the creek's channel, substrates and flow within the action area. The creek's banks have been heavily eroded and are armored with riprap and other materials. The active channel of the creek within the action area significantly fluctuates given

the seasonal influence of the Willamette River. As a result, the existing fish ladder is often well outside the attraction zone of migrating fish during extreme high and low flows.

The south bank of Kellogg Creek within the action area is predominantly vegetated with English ivy, Himalayan blackberry, purple loosestrife, jewelweed, lady's thumb and big deervetch. The north bank has minimal vegetation including Himalayan blackberry, vine maple, English ivy, and Oregon ash shrubs. Additionally, a few riparian trees, primarily black cottonwood, are present. However, these trees provide little shading and nutrient input to the creek.

The reach of Kellogg Creek from river kilometer (Rkm) 0 to 8 (river mile [Rm] 0 to 5), including the action area, is currently listed on the Oregon Department of Environmental Quality (ODEQ) 303(d) List of Water Quality Limited Water Bodies for E. coli violations (ODEQ 2002).

### 2.1.5 Analysis of Effects

#### 2.1.5.1 Effects of Proposed Action

Creeks and rivers are dynamic systems that naturally alter their courses in response to many physical processes. Roadways, bridges 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. The structural hardening also results in impacts to the waterway. The existing Highway 99E Kellogg Creek crossing and subsequent fish ladder have fully hardened the stream bed and banks and have disrupted natural ecological processes including, but not limited, to bedload transport, debris transport, and movement of aquatic organisms.

Sedimentation

Potential impacts to listed salmonids from the proposed action 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 Northcote 1985, 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 piscivorus 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, Birtwell *et al.* 1984, Scannell 1988). Salmonids have been observed to move laterally and downstream to avoid turbid plumes (McLeay *et al.* 1984, 1987, Sigler *et al.* 1984, Lloyd 1987, Scannell 1988, Servizi and Martens 1991). 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 1988).

Fish that remain in turbid, or elevated TSS, waters experience a reduction in predation from piscivorus 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 (Bjornn 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).

Excavation in the stream channel associated with the fish ladder repairs and improvements in the Kellogg Creek channel may elevate the risk for turbidity and sediment transport within the action area. Because the potential for turbidity should be localized and brief, the probability of direct mortality is negligible. In-water work timing during the preferred in-water work timing period of July 1 through September 30, work area isolation, and fish removal will be employed as necessary, depending on presence of fish and/or flowing water to minimize the risk from turbidity and sediment transport during in-water work activities.

Chemical Contamination

As with all construction activities, accidental release of fuel, oil, uncured concrete, and other contaminants may occur. Operation of the back-hoes, excavators, and other equipment requires the use of fuel, lubricants, *etc.*, which, if spilled into the channel of a waterbody 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). Leakage or seepage in associated with the pouring of uncured concrete mix into fabricated forms can contaminate waterbodies, alter water chemistry, and harm or kill aquatic organisms. 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).

Excavation and construction activities associated with the fish ladder repairs and improvements in the stream channel will elevate the risk for chemical contamination of the aquatic environment within the action area. Because the potential for chemical contamination should be localized and brief, the probability of direct mortality is negligible. In-water work timing during the preferred in-water work timing period of July 1 through September 30, work area isolation, and fish removal will be employed as necessary, depending on presence of fish and/or flowing water to minimize the risk from chemical contamination during in-water work activities. In addition, the contractor or ODOT Maintenance Manager will be required to develop, implement, and monitor a site-specific pollution control plan in an effort to further minimize risk to the aquatic environment.

Riparian Vegetation and Stream Temperature

Woody riparian vegetation provides large wood to the stream, which encourages the creation of rearing and spawning areas. Riparian vegetation also provides water quality functions (*e.g.* temperature control and nutrient transformation), bank stability, detritus (insect and leaf input, small wood for substrate for insects), microclimate formation, floodplain sediment retention and vegetative filtering, and recharge of the stream hyporheic zone. Only noxious weeds such as himalayan blackberry and english ivy would be removed from the action area as a result of the proposed action.

Although the potential exists for a slight, short-term increase in water temperature as a result of increased solar exposure, the revegetation of disturbed areas with native vegetation would increase the ability of the riparian area to support natural stream processes, including processes essential to supporting salmon, resulting in long-term, beneficial effects.

Fish Rescue, Salvage and Relocation

As a result of the proposed action, fish ladder repair and improvement activities at the Kellogg Creek fish ladder may require direct handling of listed salmonids during fish salvage and removal. Direct and delayed mortality of LCR steelhead, UWR steelhead, LCR chinook salmon, or UWR chinook salmon juveniles from capture and relocation stress could occur during fish salvage and removal.

Fish Passage

Although downstream fish passage may be temporarily impaired by pumping Kellogg Creek water around the isolated work area for brief periods during fish ladder repair and improvement activities, the proposed action will ultimately result in improved year-round fish passage conditions for both adult and juvenile salmonids and native fishes, including LCR steelhead, UWR steelhead, LCR chinook salmon, and UWR chinook salmon within the action area.

Although the proposed action would not adequately address all aspects of desired fish passage performance over the long-term, substantial short-term beneficial effects to fish passage are expected to persist at the Kellogg Creek fish ladder, within the action area.

#### 2.1.5.2 Interrelated and Interdependent Actions

Interrelated actions include effects from actions that are part of the larger action and that depend on the larger action for justification. Interdependent actions are defined as actions with no independent utility apart from the proposed action. NOAA Fisheries is not aware of any interrelated or interdependent actions associated with the proposed action.

#### 2.1.5.3 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.

NOAA Fisheries 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. NOAA Fisheries assumes that future private and state actions will continue at similar intensities as in recent years.

### 2.1.6 Conclusion

NOAA Fisheries has determined that, based on the available information, the proposed action is not likely to jeopardize the continued existence of LCR steelhead, UWR steelhead, LCR chinook salmon, or UWR chinook salmon. NOAA Fisheries 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. NOAA Fisheries applied its evaluation methodology to the proposed action and found that it could cause slight, short-term degradation of anadromous salmonid habitat due to increases in sedimentation, turbidity, chemical contamination, and temperature. Furthermore, NOAA Fisheries expects that construction-related effects and work isolation activities could alter normal feeding and sheltering behavior of juvenile LCR steelhead, UWR steelhead, LCR chinook salmon, or UWR chinook salmon, should any be present in the action area during the proposed action. NOAA Fisheries expects some direct or delayed mortality of juvenile LCR steelhead, UWR steelhead, LCR chinook salmon, or UWR chinook salmon as a result of fish rescue, salvage and relocation activities should any be present in the action area during the proposed action. NOAA Fisheries expects beneficial riparian and fish passage effects as a result of the fish ladder repair and improvements and riparian revegetation of disturbed areas.

NOAA Fisheries' conclusions are based on the following considerations: (1) Most of the proposed work will occur isolated from, or outside of the flowing waters of Kellogg Creek (*i.e.*, in the dry); (2) in-water work will occur during the ODFW-preferred in-water work period of July 1 through September 30, which NOAA Fisheries expects to minimize the likelihood of LCR steelhead, UWR steelhead, LCR chinook salmon, and UWR chinook salmon presence in the action area due to low flow conditions; (3) any increases in sedimentation, turbidity, or chemical contamination in the project reach of Kellogg Creek will be short-term and minor in scale, and would not change or worsen existing conditions for stream substrate in the action area; (4) long-term, beneficial effects will result from the proposed repair and improvements to the existing Kellogg Creek fish ladder; (5) the proposed action is not likely to impair properly functioning habitat, appreciably reduce the functioning of already impaired habitat, or retard the long-term progress of impaired habitat toward proper functioning condition essential to long-term survival and recovery at the population ESU scale.

### 2.1.7 Reintiation of Consultation

This concludes formal consultation on the Kellogg Creek Fish Ladder Improvement Project. As provided in 50 CFR 402.16, reintiation 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 reintiation of consultation.

## 2.2 Incidental Take Statement

Section 9 and rules promulgated under section 4(d) 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. "Harass" is defined as actions that create the likelihood of injuring listed species to by annoying it 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 listed 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 to implement the reasonable and prudent measures.

### 2.2.1 Amount or Extent of the Take

NOAA Fisheries anticipates that the actions covered by this Opinion are reasonably certain to result in incidental take of LCR steelhead, UWR steelhead, LCR chinook salmon, and UWR chinook salmon because of increased sedimentation, turbidity, chemical contamination, or temperature increases during in-water work. Handling of juvenile steelhead and chinook salmon during the work isolation process may result in incidental take of individuals if adequate water quantity and quality allows juvenile salmonids to be present during the construction period. Based on estimates provided in the BA, NOAA Fisheries anticipates handling of up to 20 individuals, of which, up to two juvenile steelhead or chinook salmon may be killed as a result of the fish rescue, salvage and relocation activities covered by this Opinion. Any remaining incidental take resulting from harm is largely unquantifiable, and NOAA Fisheries does not expect it to be measurable in the long term. The extent of authorized take is limited to LCR steelhead, UWR steelhead, LCR chinook salmon, and UWR chinook salmon in Kellogg Creek within the action area as specified in section 1.2 of this Opinion.

### 2.2.2 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 contractor 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(a)(2) may lapse.

NOAA Fisheries 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 fish ladder repairs and improvements by directing the contractor to use an approach that maximizes ecological functions.

2. Minimize the likelihood of incidental take from activities involving fish ladder repairs and improvements, 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 (fish ladder repairs and improvements) are isolated from flowing water.

4. Complete a comprehensive monitoring and reporting program to ensure implementation of these conservation measures are effective in minimizing the likelihood of take from permitted activities.

### 2.2.3 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 (fish ladder repair and improvement actions), the FHWA shall ensure that:

    a. The finished fish passage improvements will include a low flow thalweg channel with a channel invert not greater than elevation 4.84 feet relative to weir 03 and not less than 12-15 inches in width from the new ladder entrance to weir 03.
    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.
    c. The bankline will be revegetated using appropriate native vegetation.

2. To implement reasonable and prudent measure #2 (fish ladder repairs and improvements, temporary access roads, use of heavy equipment, earthwork, site restoration), 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 in-water work period of July 1 - September 30.
    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. Measures will be taken 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 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. Before 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.
   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 or as otherwise approved by NOAA Fisheries.
   ii. Material removed during excavation will only be placed in locations where it cannot enter streams or other waterbodies.
   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 seven 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, except those vehicles and stationary equipment described in section 1.2.1 of this Opinion that require refueling within 150 horizontal feet of Kellogg Creek or the Willamette River.

[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.

ii. All vehicles operated within 150 feet of any stream or waterbody 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, except those vehicles described in section 1.2.1 of this Opinion that require storage within 150 horizontal feet of Kellogg Creek or the Willamette River.

g. Site restoration. Site restoration and cleanup, including protection of bare earth by seeding, planting, mulching and fertilizing, will be 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.

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% survival or 80% cover success after five years. For the purposes of this Opinion, planting success criteria will be evaluated for all tubeling/seedling plantings and those willow cutting which survive one year after construction.

(1) If success standard has not been achieved after five years, the applicant will submit an alternative plan to NOAA Fisheries. The alternative plan will address temporal loss of function.

(2) Plant establishment monitoring will continue and monitoring reports will be submitted to NOAA Fisheries on an annual basis 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 (fish ladder repairs and improvements) 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, where water quality is adequate and predation of recovering fish will be avoided or minimized.

v. The FHWA shall ensure that the transfer of any ESA-listed fish to third parties other than NOAA Fisheries personnel receives prior approval from NOAA Fisheries.

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 before project seining activity.

vii. The FHWA must allow NOAA Fisheries 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 fishery 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 described in NOAA Fisheries' electrofishing guidelines.[4]

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 and video footage of the project to NOAA Fisheries 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, and

(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 or other fish rescue and salvage activity including:

(1) The name and address of the supervisory fish biologist,

[4] NMFS (National Marine Fisheries Service), *Backpack Electrofishing Guidelines* (December 1998) (http://www.nwr.noaa.gov/1salmon/salmesa/pubs/electrog.pdf).

(2) methods used to isolate the work area and minimize disturbances to fish 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, and
(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) planting composition and density, and
(3) a plan to inspect and, if necessary, replace failed plantings and structures for a period of five years, including the compensatory mitigation site.

v. Video documentation of environmental conditions at the project site before, during and after project completion.
(1) Video footage and observations of hydraulic characteristics relevant to fish passage performance measures including but not limited to: observable water velocities, jump heights, observable turbulence, orientation of ladder entrance relative to spillway attraction, ladder entrance location and accessability relative to upstream migrants. Clearly marked measuring devices will be used to indicate proportions.
(2) Video footage will include general project location views and close-ups showing details of the project area and project, including pre- and post-construction.
(3) Each video footage will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the subject.
(4) 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. On an annual basis, for five years after completing the project, the FHWA shall ensure submittal of a monitoring report and video footage of the project to NOAA Fisheries describing the FHWA's success in meeting their fish passage and site restoration goals. 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, and

(3) the FHWA contact person.

ii. Site restoration. Documentation of the following conditions:
   (1) Any changes in planting composition and density.
   (2) A plan to inspect and, if necessary, replace failed plantings.

iii. A narrative assessment of the effects of the project on fish passage and natural stream function.

iv. Video footage of environmental conditions at the project site after project completion as they relate to fish passage and site restorations goals as described above.
   (1) Video footage and observations of hydraulic characteristics relevant to fish passage performance measures including but not limited to: observable water velocities, jump heights, observable turbulence, orientation of ladder entrance relative to spillway attraction, ladder entrance location and accessability relative to upstream migrants during site visits at least once during high water and once during low water conditions each year. Clearly marked measuring devices will be used to indicate proportions.
   (2) Video footage will include general project location views and close-ups showing details of the project and project area and hydraulic character of the fish ladder.
   (3) Each video footage will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the subject.
   (4) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, as they relate fish passage and site restorations goals.

c. Submit monitoring reports to:

NOAA Fisheries
Oregon Habitat Branch, Habitat Conservation Division
**Attn: 2003/00554**
525 NE Oregon Street, Suite 500
Portland, OR 97232-2778

d. If a dead, injured, or sick endangered or threatened species specimen is located, initial notification must be made to NOAA Fisheries' Law Enforcement Office, Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, Washington 98661; phone: 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-STEVENS ACT

## 3.1 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 NOAA Fisheries 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 NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH.

- NOAA Fisheries 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 NOAA Fisheries provide a detailed response in writing to NOAA Fisheries 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 NOAA Fisheries, 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 NOAA Fisheries is required by Federal agencies undertaking, permitting or funding activity that may adversely affect EFH, regardless of its location.

## 3.2 Identification of EFH

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

## 3.3 Proposed Action

The proposed action is detailed above in section 1.2 of this document. For the purposes of this consultation, the action area is defined as the streambed and streambank of Kellogg Creek, extending 3 m upstream of fish ladder, 30 m downstream of the fish ladder, and a 50 m buffer surrounding the fish ladder, encompassing the potential equipment access disturbance area.. This area has been designated as EFH for various life stages of chinook salmon and coho salmon.

## 3.4 Effects of Proposed Action

As described in detail in section 2.1.5.1 of this document, the proposed activities may result in short-term, adverse effects to water quality (sedimentation, turbidity, chemical contamination, temperature). NOAA Fisheries expects short term adverse effects from increases in sedimentation, turbidity, chemical contamination and temperature within the action area. NOAA Fisheries expects beneficial. NOAA Fisheries expects beneficial effects from improved fish passage and hydraulic conditions at the Kellogg Creek fish ladder as a result of the proposed fish ladder repairs and improvements.

## 3.5 Conclusion

The proposed action will adversely affect the EFH for chinook and coho salmon.

## 3.6 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the MSA, NOAA Fisheries 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 2.2.2 and 2.2.3 are applicable to salmon EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH recommendations.

### 3.7 Statutory Response Requirement

Please note that the MSA (section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NOAA Fisheries 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 NOAA Fisheries, the agency must explain its reasons for not following the recommendation.

### 3.8 Supplemental Consultation

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

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