



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:
2002/01200

February 25, 2003

Mr. Lawrence C. Evans
U.S. Army Corps of Engineers
Attn: John Barco
Portland District, CENWP-CO-GP
P.O. Box 2946
Portland, OR 97208-2946

Re: Endangered Species Action Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation on the Trillium Creek Restoration Project by the City of West Linn, Trillium Creek, Willamette River, Clackamas County, Oregon (Corps No. 2002-00678)

Dear Mr. Evans:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) for the Trillium Creek Restoration Project by the City of West Linn, in Trillium Creek, a tributary to the Willamette River, Clackamas County, Oregon. NOAA Fisheries concludes in this Opinion that the proposed action is not likely to jeopardize Lower Columbia River or Upper Willamette River chinook salmon (*Oncorhynchus tshawytscha*) or Lower Columbia River steelhead (*O. mykiss*). Pursuant to section 7 of the ESA, NOAA Fisheries has included reasonable and prudent measures with non-discretionary terms and conditions that NOAA Fisheries believes are necessary and appropriate to minimize the potential for incidental take associated with this project.

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



Questions regarding this letter should be directed to Christy Fellas, of my staff, in the Oregon Habitat Branch at 503.231.2307.

Sincerely,

Michael R. Crouse

D. Robert Lohn
Regional Administrator

cc: Kristi Crowell, City of West Linn
Tom Melville, Oregon DEQ
Mike McCabe, Oregon DSL

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1. INTRODUCTION

1.1 Background

On September 27, 2002, the National Marine Fisheries Service (NOAA Fisheries) received a letter, dated September 25, 2002, from the Corps of Engineers (COE) requesting formal consultation on the issuance of a permit to the City of West Linn for channel restoration of Trillium Creek. In the letter and biological assessment (BA) the COE determined that Lower Columbia River and Upper Willamette River chinook salmon (*Onchorynchus tshawytscha*) and Lower Columbia River steelhead (*O. mykiss*) may occur within the project area. Based on adequate information received from the COE, NOAA Fisheries has prepared this biological opinion (Opinion). NOAA Fisheries has determined that the proposed project is “likely to adversely affect” (LAA) the listed species.

NOAA Fisheries has prepared this Opinion to address impacts to these species as a result of the proposed project. The objective of this Opinion is to determine whether the actions, including the proposed mitigation measures, are likely to jeopardize the continued existence of the above listed species.

1.2 Proposed Action

The City of West Linn proposes to recreate a 140-foot-long section of Trillium Creek that was illegally filled by a property owner in 1999. Two creek meanders will be re-established and native plants will be planted to restore the riparian area. Approximately 127 cubic yards will be excavated in order to create stream banks with a 3:1 slope from the existing banks with a 1:1 slope. Approximately 40 cubic yards of material will be used to fill the existing channel and 87 cubic yards will be disposed off site.

During construction, water will need to be pumped around the construction area. The pump will be screened to keep fish out of the pump. After construction, 25 boulders will be placed in clusters at the toe of the slope to help stabilize the banks and provide cover for fish. The new slopes will be planted with a mixture of sedge, shrubs and trees including the following species: slough sedge, soft rush, red osier dogwood, Pacific willow, Nootka rose, Red alder and Western red cedar. All disturbed side slopes and ground will be hydroseeded with native seeds to help with erosion control until plants are established.

2. ENDANGERED SPECIES ACT

2.1 Biological Opinion

2.1.1 Biological Information

Based on typical migration timing, NOAA Fisheries expects that adult chinook and steelhead may be present in the action area during construction. The action area is defined by NOAA Fisheries regulations (50 CFR 402) as “all areas to be affected directly or indirectly by the Federal action, and not merely the immediate area involved in the action.” For the proposed project, the action area is defined as the substrate, water, and bank immediately adjacent to the proposed enhancement work in Trillium Creek, and downstream to the limits of any visible turbidity resulting from construction activities. The essential habitat features necessary to support migration that this proposed project may affect are: Substrate, water quality (turbidity) and riparian vegetation. References for further background on listing status and biological information can be found in Table 1.

Table 1. References for Additional Background on Listing Status, Biological Information, and Protective Regulations for the ESA-Listed and Candidate Species Considered in this Consultation.

Species / ESU	Status	Protective Regulations	Biological Information
Chinook salmon (<i>O. tshawytscha</i>)			
Lower Columbia River	Threatened 3/24/00; 64 FR 14308	7/10/00; 65 FR 42422	Myers et al. 1998; Healey 1991
Upper Willamette River	Threatened 3/24/00; 64 FR 14308	7/10/00; 65 FR 42422	Myers et al. 1998; Healey 1991
Steelhead (<i>O. mykiss</i>)			
Lower Columbia River	Threatened 3/19/98; 63 FR 13347	7/10/00; 65 FR 42422	Busby et al. 1995; 1996

2.1.2 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). In conducting analyses of habitat-altering actions under section 7 of the ESA, NOAA Fisheries uses the following steps: (1) Consider the status and biological requirements of the species; (2) evaluate the relevance of the environmental baseline in the action area to the species' current status; (3) determine the effects of the proposed or continuing action on the species; (4) consider cumulative effects; and (5) determine whether the proposed action, in light of the above factors, is likely to appreciably reduce the likelihood of species survival in the wild. In completing this step of the analysis, NOAA Fisheries determines

whether the action under consultation, together with all cumulative effects when added to the environmental baseline, is likely to jeopardize the continued existence of the listed species. 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.

2.1.2.1 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed salmonids is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries 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, NOAA Fisheries starts with the determinations made in its decision to list the species for ESA protection and also considers new data available that is relevant to the determination.

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

For this consultation, the biological requirements are improved habitat characteristics that function to support successful spawning, rearing and migration. The current status of the listed species, based upon their risk of extinction, has not significantly improved since the species were listed.

2.1.2.2 Environmental Baseline

The Willamette River watershed covers a vast area (11,500 square miles) bordered on the east and west by the Cascades and the Pacific coast ranges. It drains from as far south as Cottage Grove, and flows north to its confluence with the Columbia River. The Willamette River watershed is the largest river basin in Oregon. It is home to most of the state's population, its largest cities, and many major industries. The watershed also contains some of Oregon's most productive agricultural lands and supports important fishery resources (City of Portland 2001).

The uplands (Coast and Cascade Ranges) receive about 80% of the precipitation falling on the Willamette River basin, and store much of this water as snow. Ecosystem productivity in these upland streams is relatively low, with aquatic insects gleaning much of their diet from material that falls into running water. In larger, slower tributaries, more plant material is produced in the stream itself. The mainstem supports a highly productive algal community that blooms as temperatures rise in the summer. Insects and some vertebrates feed on these plants, and many vertebrates, including salmonids, feed on stream-dwelling insects. Much of the habitat for Willamette River salmonids has been degraded by various land use practices or eliminated by

dams. Wild salmonid populations have declined precipitously over the last century in the Willamette River (WRI 1999).

Basin health has been affected in terms of water and habitat quality and quantity. Many native species have been adversely affected due to the introduction of non-native species, loss of habitat and habitat degradation, and contaminated waters which impede species' development. Some streams and rivers in the basin have high temperatures and insufficient flows during summer months, which adversely impact aquatic species such as salmon and steelhead. Low flows also reduce the ability of the river to dilute contaminants, the presence of which may lead to dangers for both aquatic species and humans. Such contaminants are often found with great frequency in the basin as a result of erosion from agricultural, industrial, urban and forested lands. Increased population and development have further compounded these problems, resulting in the loss of much critical habitat and increased pollution (WRI 1999).

The project area in Trillium Creek is currently a channelized creek with little or no vegetation present. Himalayan blackberries dominate the riparian vegetation that is present. Trillium Creek has a direct connection to the Willamette River and there are no known barriers to prevent fish access to the creek. In the current condition, Trillium Creek lacks a meandering channel, riparian vegetation and in-stream features to provide salmonid habitat.

2.1.3 Analysis of Effects

2.1.3.1 Effects of the Proposed Action

NOAA Fisheries expects that the effects of the proposed project will maintain each of the habitat elements over the long term (greater than two years). However, in the short term, NOAA Fisheries expects a temporary increase in sediment entrainment and turbidity, and disturbance of riparian and instream habitat. Fish may be killed or temporarily displaced during the in-water work. Restoration of Trillium Creek to a naturally-meandering channel and restoration of riparian vegetation is likely to provide long-term benefits to listed salmonids and other aquatic species due to the maintenance and restoration of functional habitat conditions.

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

To minimize the potential for increased turbidity and disturbance of fish, the in-water work will occur during the in-water work windows of July 1 to October 31 and December 1 to January 31. While no listed species have been identified in Trillium Creek during surveys, the creek has a direct connection to the Willamette River with no barriers to fish migration and is likely to provide off-channel habitat and refugia for listed salmonids. Water will be temporarily pumped

around the work area and the pump will be screened to exclude fish. NOAA Fisheries expects few, if any, listed species to be present in the project area during construction.

In the long term, the restoration of Trillium Creek will provide increased habitat functions from the vegetation and newly constructed meanders. Woody riparian vegetation provides large wood to the stream, which helps create pools needed for rearing and retains gravels to create and maintain 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, *etc.*), microclimate formation, sediment retention and filtering, and recharge of the stream hyporheic zone. The placement of boulders will increase pool depth and frequency. Overall, listed salmonids and other aquatic species will benefit from the restoration of Trillium Creek from a straight channel to a meandering creek with improved riparian vegetation.

2.1.3.2 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 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 effects to listed species than presently occurs. NOAA Fisheries assumes that future private and state actions influencing habitat conditions within the action area will continue at similar intensities as currently occurs.

2.1.4 Conclusion

After reviewing the current status of the listed species, the environmental baseline for the action area, the effects of the proposed habitat restoration, and cumulative effects, NOAA Fisheries has determined that the Trillium Creek Restoration Project, as proposed, is not likely to jeopardize the continued existence of listed species. This determination is based on the following considerations: (1) Most of the proposed work will occur outside of the flowing waters of Trillium 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 will minimize the likelihood of UWR chinook salmon or LCR chinook salmon or steelhead presence in the action area due to low flow and/or warm water conditions; (3) any increases in sedimentation and turbidity in the project reaches of Trillium 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 restoration of more natural stream conditions; and (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 the long-term survival and recovery at the population or ESU scale.

2.1.5 Conservation Recommendations

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of proposed actions on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. NOAA Fisheries has no additional conservation recommendations regarding the action addressed in this Opinion.

2.1.6 Reinitiation of Consultation

Consultation must be reinitiated if: (1) The amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded, (2) new information reveals effects of the action may affect listed species in a way not previously considered, (3) the action is modified in a way that causes an effect on listed species that was not previously considered or, (4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16). To reinitiate consultation, COE must contact the Oregon Habitat Branch of NOAA Fisheries, and refer to 2002/01200.

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 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

2.2.1 Amount or Extent of Take

NOAA Fisheries anticipates that the action covered by this Opinion is reasonably certain to result in the incidental take resulting from the disturbance and displacement from the use of equipment and temporary displacement of individuals due to elevated turbidity levels. Even though NOAA Fisheries expects some low level of non-lethal incidental take to occur due to the

action covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific amount of incidental take to the species itself. In instances such as these, NOAA Fisheries designates the expected amount of take as "unquantifiable." Based on the information provided by the COE and other available information, NOAA Fisheries anticipates that an unquantifiable amount of incidental take could occur as a result of the action covered by this Opinion. The extent of the take is limited to that resulting from turbidity associated with reconfiguring channel meanders in a 140 foot stretch of Trillium Creek and downstream to the limits of any visible turbidity.

2.2.2 Reasonable and Prudent Measures

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

1. Minimize incidental take from general construction by excluding unauthorized permit actions and applying permit conditions that avoid or minimize adverse effects to riparian and aquatic systems.
2. 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

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

1. To implement reasonable and prudent measure #1 (general conditions for construction, operation and maintenance), the COE shall ensure that:
 - a. Timing of in-water work. Work within the active channel will be completed between July 1 and October 31, unless otherwise approved in writing by NOAA Fisheries.
 - b. Cessation of work. Project operations will cease under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage.
 - c. Pollution and Erosion Control Plan. A pollution and erosion control plan will be prepared and carried out to prevent pollution related to construction operations. The plan must be available for inspection on request by COE or NOAA Fisheries.
 - i. Plan Contents. The pollution and erosion control plan must contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations.

- (1) Practices to prevent erosion and sedimentation associated with access roads, stream crossings, construction sites, borrow pit operations, haul roads, equipment and material storage sites, fueling operations and staging areas.
 - (2) A description of any hazardous products or materials that will be used for the project, including procedures for inventory, storage, handling, and monitoring.
 - (3) 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 the site, proposed methods for disposal of spilled materials, and employee training for spill containment.
 - ii. Inspection of erosion controls. During construction, all erosion controls must be inspected daily during the rainy season and weekly during the dry season to ensure they are working adequately.¹
 - (1) If inspection shows that the erosion controls are ineffective, work crews must be mobilized immediately to make repairs, install replacements, or install additional controls as necessary.
 - (2) Sediment must be removed from erosion controls once it has reached 1/3 of the exposed height of the control.
- d. Preconstruction activity. Before significant² alteration of the project area, the following actions must be completed:
 - i. Marking. Flag the boundaries of clearing limits associated with site access and construction to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.
 - ii. Emergency erosion controls. Ensure that the following materials for emergency erosion control are onsite.
 - (1) A supply of sediment control materials (*e.g.*, silt fence, straw bales³).
 - (2) An oil-absorbing floating boom whenever surface water is present.
 - iii. Temporary erosion controls. All temporary erosion controls must be in-place and appropriately installed downslope of project activity within the riparian area until site restoration is complete.
- e. Temporary access roads.
 - i. Existing ways. Existing roadways or travel paths must be used whenever possible, unless construction of a new way would result in less habitat take.

¹ "Working adequately" means no turbidity plumes are evident during any part of the year.

² "Significant" means an effect can be meaningfully measured, detected or evaluated.

³ When available, certified weed-free straw or hay bales must be used to prevent introduction of noxious weeds.

- ii. Steep slopes. Temporary roads built mid-slope or on slopes steeper than 30 percent are not authorized.
- iii. Minimizing soil disturbance and compaction. When a new temporary road is necessary within 150-feet⁴ of a stream, water body or wetland, soil disturbance and compaction must be minimized by clearing vegetation to ground level and placing clean gravel over geotextile fabric, unless otherwise approved in writing by NOAA Fisheries.
- f. Heavy Equipment. Use of heavy equipment will be restricted as follows:
 - i. Choice of equipment. When heavy equipment must be used, the equipment selected must have the least adverse effects on the environment (*e.g.*, minimally sized, rubber tired).
 - ii. Vehicle staging. Vehicles must be fueled, operated, maintained and stored as follows:
 - (1) Vehicle staging, cleaning, maintenance, refueling, and fuel storage must take place in a vehicle staging area placed 150 feet or more from any stream, water body or wetland.
 - (2) All vehicles operated within 150 feet of any stream, water body or wetland must be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected must be repaired in the vehicle staging area before the vehicle resumes operation. Inspections must be documented in a record that is available for review on request by COE or NOAA Fisheries.
 - (3) All equipment operated instream must be cleaned before beginning operations below the bankfull elevation to remove all external oil, grease, dirt, and mud.
- g. Site preparation. Native materials will be conserved for site restoration.
 - i. If possible, native materials must be left where they are found.
 - ii. Materials that are moved, damaged or destroyed must be replaced with a functional equivalent during site restoration.
 - iii. Any large wood⁵, native vegetation, weed-free topsoil, and native channel material displaced by construction must be stockpiled for use during site restoration.
- h. Earthwork. Earthwork (including drilling, excavation, dredging, filling and compacting) will be completed as quickly as possible.
 - i. Site stabilization. All disturbed areas must be stabilized, including obliteration of temporary roads, within 12 hours of any break in work

⁴ Distances from a stream or water body are measured horizontally from, and perpendicular to, the bankfull elevation, the edge of the channel migration zone, or the edge of any associated wetland, whichever is greater. "Channel migration zone" means the area defined by the lateral extent of likely movement along a stream reach as shown by evidence of active stream channel movement over the past 100 years, *e.g.*, alluvial fans or floodplains formed where the channel gradient decreases, the valley abruptly widens, or at the confluence of larger streams.

⁵ For purposes of this Opinion only, "large wood" means a tree, log, or rootwad big enough to dissipate stream energy associated with high flows, capture bedload, stabilize streambanks, influence channel characteristics, and otherwise support aquatic habitat function, given the slope and bankfull width of the stream in which the wood occurs. See, Oregon Department of Forestry and Oregon Department of Fish and Wildlife, *A Guide to Placing Large Wood in Streams*, May 1995 (www.odf.state.or.us/FP/RefLibrary/LargeWoodPlacemntGuide5-95.doc).

- unless construction will resume work within 7 days between June 1 and September 30, or within two days between October 1 and May 31.
- ii. Source of materials. Boulders, rock, woody materials and other natural construction materials used for the project must be obtained outside the riparian area.
 - i. Site restoration. All streambanks, soils and vegetation disturbed by the project are cleaned up and restored as follows:
 - i. Restoration goal. The goal of site restoration is renewal of habitat access, water quality, production of habitat elements (such as large woody debris), channel conditions, flows, watershed conditions and other ecosystem processes that form and maintain productive fish habitats.
 - ii. Streambank shaping. Damaged streambanks must be restored to a natural slope, pattern and profile suitable for establishment of permanent woody vegetation.
 - iii. Revegetation. Areas requiring revegetation must be replanted before the first April 15 following construction with a diverse assemblage of species that are native to the project area or region, including grasses, forbs, shrubs and trees.
 - iv. Pesticides. No pesticide application is allowed, although mechanical or other methods may be used to control weeds and unwanted vegetation.
 - v. Fertilizer. No surface application of fertilizer may occur within 50 feet of any stream channel.
 - vi. Fencing. Fencing must be installed as necessary to prevent access to revegetated sites by livestock or unauthorized persons.
2. To implement reasonable and prudent measure #2 (monitoring), the COE shall:
- a. Submit a monitoring report within 120 days of project completion describing the success meeting these conditions. Each project level monitoring report will include the following information.
 - i. Project identification
 - (1) Project name
 - (2) Project location, including any compensatory mitigation site(s), by 5th field HUC and by latitude and longitude as determined from the appropriate USGS 7-minute quadrangle map
 - (3) Agency contact person.
 - (4) Starting and ending dates for work completed
 - ii. Narrative assessment. A narrative assessment of the project's effects on natural stream function.

- iii. Photo documentation. Photo of habitat conditions at the project and any compensation site(s), before, during, and after project completion.⁶
 - (1) Include general views and close-ups showing details of the project and project area, including pre and post construction.
 - (2) Label each photo with date, time, project name, photographer's name, and a comment about the subject.
- iv. Other data. Additional project-specific data, as appropriate for individual projects.
 - (1) Work cessation. Dates work cessation was required due to high flows.
 - (2) A summary of pollution and erosion control inspections, including any erosion control failure, hazardous material spill, and correction effort.
 - (3) Site preparation.
 - (a) Total cleared area – riparian and upland.
 - (4) Site restoration.
 - (a) Finished grade slopes and elevations.
 - (b) Log and rock structure elevations, orientation, and anchoring (if any).
 - (c) Planting composition and density.
 - (d) A five-year plan to:
 - (i) Inspect and, if necessary, replace failed plantings to achieve 100% survival at the end of the first year, and 80% survival or 80% coverage after five years (including both plantings and natural recruitment).
 - (ii) Control invasive non-native vegetation.
 - (iii) Protect plantings from wildlife damage and other harm.
- v. Monitoring report. The monitoring report shall be submitted to:

National Marine Fisheries Service
Habitat Conservation Division
Attn: 2002/01200
525 NE Oregon Street, Suite 500
Portland, OR 97232

⁶ Relevant habitat conditions may include characteristics of channels, eroding and stable streambanks in the project area, riparian vegetation, water quality, flows at base, bankfull and over-bankfull stages, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.

3. MAGNUSON-STEVENSON ACT

3.1 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 104-267), established procedures designed to identify, conserve, and enhance EFH for those species regulated under a Federal fisheries management plan. Pursuant to the MSA:

- 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 (§305(b)(2)).
- NOAA Fisheries must provide conservation recommendations for any Federal or state action that would adversely affect EFH (§305(b)(4)(A)).
- Federal agencies must provide a detailed response in writing to NOAA Fisheries within 30 days after receiving EFH conservation recommendations. The response must 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 NOAA Fisheries EFH conservation recommendations, the Federal agency must explain its reasons for not following the recommendations (§305(b)(4)(B)).

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting this definition of EFH, “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 (50 CFR 600.10). Adverse effect means any impact which reduces quality and/or quantity of EFH, and may include direct (*e.g.*, contamination or physical disruption), indirect (*e.g.*, loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).

EFH consultation with NOAA Fisheries is required regarding any Federal agency action that may adversely affect EFH, including actions that occur outside EFH, such as certain upstream and upslope activities.

The objectives of this EFH consultation are to determine whether the proposed action would adversely affect designated EFH and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH.

3.2 Identification of EFH

Pursuant to the MSA the Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Federally-managed Pacific salmon: Chinook (*Oncorhynchus tshawytscha*), coho (*O. kisutch*), and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC 1999), 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, in part, on this information.

3.3 Proposed Action

The proposed action is detailed above in section 1.2 of this document. The action area includes Trillium Creek, a tributary of the Willamette River. 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 2.1.3 of this document, the proposed activity may result in short-term adverse effects to a variety of parameters. These adverse effects are turbidity from construction, and disturbance of riparian vegetation.

3.5 Conclusion

NOAA Fisheries believes that the proposed action will adversely affect the EFH for chinook salmon 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 to Federal agencies regarding actions which may adversely affect EFH. While NOAA Fisheries understands that the conservation measures described in the BA will be implemented by the COE, it does not believe that these measures are sufficient to address the adverse impacts to EFH described above. However, the terms and conditions outlined in section 2.2.3 are generally applicable to designated EFH for chinook salmon and coho salmon and address these adverse effects. Consequently, NOAA Fisheries incorporates them here as EFH conservation recommendations.

3.7 Statutory Response Requirement

Pursuant to the MSA (§305(b)(4)(B)) and 50 CFR 600.920(j), Federal agencies are required to provide a detailed written response to NOAA Fisheries' EFH conservation recommendations within 30 days of receipt of these recommendations. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity on EFH. In the case of a response that is inconsistent with the EFH conservation recommendations, the response must explain the reasons for not following the recommendations, including the scientific justification for any disagreements over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects.

3.8 Supplemental Consultation

The COE must reinstate EFH consultation with NOAA Fisheries if the proposed action is substantially revised in a manner that may adversely affect EFH, or if new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920(k)).

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