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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, PORTLAND DISTRICT
P.O. BOX 2946
PORTLAND, OREGON 97208-2946

January 30, 2013

REPLY TO
ATTENTION OF:
Operations Division
Regulatory Branch
Corps No.: NWP-2012-329

Mr. Herb Stahl
H.B. Farms
1485 N. Hoffman Road, Ritzville
Washington 99169

Mr. Carl St. Hillaire
Hillaire Brothers Hermiston Farm
84186 Hwy 37
Hermiston, Oregon 97838

Dear Mr. Stahl and Mr. Hillaire:

The U.S. Army Corps of Engineers (Corps) received your request for Department of the Army authorization to improve your pump intakes and conduct dredging activities. The project is located near Hermiston, Umatilla County, Oregon. The site is in Sections 7 and 8, Township 5 North, Range 30 East.

The project includes removal of 300 cy (0.04 acre) of accumulated sediments in front of and underneath the existing pumping station, the installation of a 72-inch diameter intake pipe at the Stahl Farm, and a 60-inch diameter pipe at the JSH farm. The new intakes will extend 180 feet farther into the Columbia River than the current intakes. Each pipe will be supported by pipe cradles (seven for Stahl H.B. pipe and six for JSH pipe). Each pipe cradle will be secured to the river bottom by a pair of 12.75-inch diameter steel piles (26 total) installed approximately 15 feet (or to refusal) into the substrate with an APE Model 50 vibratory hammer. All work will be completed during the in-water work window of January 1 and February 28 to reduce impacts to salmonids. The project is shown on the enclosed drawings (Enclosure 1).

This letter verifies that your project is authorized under the terms and limitations of Nationwide Permit (NWP) No. 3 (Maintenance Activities). Your activities must be conducted in accordance with the conditions found in the Portland District NWP Regional Conditions (Enclosure 2) and the NWP General Conditions (Enclosure 3). You must also comply with the Oregon Department of Environmental Quality (DEQ) Water Quality Certification Conditions (Enclosure 4), and the project specific conditions lettered (a) through (g) below. **Failure to comply with any of the listed conditions could result in the Corps initiating an enforcement action.**

a. Permittee shall notify the Regulatory Branch with the date the activities authorized in waters of the United States are scheduled to begin. Notification shall be sent by e-mail to cenwp.notify@usace.army.mil or mailed to the following address:

U.S. Army Corps of Engineers
CENWP-OD-GC
Permit Compliance, Umatilla County
PO Box 2946
Portland, Oregon 97208-2946

The subject line of the message shall contain the name of the county in which the project is located followed by the Corps of Engineers permit number.

b. Permittee shall perform all in-water work, including temporary fills or structures, during the in-water work window of January 1 to February 28 to minimize impacts to aquatic species unless coordinated with and subsequently approved by the Corps. We also draw your attention to Regional Condition 3.

c. The National Marine Fisheries Service (NMFS) issued a biological opinion (BO) for your project on December 20, 2012. All terms and conditions of the BO are terms and conditions of this authorization. You shall fully implement all terms and conditions from the NMFS BO (Enclosure 5).

d. The U.S. Fish and Wildlife Service (USFWS) issued a biological opinion for your project on January 3, 2012. All terms and conditions of the BO are terms and conditions of this authorization. You shall fully implement all terms and conditions from the NMFS BO (Enclosure 6).

e. Permittee shall ensure a Professional Archaeologist is onsite to monitor all ground-disturbing activities (sediment removal) within the permit area to ensure an archaeological site or cultural resource is not adversely affected.

f. Permittee shall immediately notify the Corps at the letterhead address if at any time during the authorized work, human remains and/or cultural resources are discovered within the permit area. We also draw your attention to Regional Condition 2.

g. In the event cultural resources and/or historic properties are discovered during the any phase of the authorized work, the Permittee shall fully implement the recommendations outlined in the Inadvertent Discovery Plan (Enclosure 7).

We direct your attention to NWP General Condition 29 and Regional Condition 16 (Enclosure 3) that requires the transfer of this permit if the property is sold, and NWP General Condition 30 that requires you to submit a signed certificate when the work is completed. A "Compliance Certification" is provided (Enclosure 8). If archaeological monitoring is required as a special condition of this permit you must have the archaeologist sign the Compliance Certification prior to submittal.

We have prepared a Preliminary Jurisdictional Determination (JD), which is a written indication that wetlands and waterways within your project area may be waters of the United States (Enclosure 9). Such waters have been treated as jurisdictional waters of the United States for purposes of computation of impacts and compensatory mitigation requirements. If you concur with the findings of the Preliminary JD, please sign it and return it to the letterhead address within two weeks. If you believe the Preliminary JD is inaccurate, an Approved JD may be requested, which is an official determination regarding the presence or absence of waters of the United States. If you would like an Approved JD, one must be requested prior to starting work within waters of the United States. Once work within waters of the United States has been started, the opportunity to request an Approved JD will no longer be available.

This authorization does not obviate the need to obtain other permits where required. Permits, such as those required from the Oregon Department of State Lands (ODSL) under Oregon's Removal /Fill Law, must also be obtained before work begins. The DEQ water quality certification conditions (Enclosure 4) require you to obtain DEQ approval of your stormwater management plan prior to initiating construction. Please contact the 401 Water Quality Certification Coordinator, Oregon Department of Environmental Quality, 2020 SW Fourth Avenue, Suite 400, Portland, Oregon, 97201-4987, by telephone at (503) 229-6030, or visit http://www.deq.state.or.us/wq/sec401cert/removalfill.htm.

This verification is valid for a period of two years from the date of this letter unless the NWP expires, is modified, or revoked prior to that date. The nationwide permits are scheduled to expire on March 18, 2017. If you commence or are under contract to commence this activity before the date the NWP expires, is modified, or revoked, you will have 12 months from the date of the expiration, modification, or revocation to complete the activity under the present terms and conditions of the current NWP.

We would like to hear about your experience working with the Portland District, Regulatory Branch. Please complete a customer service survey form at the following address: http://per2.nwp.usace.army.mil/survey.html.

If you have any questions regarding this NWP verification, please contact Ms. Shelly Lynch at the letterhead address, by telephone at (541) 962-0401, or by e-mail at Michelle.R.Lynch@usace.army.mil.

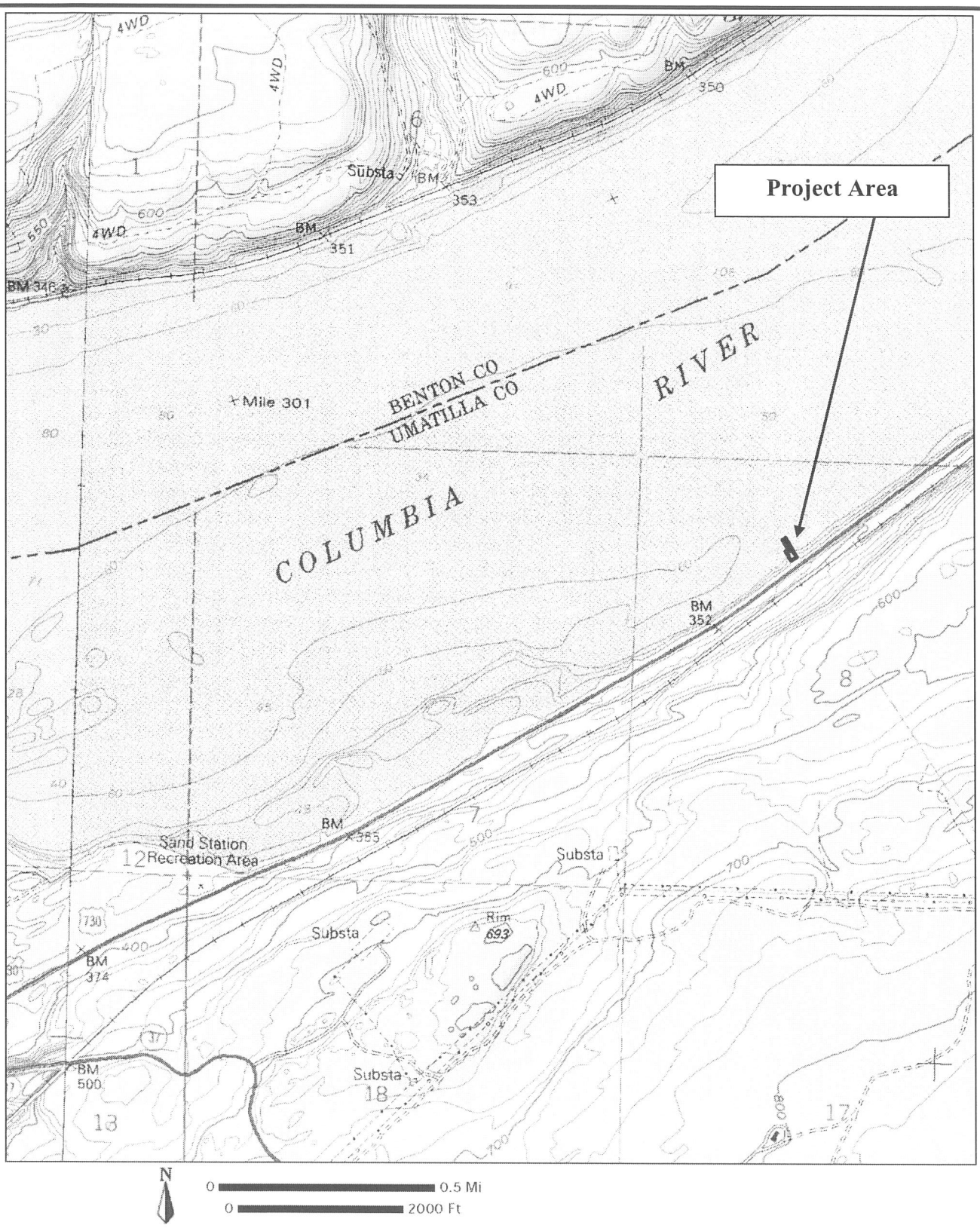
Sincerely,

James A. Holm
Team Leader
Regulatory Branch

Enclosures

Copy Furnished:

Oregon Department of State Lands (Hartman)
Oregon Department of Environmental Quality (Anderson)

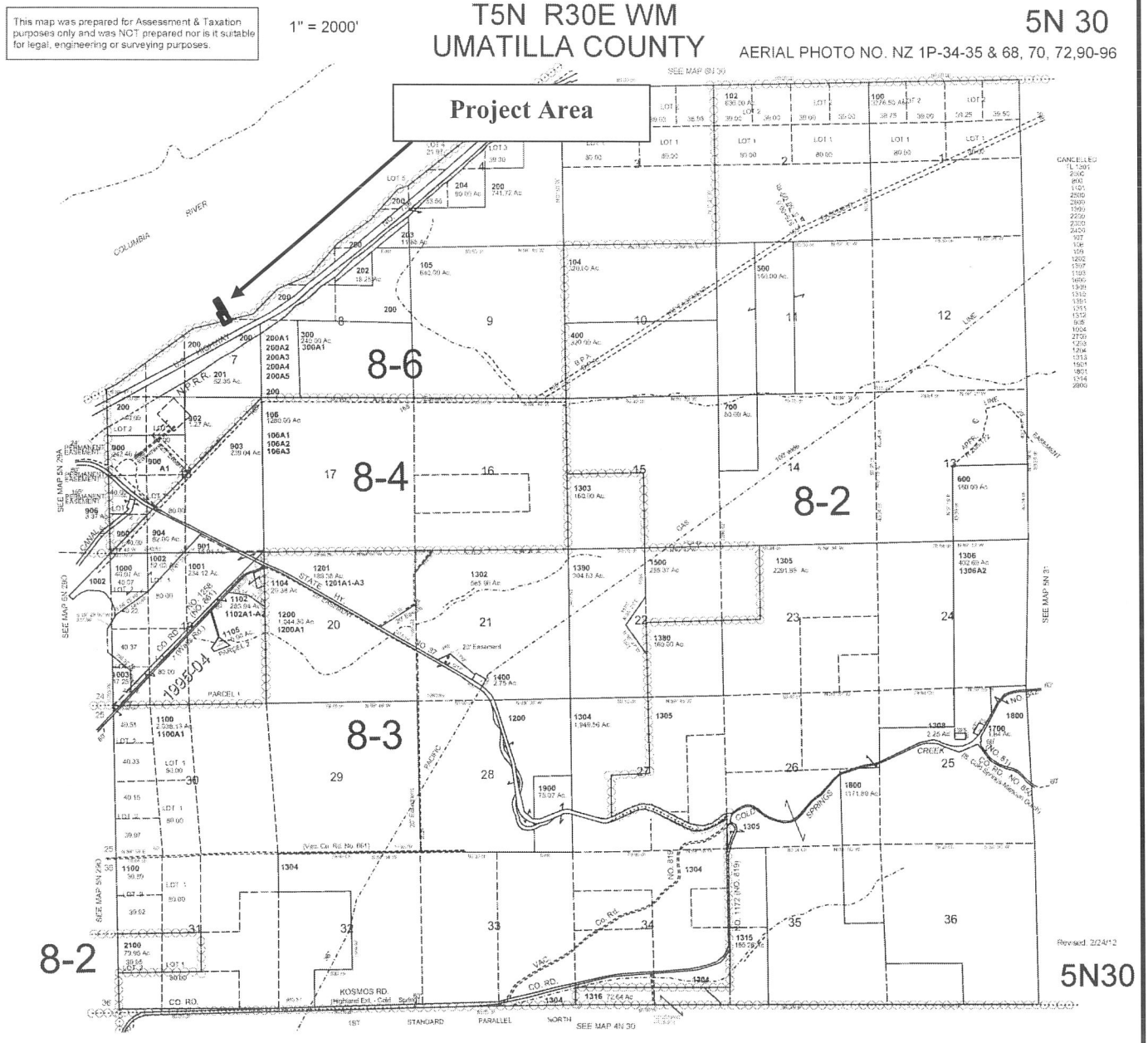


6/14/12

4973

Location and general topography for the Stahl H.B. Farms and JSH Farms River Pumping Station Fish Screening and Intake Modifications Project in Umatilla County, Oregon (USGS Juniper, OR quadrangle, courtesy of mytopo.com).

FIGURE 1



6/14/12

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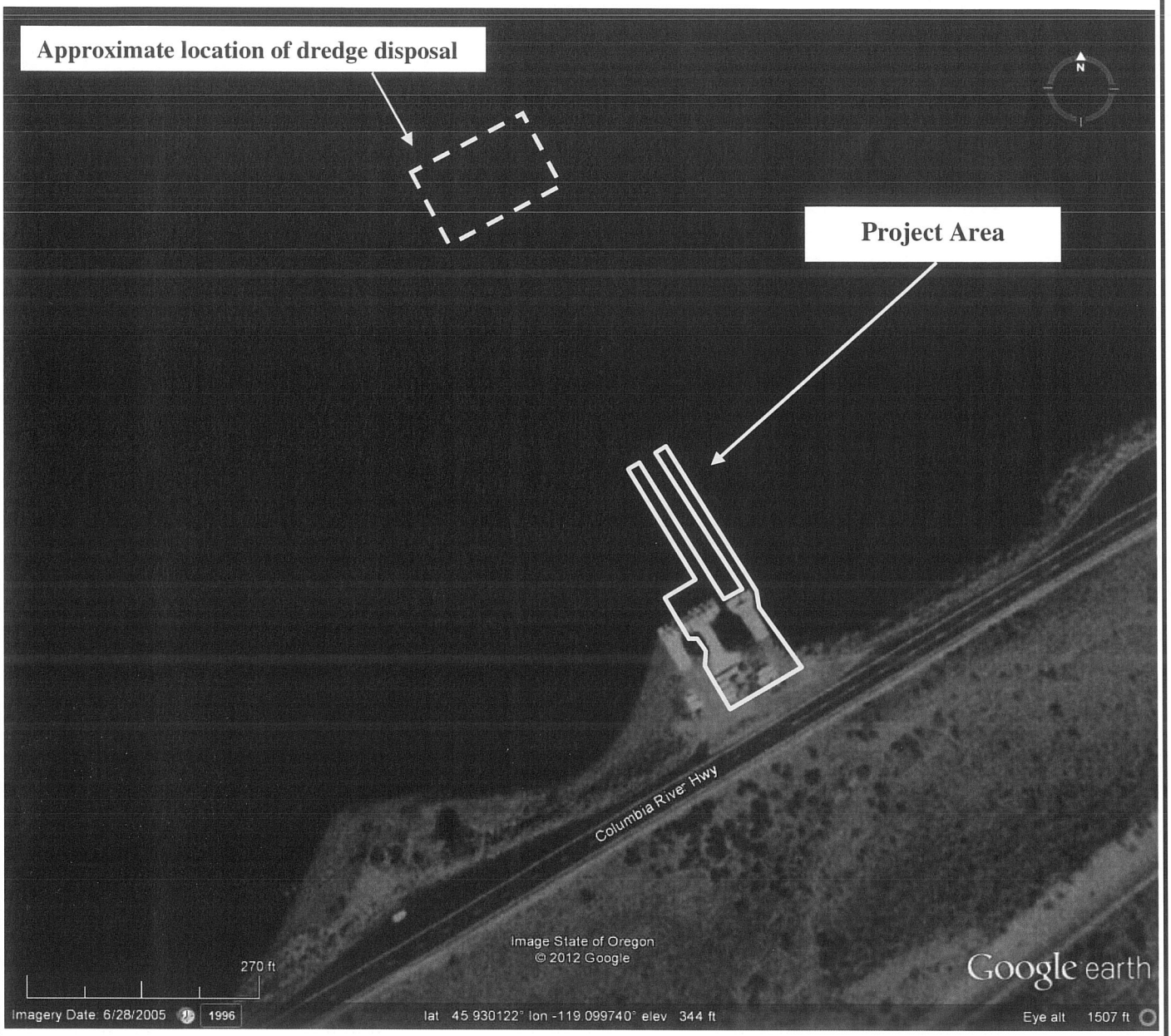
Tax lot map for the Stahl H.B. Farms and JSH Farms River Pumping Station Fish Screening and Intake Modifications Project in Umatilla County, Oregon (Tax Map T5N, R30E, portion of lot 200, courtesy of ORMAP.net).

FIGURE 2



6/14/12

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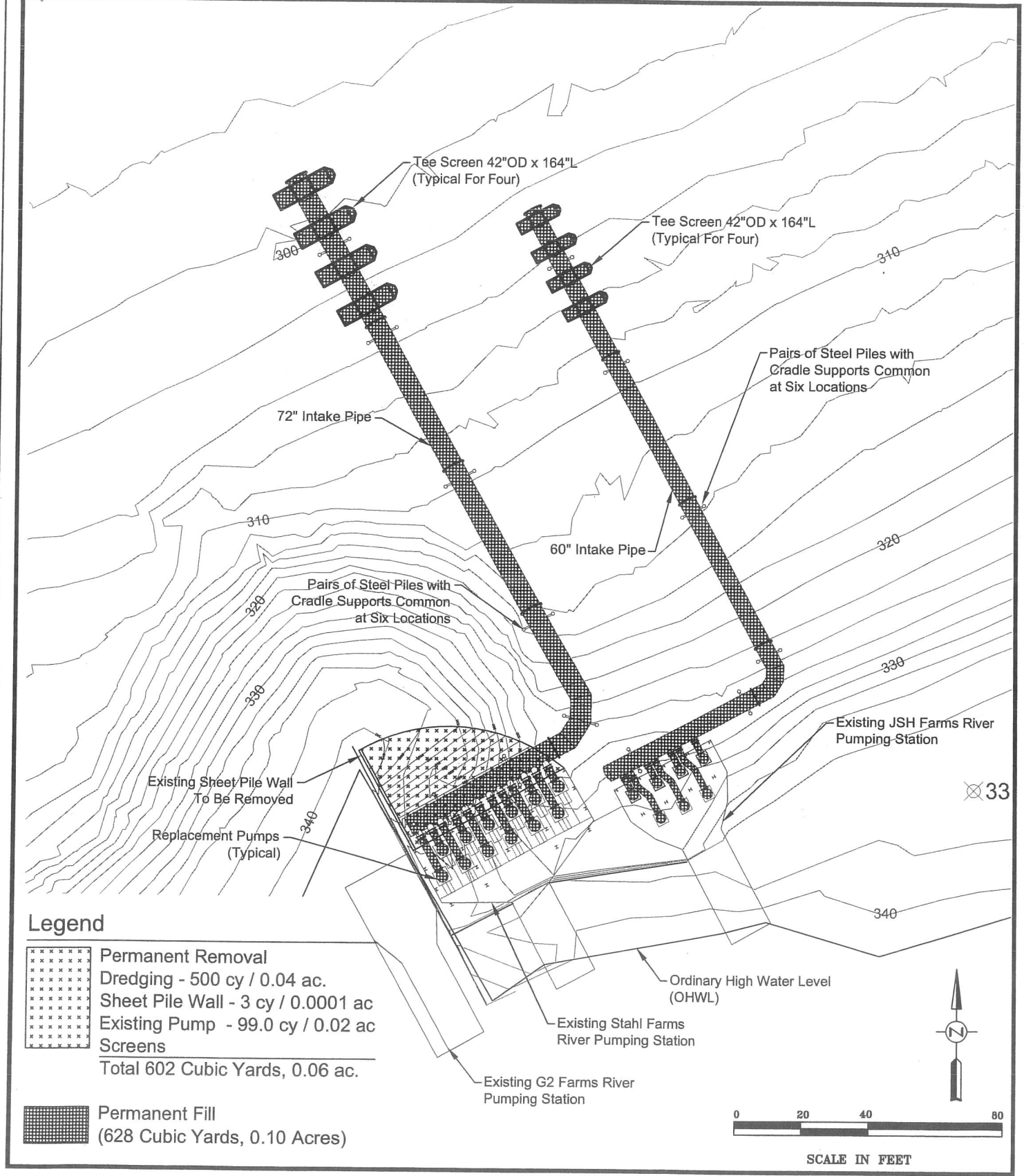
Recent aerial photograph for the Stahl H.B. Farms and JSH Farms River Pumping Station Fish Screening and Intake Modifications Project in Umatilla County, Oregon (GoogleEarth, 2005).

FIGURE 3



Legend

Permanent Removal
Dredging - 500 cy / 0.04 ac.
Sheet Pile Wall - 3 cy / 0.0001 ac
Existing Pump - 99.0 cy / 0.02 ac
Screens
Total 602 Cubic Yards, 0.06 ac.

Permanent Fill
(628 Cubic Yards, 0.10 Acres)

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180 Wilsonville, Oregon 97070
Phone: (503) 570-0800 Fax (503) 570-0855

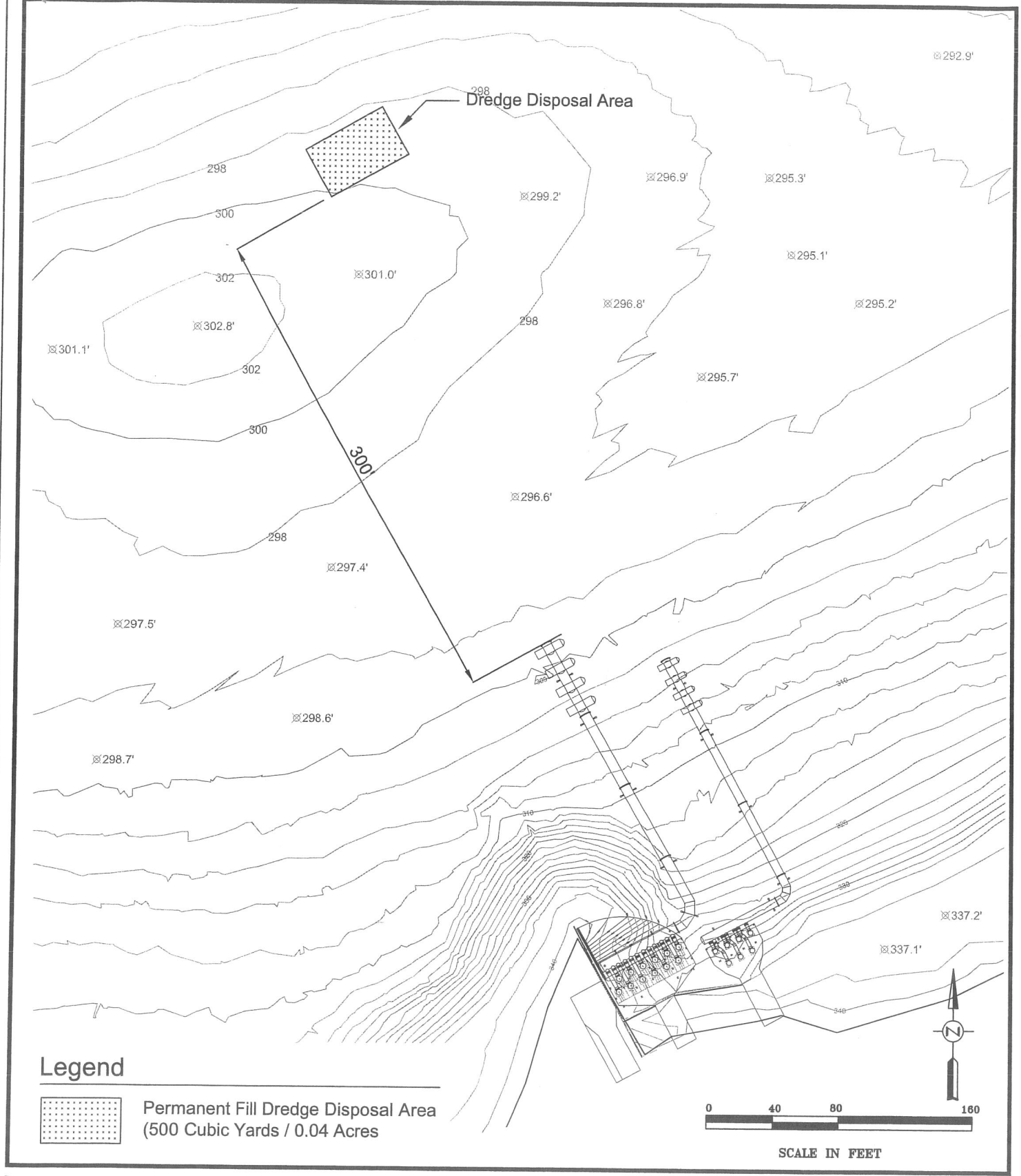
Permanent Waters Impacts
Stahl H.B. Farms and JSH Farms Pumping Station
Fish Screening and Intake Modification Project

Umatilla County, Oregon

FIGURE 4

08/27/12

Y:\Projects Directories\4900\4973 Columbia River Water Withrawal\AutoCAD\Plot_dwgs\Fig4_Impacts.dwg, 9/4/2012 10:12:35 AM



PHS

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180 Wilsonville, Oregon 97070
Phone: (503) 570-0800 Fax (503) 570-0855

Permanent Waters Impacts, Dredge Disposal Area
Stahl H.B. Farms and JSH Farms Pumping Station
Fish Screening and Intake Modification Project

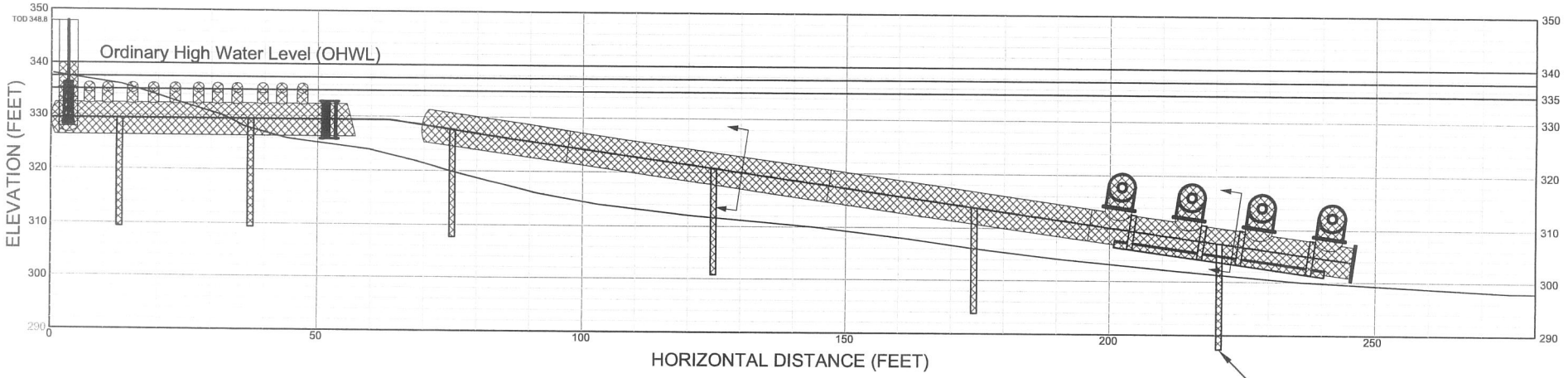
Umatilla County, Oregon

FIGURE
4A

08/27/12

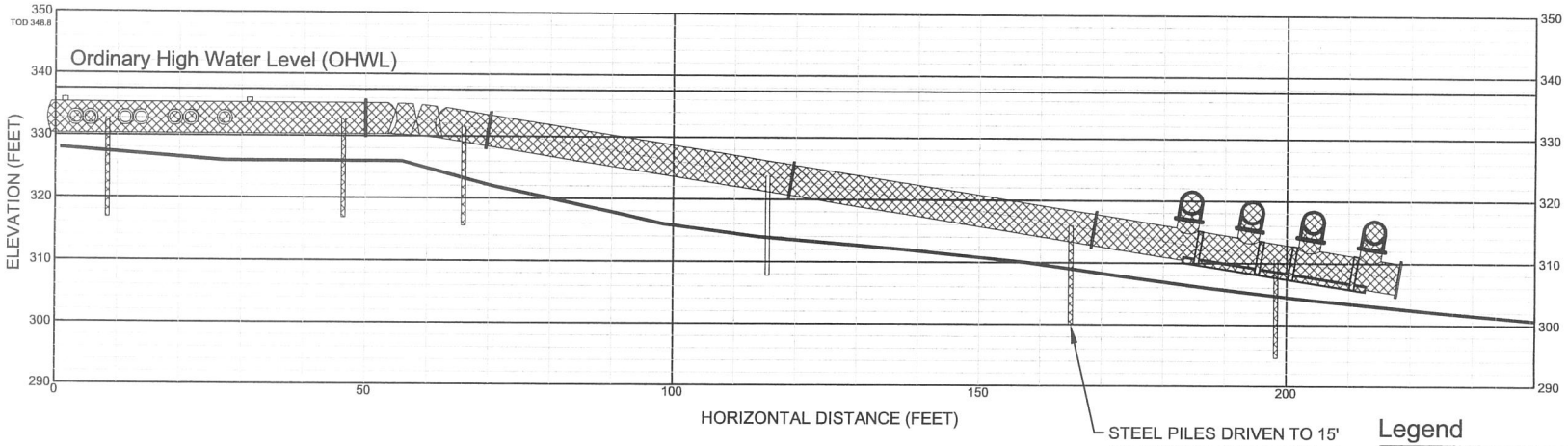
Y:\Projects Directories\4500\4973 Columbia River Water Withrawal\AutoCAD\Plot_dwgs\Fig4A_DredgeSpoils.dwg, 9/4/2012 10:17:42 AM

NWP-2012-329



Stahl H. B. Farms Intake Pipe Profile

Scale: 1"=30'



Legend

Permanent Fill (628 Cubic Yards, 0.10 Acres)

JSH Farms Intake Pipe Profile

Scale: 1"=30'

Enclosure 1

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180 Wilsonville, Oregon 97070
Phone: (503) 570-0800 Fax (503) 570-0855

Intake Pipe Profiles
Stahl H.B. Farms and JSH Farms Pumping Station Fish Screening and Intake Modification Project

Umatilla County , Oregon

FIGURE 5

08/27/12

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US Army Corps of Engineers
Portland District

2012 Nationwide (NWP) Regional Permit Conditions Portland District

The following Nationwide Permit (NWP) regional conditions are for the Portland District Regulatory Branch boundary. Regional conditions are placed on NWPs to ensure projects result in less than minimal adverse impacts to the aquatic environment and to address local resource concerns.

ALL NWPs –

1. **High Value Aquatic Resources:** Except for NWPs 3, 20, 27, 32, 38, and 48, any activity that would result in a loss of waters of the United States (U.S.) in a high value aquatic resource is not authorized by NWP. High value aquatic resources in Oregon include bogs, fens, wetlands in dunal systems along the Oregon coast, native eel grass (*Zostera marina)* beds, kelp beds, rocky substrate in tidal waters, marine reserves, marine gardens, vernal pools, alkali wetlands, and Willamette Valley wet prairie wetlands.

   NOTE: There are other types of wetlands in Oregon, such as mature wooded wetlands and tidal swamps, which are also considered as providing high value and functions to the State's aquatic ecosystems. Impacts to these waters will be evaluated on a case-by-case basis for potential authorization under a Nationwide Permit. For more information about the State's Wetlands of Conservation Concern" please visit http://oregonstatelands.us/DSL/PERMITS/forms.shtml#Permit_Forms

2. **Cultural Resources and Human Burials-Inadvertent Discovery Plan**: In addition to the requirements in NWP General Conditions 20 and 21 permittee shall immediately notify the Portland District Engineer if at any time during the course of the work authorized, human burials, cultural items, or historic properties, as identified by the National Historic Preservation Act and Native American Graves and Repatriation Act, are discovered. The permittee shall implement the following procedures:

   a. Immediately cease all ground disturbing activities.

   b. Project Located in Oregon: Notify the Oregon State Historic Preservation Office (503-986-0674).

   c. Project Located in Washington: Notify the Washington Department of Archaeology and Historic Preservation (360-586-3077).

   d. Notify the Portland District Engineer. Notification shall be made by fax (503-808-4375) as soon as possible following discovery but in no case later than 24 hours. The fax shall clearly specify the purpose is to report a cultural resource discovery. Follow up the fax notification by contacting the Portland District Engineer representative (by email and telephone) identified in the verification letter.

   e. Failure to stop work immediately and until such time as the Portland District Engineer has coordinated with all appropriate agencies and Native American tribes, and complied with the provisions of 33 CFR 325 (Appendix C), the National Historic Preservation Act, Native American Graves and Repatriation Act, and other pertinent regulations could result in violation of state and federal laws. Violators are subject to civil and criminal penalties.

3. **In-water Work:** In order to minimize potential impacts to water quality, aquatic species and habitat, in-water work will be limited by the following timing considerations:

   a. Permittee shall complete all in-water work within the preferred work window specified in Oregon Department of Fish and Wildlife's (ODFW) "Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources," June 2008, or most current version, available at: http://www.dfw.state.or.us/lands/inwater/Oregon_Guidelines_for_Timing_of_%20InWater_Work2008.pdf.

b. If work cannot be completed within the preferred timing window, despite every attempt to do so, permittee shall submit a request to work out side of the preferred window to the Portland District Engineer in writing. Permittee shall not begin any in-water work outside of the preferred window until they have received written approval from the District Engineer. The District Engineer will coordinate with the appropriate agencies prior to finalizing a decision.

4. **Fish and Aquatic Life passage:** In addition to the requirements of NWP General Conditions 2 and 9, all activities authorized by a NWP shall not restrict passage of aquatic life temporarily or permanently. Aquatic life shall be interpreted to include amphibians, reptiles, and mammals whose natural habitat includes waters of the United States and which are generally present in and/or around waters of the United States.

a. Activities such as the installation of culvert, intake structures, diversion structures, or other modifications to stream channel morphology must conform to fish passage standards developed by the ODFW and the National Marine Fisheries Service (NMFS). ODFW's standards can be found at OAR 635-412-0035; ODFW provides an overview at http://www.dfw.state.or.us/fish/passage/ and NMFS provides an overview at http://www.nwr.noaa.gov/Salmon-Hydropower/FERC/upload/Fish-Passage-Design.pdf.

5. **Fish Screening:** The permittee shall ensure that all intake pipes utilize fish screening that complies with standards developed by NMFS and ODFW ("Anadromous Salmonid Passage Facility Design", February 2008). http://www.nwr.noaa.gov/Salmon-Hydropower/FERC/upload/Fish-Passage-Design.pdf or the most current version.

6. **Work Area Isolation and Dewatering**: Appropriate best management practices shall be implemented to prevent erosion and sediments from entering wetlands or waterways.

a. All in-water work shall be isolated from the active channel or conducted during low seasonal stream flows.

b. Permittee shall provide for fish passage upstream and downstream of the worksite.

c. Cofferdams shall be constructed of non-erosive material, such as concrete jersey barriers, sand and gravel bag dams, or water bladders. Constructing a cofferdam by pushing material from the streambed or sloughing material from the streambanks is not authorized.

d. Sand and gravel bag dams shall be lined with a plastic liner or geotextile fabric to reduce permeability and prevent sediments and/or construction materials from entering the active stream channel.

e. Upstream and downstream flows shall be maintained by routing flows around the construction site with a pump, bypass pipe, or diversion channel.

f. A sediment basin shall be used to settle sediments in return water prior to release back into the waterbody. Settled water shall be returned to the waterbody in such a manner as to avoid erosion of the streambank. Settlement basins shall be placed in uplands.

g. Fish and other aquatic species must be salvaged prior to dewatering. The State of Oregon requires a Scientific Take Permit be obtained to salvage fish and wildlife. Permittee is advised to contact the nearest ODFW office. For further information contact ODFW at http://www.dfw.state.or.us.

7. **Dredging:** For any NWP-authorized activities, including but not limited to NWP 1, 3, 12, 13, 19, 27, 28, 35, 36, 40, and 41 that involve removal of sediment from waters of the United States permittee shall ensure that:

a. Prior to dredging, appropriate sediment characterization as to size composition and potential contaminants has been undertaken and the material is suitable for in-water disposal per the Sediment Evaluation Framework for the Pacific Northwest, 2009 (available at: http://www.nwp.usace.army.mil/Portals/24/docs/environment/sediment/2009_SEF_Pacific_NW.pdf) or the most current version.

b. Permittee shall use the least impactful methodology and activity sequencing to ensure impacts to the aquatic system are minimized to the maximum extent practicable. Examples include using a hydraulic, closed-lipped clamshell bucket, toothed clamshell bucket, dragline and/or excavator.

c. Dredged or excavated material is placed where sediment-laden water cannot enter waterways or wetlands in an uncontrolled manner. The discharge associated with the return of sediment-laden water into a water of the United States from an upland disposal site requires separate authorization from the District Engineer under NWP 16.

8. Chemically Treated Wood: Permittee shall not allow wood products treated with biologically harmful leachable chemical components (e.g. copper, arsenic, zinc, creosote, chromium, chloride, fluoride, and pentachlorophenol) to be placed over or come in contact with waters or wetlands.

a. **New structures:** Wood may be permanently or temporarily sealed with non-toxic products such as water-based silica or soy-based water repellants or sealers to prevent or limit leaching. Acceptable alternatives to chemically treated wood include untreated wood, steel (painted, unpainted or coated with epoxy-petroleum compound or plastic), concrete and plastic lumber.

b. **Removal of existing chemically treated wood:** Permittee shall prevent chemically treated wood debris from entering any waters or wetlands. In the event chemically treated wood debris inadvertently enters a water or wetland, permittee shall remove the material as soon as practicable and dispose of the material at an approved upland facility.

1) Permittee shall make every practicable effort to remove chemically treated wood piles in their entirety using a vibratory hammer.

i) In uncontaminated sediment, piling that breaks off during extraction shall be cut off at least three (3) feet below the surface of the sediment.

ii) In contaminated sediment, piling that breaks off above the surface shall be cut off at the sediment line. If the break occurs within contaminated sediment, no further effort shall be made to remove the pile. Any resulting hole shall be filled with clean, native substrate.

9. Mechanized Equipment: In addition to the requirements in NWP General Condition 11, permittee shall implement the following to prevent or limit aquatic impacts from mechanized equipment:

a. In all events use the type of equipment that minimizes aquatic impacts spatially and temporally.

b. Use existing roads, paths, and drilling pads where available. Temporarily place mats or pads onto wetlands or tidal flats to provide site access. Temporary mats or pads shall be removed upon completion of the authorized work.

c. Operate equipment from the top of a streambank and conduct work outside of the active stream channel, unless specifically authorized by the District Engineer.

d. Isolate storage, staging, and fueling areas, and operate and maintain equipment in isolation from waters, wetlands, and riparian areas.

e. Maintain spill prevention and containment materials with ready access at vehicle staging areas. Permittee and staff shall be trained to effectively deploy the measures. Spill response materials include straw matting/bales, geotextiles, booms, diapers, and other absorbent materials, shovels, brooms, and containment bags. In the event of a spill of petroleum products or other chemicals with potential to affect waters or wetlands, permittee shall immediately report the spill to the Oregon Emergency Response Service (OERS) at 1-800-452-0311 and shall implement containment and cleanup measures, as directed.

10. **Deleterious Waste:** In addition to the requirements in NWP General Condition 6, permittee shall not dispose of biologically harmful or waste materials into waters or wetlands. These materials include but are not limited to the following:

    a. Petroleum products, chemicals, cement cured less than 24 hours, welding slag and grindings, concrete saw cutting by-products, sandblasted materials, chipped paint, tires, wire, steel posts, asphalt and waste concrete.

    b. Discharge water created during construction activities (such as but not limited to concrete wash out, pumping for work area isolation, vehicle wash water, drilling fluids, dredging return flows, and sediment laden runoff) shall be treated to remove debris, sediment, petroleum products, metals, and other pollutants and discharged in a controlled fashion to avoid erosion. A separate Department of the Army permit and/or a National Pollutant Discharge Elimination System (NPDES) permit from Oregon Department of Environmental Quality's (DEQ) may be required prior to discharge. Permittee is directed to contact the nearest DEQ office (http://www.deq.state.or.us/about/locations.htm) for more information about the NPDES program.

11. **Stormwater Discharge Pollution Prevention:** Activities that result in stormwater runoff passing over disturbed areas and impervious surfaces must include reduction measures, controls, treatment techniques and management practices to avoid discharge of soil, debris, toxics and other pollutants to waterways and wetlands.

    a. **Erosion Control:** During construction and until the site is stabilized, the permittee shall ensure all practicable measures are implemented and maintained to prevent erosion and runoff. For proper erosion control measure selection and implementation, the permittee is referred to DEQ "Oregon Sediment and Erosion Control Manual," April 2005, available at: http://www.deq.state.or.us/wq/stormwater/escmanual.htm. Appropriate control measures and maintenance include, but are not limited to the following:

        1) Permittee shall inspect and maintain control measures in good condition throughout construction and until permanent measures are well established. Permittee shall repair or replace any damages such as rips, broken stakes that result in loss of intended function. Permittee shall install additional control measures and reseed or replant with native and/or non-competitive species as necessary to achieve stabilization of the site. Spray-on mulches imbedded with benign sterile species may be used to temporarily stabilize the area until permanent controls are in place.

        2) Once soils or slopes have been stabilized, permittee shall completely remove and properly dispose of or re-use all components of installed control measures.

b. **Post-Construction Stormwater Management:** If the activity will result in creation of new impervious surfaces and federally listed aquatic species or their habitat may be affected by the proposed activity permittee shall forward a copy of the post-construction stormwater management plan (SWMP) to the Portland District Engineer for our consultation under the Endangered Species Act. A copy of the SWMP must be submitted to the DEQ for their review and approval prior to initiating construction.

1) Submittal of the post-construction stormwater management plan to DEQ at the same time the application is submitted to the Corps will streamline the project review. DEQ's Stormwater Management Plan Submission Guidelines for Removal/Fill Permit Applications which involve impervious surfaces can be found at http://www.deq.state.or.us/wq/sec401cert/docs/stormwaterGuidlines.pdf. This document provides information to determine the level of detail required for the plan based on project type, scope, location, and other factors, as well as references to assist in designing the plan and a checklist for a complete submission.

12. Upland Disposal: Material disposed of in uplands shall be placed in a location and manner that prevents discharge of the material and/or return water into waters or wetlands unless otherwise authorized by the Portland District Engineer.

a. Final disposition of materials removed from waters and wetlands to uplands may require separate approvals under Oregon State Solid Waste Rules. For more information please visit DEQ's Solid Waste program at http://www.deq.state.or.us/lq/sw/index.htm.

b. Temporary upland stockpiles of excavated or dredged materials shall be isolated from waterways, wetlands, and floodwaters; stabilized prior to wet weather; and maintained using best management practices unless specifically authorized by the District Engineer.

13. Restoration of Temporary Impacts: To minimize temporal losses of waters of the UNITED STATES construction activities within areas identified as temporary impacts shall not exceed two construction seasons or 24 months, whichever is less. For all temporary impacts, permittee shall provide the Portland District Engineer a description, photos, and any other documentation which demonstrates pre-project conditions with the Preconstruction Notification.

b. Site restoration of temporarily disturbed areas shall include returning the area to pre-project ground surface contours. Permittee shall revegetate temporarily disturbed areas with native, noninvasive herbs, shrubs, and tree species sufficient in number, spacing, and diversity to replace affected aquatic functions.

c. Site restoration shall be completed within 24 months of the initiation of impacts (unless otherwise required by the specific NWP). However, if the temporary impact requires only one construction season, site restoration shall be completed within that same construction season before the onset of seasonal rains.

14. Permittee-responsible Compensatory Mitigation: When permittee-responsible compensatory mitigation is required by the Portland District Engineer to replace lost or adversely affected aquatic functions, the permittee shall provide long-term protection for the mitigation site through real estate instruments (e.g., deed restriction or conservation easement) or other available mechanisms. The appropriate long-term protection mechanism will be determined by the Portland District Engineer based on project-specific review and must be in place prior to initiating the permitted activity.

15. Inspection of the Project Site: The permittee shall allow representatives of the Portland District Engineer and/or DEQ to inspect the authorized activity to confirm compliance with nationwide permit terms and conditions. A request for access to the site will normally be made sufficiently in advance to allow a property owner or representative to be on site with the agency representative making the inspection.

16. Sale of Property/Transfer of Permit: Permittee shall obtain the signature(s) of the new owner(s) and transfer this permit in the event the permittee sells the property associated with this permit. To validate the transfer of this permit authorization, a copy of this permit with the new owner(s) signature shall be sent to the Portland District Engineer at the letterhead address on the verification letter.

NATIONWIDE SPECIFIC CONDITIONS:

NWP 3 – Maintenance

1. Permittee shall implement measures necessary to prevent streambed gradient alterations and streambank erosion.

NWP 5 – Scientific Measurement Devices

1. Permittee shall remove all scientific measurement devices including all associated structures and fills including anchoring devices, buoys, and cable within 30 days after research is completed.

NWP 6 – Survey Activities

1. Use of in-water explosives is not authorized.

2. Permittee shall isolate all in-stream exploratory trenching from the active channel.

NWP 12 – Utility Line Activities

1. Permittee shall install trench-blockers of a type and design sufficient to prevent the drainage of the wetland areas (e.g. bentonite clay plugs, compacted sand bags, etc.) where utility lines are buried within or immediately adjacent to wetlands and other waters.

2. Permittee shall remove and separately reserve the topsoil from the subsurface soils during trenching. Permittee shall place the reserved topsoil as the final surface layer in backfilling the trench.

3. Agency coordination, per Nationwide Permit General Condition 31 (d), is required where utility lines are proposed in estuaries to ensure there are no impacts to native shellfish beds.

4. Manholes placed in streams or other waterways require specific approval by the District Engineer.

NWP 13 – Bank Stabilization

1. Permittee shall include the use of bioengineering techniques and natural products (e.g. vegetation and organic material such as root wads) in the project design to the maximum extent practicable and shall minimize the use of rock, except when it is anchoring large woody debris. Non-biodegradable materials, such as plastic netting, that may entrap wildlife or pose a safety concern shall not be used for soil stabilization. Riparian plantings shall be included in all project designs unless the permittee can demonstrate that such plantings are not practicable.

2. Riprap shall be clean (i.e. free of toxic contaminants and invasive species), durable, angular rock.

NWP 23 – Approved Categorical Exclusions

1. Pre-construction notification or other Corps-approved documentation is required for all activities which require a permit from the Portland District Engineer.

NWP 29 – Residential Developments

1. Wetland impacts associated with the construction or expansion of a single residence including attendant features (utility lines, roads, yards, etc) shall not exceed one-fourth (¼) acre.

NWP 41 – Reshaping Existing Drainage Ditches

1. All in-water work shall be isolated from the active stream channel or conducted during low seasonal stream flows.

NWP 43- Stormwater Management Facilities

1. All in-water work shall be isolated from the active stream channel or conducted during low seasonal stream flows.

2. This NWP does not authorize the retention of water in excess of that required to meet stormwater management requirements for purposes such as recreational lakes, reflecting pools, irrigation, etc.

NWP 44 - Mining Activities

1. Reclamation, when required, must be achieved within 24 months of completing the mining activity.

2. In-stream mining including bar scalping is not authorized by this NWP.

3. Permittee shall ensure site includes appropriate grade controls to prevent headcutting of streams or bank erosion.

4. The use of in-water explosives is prohibited under this nationwide.

5. Excavated materials may be temporarily stockpiled within the channel above the plane of the water surface for up to seven (7) days. Excavated materials shall not be stockpiled in wetlands or flowing water.

NWP 48 – Commercial Shellfish Aquaculture Activities

1. Agency coordination, per NWP General Condition 31 (d), is required for all activities proposed under this NWP.

NOTE: For projects involving commercial aquaculture or mariculture cultivation of oysters, clams, and mussels on state submerged and submersible lands permittee is advised authorization may be required from the Oregon Department of Agriculture. For more information go to http://www.oregon.gov/ODA/FSD/program_shellfish.shtml

NWP 51– Land-Based Renewable Energy Generation Facilities

1. Agency coordination, per NWP General Condition 31 (d), is required for activities where aerial power transmission lines cross navigable waters.

NWP 52 – Water Based Renewable Energy Generation Pilot Projects

1. Agency coordination, per NWP General Condition 31 (d), is required for all activities proposed for verification under this NWP.

2. Activities authorized under this NWP shall comply with the siting requirements of the Oregon Territorial Sea Plan, which designates areas as suitable for such activities.

NOTE: The State of Oregon is updating its Territorial Sea Plan to identify areas suitable for renewable ocean energy. Once identified and adopted by the Land Conservation and Development Commission, the general public will be able to identify those areas using a Geographic Information Systems map layer.

US Army Corps of Engineers
Portland District

Nationwide (NWP) Permit Conditions

33 CFR Part 330; Issuance of Nationwide Permits – March 19, 2012

C. Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR §§ 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR § 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation

(a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species.

(a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.noaa.gov/fisheries.html respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any "take" permits required under the U.S. Fish and Wildlife Service's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such "take" permits are required for a particular activity.

20. Historic Properties.

(a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-

construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment.

(2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____

(Transferee)

_____

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification.
(a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination:

(1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

F. Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term "discharge" means any discharge of dredged or fill material.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to

jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement

of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term "single and complete project" is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of "independent utility"). Single and complete non-linear projects may not be "piecemealed" to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line, which is defined at 33 CFR 328.3(d).

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a jurisdictional water of the United States. If a jurisdictional wetland is adjacent – meaning bordering, contiguous, or neighboring – to a waterbody determined to be a water of the United States under 33 CFR 328.3(a)(1)-(6), that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of "waterbodies" include streams, rivers, lakes, ponds, and wetlands.

Oregon Department of Environmental Quality (DEQ) 401 Water Quality (WQC) General Conditions

In addition to all USACE permit conditions and regional permit conditions, the following 401 Water Quality Certification conditions apply to all Nationwide Permit (NWP) categories certified or partially certified Additional 401 Water Quality Certification category specific conditions follow, which must also be complied with as applicable.

1) Turbidity: All Permittees must implement all reasonably availably technological controls and management practices to meet the standard rule of no more than a 10 percent increase in project caused turbidity above background levels. However, if all reasonably available controls and practices are implemented by a permittee, turbidity exceedances of more than 10 percent above background are allowed for limited times depending on the severity of the increase, as specified in this condition.

a. **Monitoring and Compliance Requirements:** Permittee must monitor and record in a daily log stream turbidity levels during work below ordinary high water, compare turbidity caused by authorization actions to background levels, and adapt activities to minimize project-caused turbidity. Required monitoring steps include:

i. Identify two monitoring locations:

A. Background location: A relatively undisturbed location, approximately 100 feet upcurrent from the disturbing activity; and,

B. Compliance location: A location downcurrent from the disturbing activity, at approximately mid-depth, within any visible plume, at the distance that corresponds to the size of the waterbody where work is taking place as listed on the table below:

WETTED STREAM WIDTH	COMPLIANCE DISTANCE
Up to 30 feet	50 feet
>30 feet to 100 feet	100 feet
>100 feet to 200 feet	200 feet
>200 feet	300 feet
LAKE, POND RESERVOIR	Lesser of 100 feet or Maximum surface dimension

ii. Determine Compliance:

A. At the start of work, measure turbidity at both locations and record in the daily log date, time, location, tidal stage (if waterbody is tidally influenced), and turbidity levels at each point and comparison. Permittee must also record in the daily log all controls and practices implemented at the start of the work.

B. During work, measure turbidity at both locations at the frequency directed in the tables below and record in the daily log date, time, location, tidal stage (if waterbody is tidally influenced), and turbidity measurements.

C. Turbidity measurements must be representative of stream turbidity when the activity is being conducted. Measurements cannot be taken during a cessation of activity.

D. If project caused turbidity is elevated above background, Permittee must implement additional controls and practices and monitor both points again as described below for either monitoring method. A description of the additional controls and the date, time, and location where they are implemented must be recorded in the daily log:

MONITORING WITH A TURBIDIMETER*		
ALLOWABLE EXCEEDANCE TURBIDITY LEVEL	ACTION REQUIRED AT 1ST MONITORING INERNAL	ACTION REQUIRED AT 2ND MONITORING INTERNAL
0 to 5 NTU above background	Continue to monitor every 4 hours	Continue to monitor every 4 hours
5 to 29 NTU above background	Modify controls & continue to Monitor every 4 hours	Stop work after 8 hours at 5-29 NTU above background
30 to 49 NTU above Background	Modify controls & continue to Monitor every 2 hours	Stop work after 2 confirmed hours At 30-49 NTU above background
50 NTU or more above Background	Stop work	Stop work

VISUAL MONITORING*		
No plume observed	Continue to monitor every 4 hours	Continue to monitor every 4 hours
Plume observed within compliance distance	Modify controls & continue to Monitor every 4 hours	Stop work after 8 hours with an observed plume within compliance distance
Plume observed beyond compliance distance	Stop work	Stop work
**Note: Monitoring visually may require stopping work as soon as the visual plume exceeds the waterbody specific compliance distance. However, using a turbidimeter can allow work to continue based on more precise determination of the severity of the turbidity increase over time.*		

iii. Work must **stop immediately for the remainder of the 24-hour period** if:

A. A visible turbidity plume extends beyond the compliance distance; or,

B. Turbidity is measured at the compliance point at:

I. 50 NTU or more over background at any time;
II. 30 NTU over background for 2 hours; or
III. 5-29 NTU over background for 8 hours.

iv. Work may continue if no visible plume is observed, turbidity measured at the compliance point is no more than 0-5 NTU above background, or additional control measures can be applied to keep the visible plume within the compliance distance, measured turbidity ranges, and durations listed in the tables above.

b. Turbidity Control Measures - The permittee must implement all reasonably available controls and practices to minimize turbidity during in-water work, which may include, but are not limited to:

i. Schedule, sequence or phase work activities so as to minimize in-water disturbance and duration of activities below ordinary high water;

ii. Install and maintain containment measures to prevent erosion of upland material to waterways and wetlands, isolate work areas from flowing waters, and prevent suspension of in-stream sediments to the maximum extent practicable;

iii. Apply control measures for all in-stream digging, including but not limited to: employing an experienced equipment operator; not dumping partial or full buckets of material back into the wetted stream; adjusting the volume, speed, or both of loads or hydraulic suction equipment; or by using a closed-lipped environmental bucket;

iv. Limit the number and location of stream crossing events. If equipment must cross a waterway, establish temporary crossing sites at an area with stable banks, where the least vegetation disturbance will occur, shortest distance across water, oriented perpendicular to the stream, and supplement with clean gravel or other temporary methods as appropriate;

v. Place excavated, disturbed, and stockpiled material so that it is isolated from the edge of waterways and wetlands and not allowed to enter waters of the state uncontrolled; and

vi. Apply other effective turbidity control techniques, such as those in Appendix D and throughout DEQ's *Oregon Sediment and Erosion Control Manual*, April 2005, http://www.deq.state.or.us/wq/stormwater/docs/escmanual/appxd.pdf.

c. Reporting: Copies of daily logs for turbidity monitoring must be made available to DEQ and other regulatory agencies upon request. The log must include:

i. Background NTUs or observation, compliance point NTUs or observation, comparison of the points in NTUs or narrative, and location, time, date, and tidal stage (if applicable) for each reading or observation.

ii. A narrative discussing all exceedances, controls applied and their effectiveness, subsequent monitoring, work stoppages, and any other actions taken.

2) Stormwater Discharge Pollution Prevention: All projects that involve land disturbance or impervious surfaces must implement prevention or control measures to avoid discharge of pollutants in stormwater runoff to waters of the state.

a. For land disturbances during construction, the permittee must obtain and implement permits where required (see: http://www.deq.state.or.us/wq/stormwater/construction.htm) and follow DEQ's *Oregon Sediment and Erosion Control Manual*, April 2005 (or most current version), http://www.deq.state.or.us/wq/stormwater/docs/escmanual/appxd.pdf.

b. Following construction, prevention or treatment of on-going stormwater runoff from impervious surfaces must be provided (including but not limited to NWP categories 3, 12, 14, 15, 28, 29, 31, 32, 36, 39, 42, 43, and 51). DEQ encourages prevention of discharge by managing stormwater on site through Low Impact Development principles and other prevention techniques. Assistance in developing an approvable stormwater management plan is available in DEQ's *Stormwater Management Plan Submission Guidelines for Removal/Fill Permit Applications Which Involve Impervious Surfaces*, January 2012 (or most current version), available at: http://www.deq.state.or.us/wq/sec401cert/docs/stormwaterGuidlines.pdf.

c. In lieu of a complete stormwater management plan, the applicant may submit:

i. Documentation of acceptance of the stormwater into a DEQ permitted National Pollutant Discharge Elimination Strategy (NPDES) Phase I or II Municipal Separate Storm Sewer System (MS4); or

ii. Reference to implementation of a programmatic process developed to achieve these expectations, and acknowledged by DEQ as adequately addressing pollution control or reduction through basin-wide post-construction stormwater management practices.

3) Vegetation Protection and Restoration: Riparian, wetland, and in-water vegetation in the authorized project area must be protected from unnecessary disturbance to the maximum extent practicable through methods including:

a. Minimization of project and impact footprint;

b. Designation of staging areas and access points in open, upland areas;

c. Fencing or other barriers demarking construction areas;

d. Use of alternative equipment (e.g., spider hoe or crane); and,

e. Replacement - If authorized work results in unavoidable vegetative disturbance that has not been accounted for in planned mitigation actions; riparian, wetland and in-water vegetation must be successfully reestablished to a degree that it functions (for water quality purposes) at least as well as it did before the disturbance. The vegetation must be reestablished by the completion of authorized work.

4) Land Use Compatibility Statement: In accordance with OAR 340-048-0020(2) (i), each permittee must submit findings prepared by the local land use jurisdiction that demonstrates the activity's compliance with the local comprehensive plan. Such findings can be submitted using Block 7 of the USACE & DSL Joint Permit Application, signed by the appropriate local official and indicating:

a. "This project is consistent with the comprehensive plan and land use regulations;" or,

b. "This project will be consistent with the comprehensive plan and land use regulations when the following local approvals are obtained," accompanied by the obtained local approvals.

c. Rarely, such as for federal projects on federal land, "this project is not regulated by the comprehensive plan" will be acceptable.

5) A copy of all applicable 401 WQC conditions must be kept on the job site and readily available for reference by the permittee, their contractors, DEQ, USACE, NMFS, USFWS, DSL, ODFW, and other appropriate state and local government inspectors.

6) DEQ may modify or revoke these 401 WQC conditions, in accordance with OAR 340-048-0050, in the event that project activities are having a significant adverse impact on state water quality or beneficial uses.

Category Specific Conditions

In addition to all national and regional conditions of the USACE permit and the 401 Water Quality Certification general conditions above, the following conditions apply to the noted specific categories of authorized activities.

NWP 7 – Outfall Structures and Associated Intake Structures:

7.1) The following actions are denied certification:

a. Discharge outfalls that are not subject to an NPDES permit; and,

b. Outfalls that discharge stormwater without pollutant removal demonstrated to meet water quality standards prior to discharge to waters of the state.

7.2) If a permittee cannot obtain an NPDES permit or submit an approvable stormwater management plan per DEQ's Guidelines (at: http://www.deq.state.or.us/wq/sec401cert/docs/stormwaterGuidlines.pdf), the permittee must submit complete project information and water quality impacts analysis directly to DEQ in order to undergo individual 401 WQC evaluation and fulfill public participation requirements.

NWP 12 – Utility Lines:

12. 1) For proposals that include directionally-bored stream or wetland crossings:

a. All drilling equipment, drill recovery and recycling pits, and any waste or spoil produced, must be completely isolated, recovered, then recycled or disposed of to prevent entry into waters of the state. Recycling using a tank instead of drill recovery/recycling pits is preferable;

b. In the event that drilling fluids enter a water of the state, the equipment operator must stop work, immediately initiate containment measures and report the spill to the Oregon Emergency Response System (OERS) at 800-452-0311.

c. Prior to cleaning up drilling fluids spilled into waters of the state, cleanup plans must be submitted and approved by the regulatory agencies; and

d. An adequate supply of materials needed to control erosion and to contain drilling fluids must be maintained at the project construction site and deployed as necessary.

NWP 13 – Bank Stabilization:

13.1) Projects that do not include bioengineering are denied certification, unless a registered professional engineer provides a written statement that non-bioengineered solutions are the only means to protect an existing transportation-related structure.

13.2) To apply for certification for a project without bioengineering, the permittee must submit complete project information and water quality impacts analysis directly to DEQ in order to undergo individual 401 WQC evaluation and fulfill public participation requirements.

NWP 14 – Linear Transportation:

14.1) For projects that include bank stabilization, bioengineering must be a component of the project, unless a registered professional engineer provides a written statement that non-bioengineered solutions are the only means to protect an existing transportation related structure.

14.2) To apply for certification for a project without bioengineering, the permittee must submit complete project information and water quality impacts analysis directly to DEQ in order to undergo individual 401 WQC evaluation and fulfill public participation requirements.

NWP 16 - Return Water from Contained Upland Disposal Areas: Water quality criteria and guidance values for toxics, per OAR 340-041-0033, are available in Tables 20, 33A, 33B, and 33C at: http://www.deq.state.or.us/wq/standards/toxics.htm#Cur.

16.1) Return to waters of the state of water removed with contaminated dredged material that exceeds a chronic or acute toxicity water quality standard is denied certification.

16.2 Water removed with contaminated dredged material that could or does exceed chronic water quality criteria must be contained and disposed of at an appropriately sized and sealed upland facility by evaporation or infiltration.

16.3) If a Modified Elutriate Test (MET) is performed for the known contaminants of concern (CoCs) and CoC concentrations are below DEQ chronic water quality criteria, return water discharge is not limited.

a. The MET must be performed before dredging.

b. DEQ must approve the list of CoCs and analytical method prior to the permittee performing the MET.

c. DEQ must review the results and provide approval of discharge from return water, in writing, prior to dredging.

NWP 20 – Response Operations for Oil and Hazardous Waste:

20.1) Coordination with DEQ's Emergency Response program is required. See: http://www.deq.state.or.us/lq/cu/emergency/index.htm.

NWP 22 – Removal of Vessels:

22.1) Coordination with DEQ's Emergency Response program is required. See: http://www.deq.state.or.us/lq/cu/emergency/index.htm.

NWP 31 – Maintenance of Existing Flood Control Facilities:

31.1) Projects at existing facilities in streams with Temperature TMDLs and that propose net permanent, riparian vegetation removal are denied certification.

31.2) To apply for certification for projects where riparian vegetation removal is unavoidable and vegetation cannot be re-established, the permittee must submit complete project information and water quality impacts analysis directly to DEQ in order to undergo individual 401 WQC evaluation and fulfill public participation requirements.

NWP 38 – Cleanup of Hazardous and Toxic Waste:

38.1) For removal of contaminated material from waters, dredging method is limited to diver assisted hydraulic suction, hydraulic suction, closed-lipped environmental bucket, or excavation in the dry.

a. For in-water isolation measures, the permittee is referred to Appendix D of DEQ's *Oregon Erosion and Sediment Control Manual*, April 2005 (or most current version), at: http://www.deq.state.or.us/wq/stormwater/docs/escmanual/appxd.pdf.

38.2) Discharge to waters resulting from dewatering during dredging or release of return water from an upland facility is prohibited except as provided below.

a. All water removed with sediment must be contained and disposed of at an appropriately sized and sealed upland facility by evaporation or infiltration; or,

b. A Modified Elutriate Test (MET) may be performed for the known CoCs and if CoC concentrations are below DEQ chronic water quality criteria, return water discharge is not limited.

i. The MET must be performed before dredging.

ii. DEQ must approve the list of CoCs and analytical method prior to the permittee performing the MET.

iii. DEQ must review the results and provide approval of discharge from dewatering and return water in writing prior to dredging.

38.3) Dredged material must be disposed of in compliance with DEQ Rules governing Hazardous Waste (see: http://www.deq.state.or.us/lq/hw/hwmanagement.htm) or Solid Waste (see: http://www.deq.state.or.us/lq/sw/index.htm).

38.4) The new in-water surface must be managed to prevent exposure or mobilization of contaminants.

NWP 41 - Reshaping Existing Drainage Ditches:

41.1) To the extent practicable, permittees must work from only one bank in order to minimize disturbance to existing vegetation, preferably the bank with the least existing vegetation;

41.2) Following authorized work, permittee must establish in-stream and riparian vegetation on reshaped channels and side-channels using native plant species wherever practicable. Plantings must be targeted to address water quality improvement (e.g., provide shade to water to reduce temperature or provide bank stability through root systems to limit sediment inputs). Planting options may include clustering or vegetating only one side of a channel, preferably the side which provides maximum shade.

NWP 42 – Recreational Facilities:

42.1) For facilities that include turf maintenance actions, the permittee must develop and implement an Integrated Pest Management Plan (IPM) that describes pest prevention, monitoring and control techniques with a focus on prevention of chemical and nutrient inputs to waters of the state, including maintenance of adequate buffers for pesticide application near salmonid streams, or coverage under an NPDES permit, if required (information is available at: http://www.deq.state.or.us/wq/wqpermit/pesticides.htm).

NWP 43 – Stormwater Management Facilities:

43.1) Projects that propose the following elements are denied certification:

a. In-stream stormwater facilities;

b. Discharge outfalls not subject to an NPDES permit; and,

c. Proposals that do not demonstrate pollutant removal to meet water quality standards prior to discharge to waters of the state.

43.2) To apply for certification for a project with in-stream stormwater facilities, without an NPDES permit, or without submittal of an approvable stormwater management plan per DEQ's Guidelines (at: http://www.deq.state.or.us/wq/sec401cert/docs/stormwaterGuidlines.pdf), the permittee must submit complete project information and water quality impacts analysis directly to DEQ in order to undergo individual 401 WQC evaluation and fulfill public participation requirements.

NWP 44 – Mining Activities:

44.1) Projects that do not obtain an NPDES 700-PM or Individual permit are denied certification.

44.2) To apply for certification for a project without an NPDES permit, the permittee must submit complete project information and water quality impacts analysis directly to DEQ in order to undergo individual 401 WQC evaluation and fulfill public participation requirements.

NWP 51 – Land-Based Renewable Energy Generation Facilities:

51.1) For associated utility lines with directionally-bored stream or wetland crossings proposed, condition 12.1) must be applied.

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 NMFS No:
NWR-2012-4014

December 20, 2012

Shawn Zinszer
Acting Chief, Regulatory Branch
U.S. Army Corps of Engineers
P.O. Box 2946
Portland, Oregon 97208-2946

Re: Endangered Species Act Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Stahl H.B. and JSB Farm River Pumping Stations and Intake Modification, Middle Columbia-Lake Wallula (HUC 170701010207), Columbia River (RM 301.6), Umatilla County, Oregon, (Corps No.: NWP-2012-329)

Dear Mr. Zinszer:

The enclosed document contains a biological opinion (opinion) prepared by the National Marine Fisheries Service (NMFS) pursuant to section 7(a)(2) of the Endangered Species Act (ESA) on the effects of the U.S. Army Corps of Engineers permitting of the Stahl H.B. and JSB Farm River Pumping Stations and Intake Modification pursuant to section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and section 404 of the Clean Water Act (33 U.S.C. 1251-1376, as amended). In this opinion, NMFS concludes that the proposed action is not likely to jeopardize the continued existence of Middle Columbia River steelhead (*Oncorhynchus mykiss)*, Upper Columbia River (UCR) steelhead, Snake River Basin steelhead, UCR spring-run Chinook salmon (*O. tshawytscha*), Snake River (SR) spring/summer run Chinook salmon, SR fall-run Chinook salmon, and SR sockeye salmon (*O. nerka*), or result in the destruction or adverse modification of their designated critical habitat.

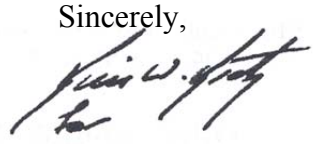
As required by section 7(b)(4) of the ESA, NMFS is providing an incidental take statement with the opinion. The incidental take statement describes reasonable and prudent measures NMFS considers appropriate to minimize the impact of incidental take associated with this action. The take statement sets forth nondiscretionary terms and conditions, including reporting requirements, that the Federal action agency must comply with to carry out the reasonable and prudent measures. Incidental take from actions that meet these terms and conditions will be exempt from the ESA's prohibition against the take of listed species.

This document also includes the results of our analysis of the action's likely effects on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), and includes two conservation recommendations to avoid, minimize, or otherwise offset potential adverse effects on EFH. These conservation recommendations are a subset of the ESA take statement's terms and conditions. Section 305(b)(4)(B) of the MSA requires Federal agencies to provide a detailed written response to NMFS within 30 days after receiving these recommendations.

If the response is inconsistent with the EFH conservation recommendations, the Corps must explain why the recommendations will not be followed, including the scientific justification for any disagreements over the effects of the action and the recommendations. In response to increased oversight of overall EFH program effectiveness by the Office of Management and Budget, NMFS established a quarterly reporting requirement to determine how many conservation recommendations are provided as part of each EFH consultation and how many are adopted by the action agency. Therefore, we request that in your statutory reply to the EFH portion of this consultation, you clearly identify the number of conservation recommendations accepted.

Please direct questions regarding this opinion to Rebecca Dittmann, fish biologist in the Eastern Oregon Branch of the Oregon State Habitat Office, at 541.975.1835, ext. 222.

Sincerely,



William W. Stelle, Jr.
Regional Administrator

cc: Gary Miller, USFWS,

Endangered Species Act Biological Opinion
and
Magnuson-Stevens Fishery Conservation and Management Act
Essential Fish Habitat Response
for the

Stahl H.B. and JSB Farm River Pumping Stations and Intake Modification
Middle Columbia-Lake Wallula (HUC 170701010207), Columbia River (RM 301.6)
Umatilla County, Oregon
(Corps No.: NWP-2012-329)

NMFS Consultation Number: NWR-2012-4014

Action Agency: U.S. Army Corps of Engineer

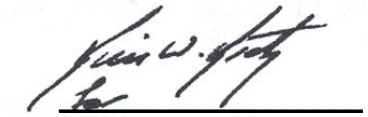
Affected Species and Determinations:

ESA-Listed Species	Status	Is Action Likely to Adversely Affect Species or Critical Habitat?	Is Action Likely To Jeopardize the Species?	Is Action Likely To Destroy or Adversely Modify Critical Habitat?
Middle Columbia River steelhead (*Oncorhynchus mykiss*)	Threatened	Yes	No	No
Upper Columbia River steelhead	Threatened	Yes	No	No
Snake River Basin steelhead	Threatened	Yes	No	No
Upper Columbia River spring-run Chinook (*O. tshawytscha*)	Endangered	Yes	No	No
Snake River spring/summer run Chinook	Threatened	Yes	No	No
Snake River fall-run Chinook	Threatened	Yes	No	No
Snake River sockeye salmon (*O. nerka)*	Endangered	Yes	No	No

Fishery Management Plan That Describes EFH in the Project Area	Does Action Have an Adverse Effect on EFH?	Are EFH Conservation Recommendations Provided?
Pacific Coast Salmon	Yes	Yes

Consultation
Conducted By: National Marine Fisheries Service, Northwest Region

Issued By:



William W. Stelle, Jr.
Regional Administrator

Date: December 20, 2012

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LIST OF ACRONYMS

BA	biological assessment
BMP	best management practice
CFR	Code of Federal Regulations
cfs	cubic feet per second
CHART	critical habitat analytical review team
COE	U.S. Army Corps of Engineers
DPS	distinct population segment
EFH	essential fish habitat
ESA	Endangered Species Act
ESU	evolutionarily significant unit
FR	Federal register
FCRPS	Federal Columbia River power system
HUC	hydrologic unit code
ICTRT	interior Columbia Basin technical recovery team
ITS	incidental take statement
MCR	middle Columbia River
MPG	major population group
MSA	Magnuson Stevens Act
NMFS	National Marine Fisheries Service
OHW	ordinary high water
ODEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish and Wildlife
PAH	polycyclic aromatic hydrocarbon
PCE	primary constituent element
RM	river mile
RPM	reasonable and prudent measure
TSS	total suspended solids
µg/L	microgram per liter
U.S.C.	United States Code
VSP	viable salmonid population

1. INTRODUCTION

This Introduction section provides information relevant to the other sections of this document and is incorporated by reference into Sections 2 and 3 below.

1.1 Background

The National Marine Fisheries Service (NMFS) prepared the biological opinion (opinion) and incidental take statement portions of this document in accordance with section 7(b) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531, *et seq*.), and implementing regulations at 50 CFR 402.

We also completed an essential fish habitat (EFH) consultation on the proposed action, in accordance with section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801, *et seq*.) and implementing regulations at 50 CFR 600.

The opinion, incidental take statement, and EFH conservation recommendations are each in compliance with the Data Quality Act (44 U.S.C. 3504(d)(1) *et seq*.) and they underwent pre-dissemination review.

The proposed action is located in migratory corridor habitat for Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*), Upper Columbia River (UCR) steelhead, Snake River Basin (SR) steelhead, UCR Chinook Spring-Run salmon (*O. tshawytscha*), SR Summer/Spring-Run Chinook salmon, SR Fall-Run Chinook salmon, and SR Sockeye (*O. nerka*).

1.2 Consultation History

On September 21, 2012 NMFS received a request from the U.S. Army Corps of Engineers (COE) to initiate section 7 consultation and MSA EFH consultation on the on the permitting of the Stahl and JSB Farm River Pumping Stations and Intake Modification, in Umatilla County, Oregon. This biological opinion is based on information provided in the September 11, 2012, biological assessment (BA), email, telephone conversations and other sources of information.

After review of an early BA, staff from the Oregon State Habitat Office coordinated with an engineer from our Hydropower Division and the project consultant to address questions and review the intake modification designs. The BA included engineering designs that meet NMFS fish passage criteria (NMFS 2011a). The plans were approved[1] by a hydraulic engineer from NMFS Northwest Region Hydropower Division. NMFS initiated consultation on September 21, 2012.

The proposed action is located in the Columbia River, which is migratory corridor habitat for Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*), Upper Columbia River (UCR) steelhead, Snake River Basin (SRB) steelhead, UCR Chinook spring-run salmon (*O. tschawytscha)*, Snake River (SR) summer/spring run Chinook salmon, SR fall-run Chinook

[1] Phone conversation between Rebecca Dittmann (NMFS fish biologist) and Larry Swenson (NMFS hydraulic engineer concerning new intake designs meeting NMFS fish passage criteria on September 10, 2012.

salmon, and SR sockeye salmon (*O. nerka*) and the area has been designated as EFH for Chinook and coho salmon (*O. kisutch*). The COE determined that the proposed action may adversely affect all of these species, their critical habitats, and EFH. A complete record of this consultation is on file at the Eastern Oregon Branch Office in La Grande, Oregon.

1.3 Proposed Action

"Action" means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration.

The COE proposes to authorize the Stahl and JSB Farm River Pumping Stations and Intake Modification along 130 feet (ft) of the Columbia River (Figure 1) by issuing a permit under section 10 of the Rivers and Harbors Act and section 404 of the Clean Water Act. The Stahl Farm and the JSH Farm are applicants for the permit for the project.

Figure 1. Project Site Area (Cambell and Van Staveren 2012)

All in-water construction and restoration work will be conducted during a 6-week period between January 1, 2013 and February 28, 2013. The scheduled work period lies within the Oregon Department of Fish and Wildlife's (ODFW) recommended in-water work window for this area (December 1 to March 31) (ODFW 2008). The reduced in-river work period will help minimize potential adverse effects to ESA- listed salmonids through use of the timeframe when there is the lowest potential of fish presence in the area.

The applicant proposes to move existing intake/fish screening facilities from the shore of the Columbia River into deeper water to avoid routine maintenance dredging at the present near-shore intake location, and to meet NMFS fish passage and screening criteria. Proposed intake modifications will include: (1) Replacing the existing cylindrical screens with enclosed cans; (2) connecting each can to a common manifold placed along the front of the existing stations; (3) extending new intake pipes from the manifolds to deeper water; and (4) installing new tee

screens at the end of each of the new intake pipes (see Figure 2 and submitted BA for specific engineering details).

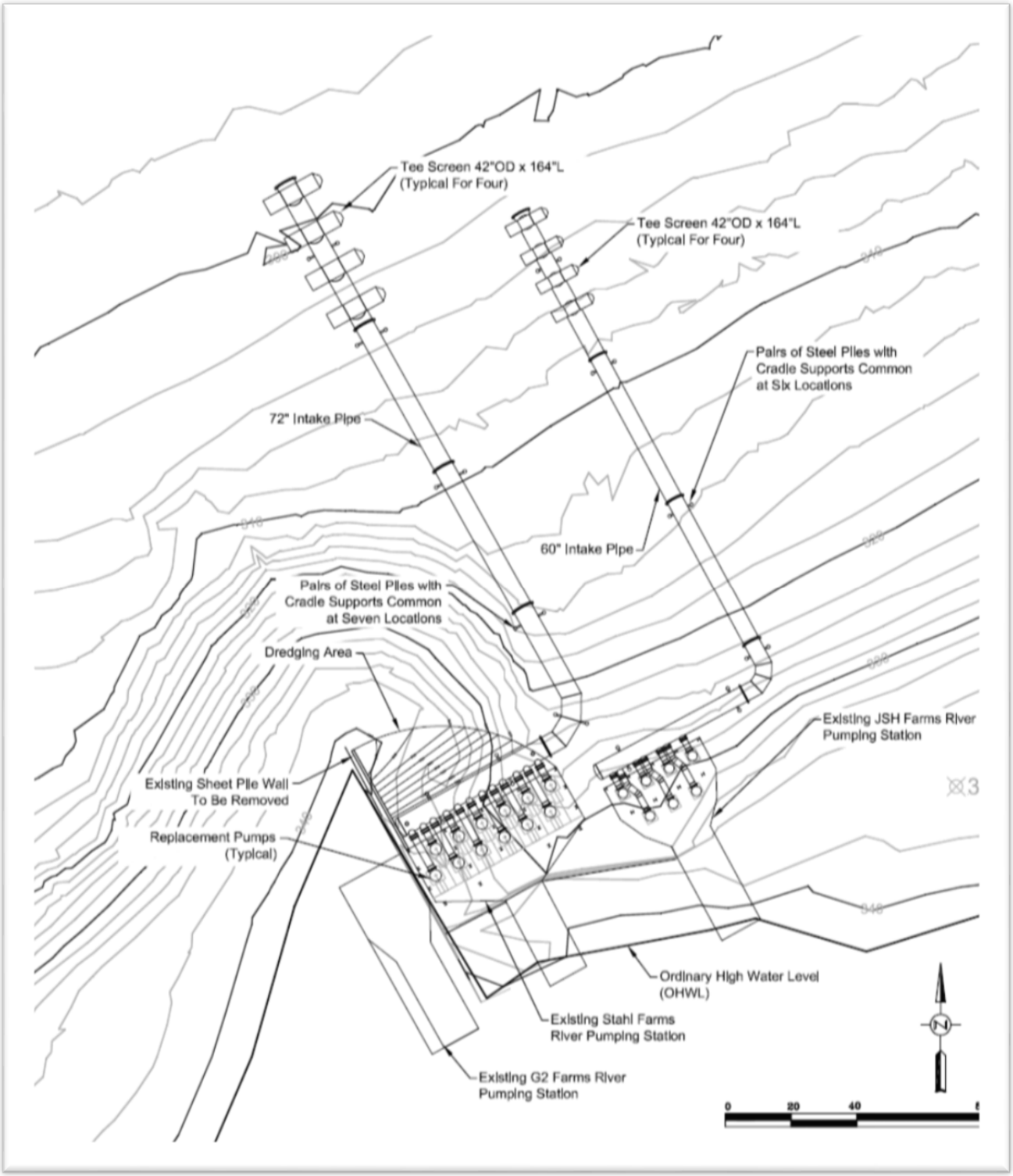

Figure 2. Project Design Overview for Stahl and JSH Farms Pumping Stations Modifications

The new fish screens will improve the intake approach velocity, thereby meeting NMFS' current fish screen criteria of preventing entrainment or impingement of juvenile salmonids during pumping operations. In addition, the deeper depth of the intakes should make it less likely to affect migrating juvenile salmonids, as this fish life stage prefers shoreline habitats less than 20 ft in depth. Installation of the replacement intake manifold at the pumping station will also require dredging of the river bank and near-shore river bottom to facilitate construction activities.

Installation of Extended Intake Pipes and Fish Screens

The two new intake pipes (a 72-inch diameter pipe for the Stahl Farm and a 60-inch diameter intake pipe for the JSH Farm) will each extend approximately 180 ft into the Columbia River from the existing pump stations. The new intake pipes will each be supported by pipe cradles (seven cradles for the Stahl Farm pipe and six cradles for the JSH Farm pipe). Each pipe cradle will be secured to the river bottom by a pair of 12.75-inch diameter steel piles (26 total piles) installed approximately 15 ft (or to depth of refusal due to rock) into the substrate with an APE Model 50 vibratory hammer. It is anticipated that each pile will require approximately 1 hour or less of vibratory hammer use for installation.

Four new intake tee screens (see Figure 2, above) will then be attached to the deep end of each of the new pipe extensions. Each of the new Stahl Farm intake tee screens will measure 5 ft in diameter by 18 ft 10 inches in length, and will be affixed with NMFS-approved slotted fish screen to ensure juvenile salmonids are not impinged or entrained onto the pump intake. The new JSH Farm intake screens will measure 3.5 ft in diameter by 13.5 ft in length, and will also be affixed with NMFS-approved fish screen. The difference in screen size dimensions is due to the different pumping capacity/requirements for each pipe (see below).

The pumps will be operated consistent with state water rights and are typically in operation during the months of April through October. The intake screens will be passively cleaned and will be equipped with a self-monitoring system that will measure hydraulic head and reduce intake velocities as necessary to maintain an approach velocity of 0.2 ft per second (fps), in compliance with NMFS criteria (NMFS 2011). Installation of the new intake pump and fish screens will be conducted using a crane and SCUBA divers operating from a floating barge. Given that the new intake tee screens will be used to withdraw water from the river, the existing intake screens will be replaced with new 42-inch diameter by 21-ft long pump cans.

The existing maximum allowable water withdrawal rates for the Stahl Farm and JSH Farm pumping stations are 60,143 gallons per minute (gpm) and 27,567 gpm, respectively. The actual amount pumped during any given season is dependent on the water requirements during that year. There will be no changes made to the existing pump capacities at these stations and there will be no increase in current allowable operational water withdrawal rates.

All heavy equipment *(i.e.,* crane and suction dredge) will access the project site via existing roadways, parking areas, disturbed upland areas, or floating barges. As such, no additional upland disturbance is anticipated. The following is a general sequence of proposed project activities:

1. Conduct overall project mobilization and implement environmental controls (*i.e.*, isolation and sediment control measures).
2. Install new pump cans at the Stahl Farm and JSH Farm pumping stations.
3. Dredge and dispose of accumulated sediment under and in front of the Stahl pumping station as required to install the new manifold.
4. Remove existing 35 ft long sheet pile wall at the Stahl pumping station and install 26 new steel piles (14 at the Stahl station and 12 at the JSH station) to support the new intake pipe cradles.
5. Install three pipe cradle assemblies in front of each of the existing pump stations and one cradle on the last set of piles.
6. Install the new manifolds and intake pipes.
7. Install each of the remaining pipe cradle assemblies under the new intake pipes.
8. Install four tee screens onto the new Stahl intake pipe, and four tee screens onto the new JSH intake pipe.
9. Install the pipes connecting the manifolds to each pump can.
10. Site restoration, as needed.

Dredging of Accumulated Sediment

Accumulated sediments (comprised primarily of course sand) will be removed from in front of and underneath the Stahl pumping station using a Mud Cat MC-915 or similar model suction dredge operating from a floating barge. Removal of the accumulated sediment will allow for installation of the new 72-inch diameter manifold. The resulting dredge material will be returned back into the river channel, approximately 300 ft downstream of the pumping station.

The dredge material will be carried from the suction dredge through a pipe that will discharge into the river at a depth of approximately 40 ft,, therefore allowing sediments to be redistributed downstream. All conditions of the Oregon Department of Environmental Quality's (ODEQ) 401 Water Quality Certification will be followed during proposed dredging activities.

The dredging area is approximately 1,700 square ft (ft^2) (0.04 acre), with a depth of 1 to 15 ft, depending on the depth of accumulated sediment. The bulk of the sediment removal will be required in front of the pump station in order to place the manifold at the correct elevation. The total estimated volume of sediment to be removed from underneath and in front of the pump station is approximately 300 cubic yards (yd^3). Following removal of the dredge material, an existing sheet pile wall that extends approximately 35 ft into the active river channel at the west end of the pumping station will be removed.

Given that the proposed dredging equipment will require back and forth movement within the relatively small dredging area, it will not be feasible to isolate the in-water work area during proposed dredging activities. Isolation curtains would inhibit the ability to properly operate the dredge. As such, to minimize impacts to water quality and ESA-listed fish species, all in-water work activities (including dredging) will be reduced to a period of two months (January 1 and February 28) within the ODFW-preferred In-water Work Window (IWWW) for the Middle Columbia River (December 1 – March 31). The IWWW is a period when ESA-listed salmonids are least likely to be present within the project area. In addition, the proposed dredging

equipment will utilize a relatively small dredging pump intake (8 inches in diameter) that will remain buried in the substrate up to 1 ft during dredging, and be equipped with a bar screen with 2-inch openings, and a mud shield to reduce re-suspension of solids. It will not be feasible to use a NMFS approved fish screen on the dredging pump intake given that it would accumulate course sediment and not allow for proper operational velocity of the suction dredge.

Sediment Analysis

Sediment sampling was conducted within the proposed dredging area on July 25, 2012, in accordance with the sediment Sampling and Analysis Plan (SAP) prepared for the project. Following review of the SAP, the interagency Portland Sediment Evaluation Team granted a no-test exclusion based on the small volume of material to be dredged and the distance of the project area from potential sources of contamination. The COE prepared a technical memorandum[2] regarding the SAP approval and no-test exclusion.

Site Restoration

It is anticipated that the proposed project will not require upland disturbance. However, in the event that an upland area is inadvertently disturbed during project staging or access, the area will be restored with the appropriate method (*e.g.*, grading, hydro-seed application, and/or native plantings).

1.4 Action Area

"Action area" means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). For this consultation, action area includes the in-water work area as well as habitat upstream or downstream from the project which may be impacted by this project. The area is defined to include the in- stream channel and substrate and any disturbed riparian or upland shorelines extending approximately 300 ft. upstream and 500 ft downstream of the proposed construction site. Turbidity created by the proposed action is expected to extend approximately up to 500 ft. downstream of the project area. In addition to the in-water work areas, all upland areas including riparian and floodplains affected by the project are part of the action area.

The project area is occupied by MCR steelhead, UCR steelhead, SRB steelhead, UCR Chinook salmon, SR spring/summer-run Chinook salmon, SR Fall Chinook salmon, and SR sockeye salmon and is designated as critical habitat for all these species.

Designated EFH for Chinook salmon and coho salmon occurs within the project area.

[2] Portland Sediment Evaluation Team Memorandum detailing the suitability of the dredging material for aquatic, unconfined placement dated September 27, 2012.

2. ENDANGERED SPECIES ACT: BIOLOGICAL OPINION AND INCIDENTAL TAKE STATEMENT

The ESA establishes a national program for conserving threatened and endangered species of fish, wildlife, plants, and the habitat on which they depend. Section 7(a)(2) of the ESA requires Federal agencies to consult with the United States Fish and Wildlife Service, NMFS, or both, to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or adversely modify or destroy their designated critical habitat. Section 7(b)(3) requires that at the conclusion of consultation, the Service provide an opinion stating how the agencies' actions will affect listed species or their critical habitat. If incidental take is expected, Section 7(b)(4) requires the provision of an incidental take statement (ITS) specifying the impact of any incidental taking, and including reasonable and prudent measures to minimize such impacts.

2.1 Approach to the Analysis

Section 7(a)(2) of the ESA requires Federal agencies, in consultation with NMFS, to insure that their actions are not likely to jeopardize the continued existence of endangered or threatened species, or adversely modify or destroy their designated critical habitat. The jeopardy analysis considers both survival and recovery of the species. The adverse modification analysis considers the impacts to the conservation value of the designated critical habitat.

"To jeopardize the continued existence of a listed species" means to engage in an action that would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR 402.02).

This biological opinion does not rely on the regulatory definition of 'destruction or adverse modification' of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statutory provisions of the ESA to complete the following analysis with respect to critical habitat.[3]

We will use the following approach to determine whether the proposed action described in Section 1.3 is likely to jeopardize listed species or destroy or adversely modify critical habitat:

- Identify the range-wide status of the species and critical habitat likely to be adversely affected by the proposed action.
- Describe the environmental baseline for the proposed action.
- Analyze the effects of the proposed actions.
- Describe any cumulative effects.
- Integrate and synthesize the above factors to assess the risk that the proposed action poses to species and critical habitat.
- Reach jeopardy and adverse modification conclusions.

[3] Memorandum from William T. Hogarth to Regional Administrators, Office of Protected Resources, NMFS (Application of the "Destruction or Adverse Modification" Standard Under Section 7(a)(2) of the Endangered Species Act) (November 7, 2005).

2.2 Rangewide Status of the Species and Critical Habitat

This opinion examines the status of each species that would be affected by the proposed action. The status is the level of risk that the listed species face, based on parameters considered in documents such as recovery plans, status reviews, and listing decisions. The species status section helps to inform the description of the species' current "reproduction, numbers, or distribution" as described in 50 CFR 402.02. The opinion also examines the condition of critical habitat throughout the designated area, evaluates the conservation value of the various watersheds and coastal and marine environments that make up the designated area, and discusses the current function of the essential physical and biological features that help to form that conservation value.

One factor affecting the status of ESA-listed species considered in this opinion, and aquatic habitat at large is climate change. Climate change is likely to play an increasingly important role in determining the abundance of ESA-listed species, and the conservation value of designated critical habitats, in the Pacific Northwest. These changes will not be spatially homogeneous across the Pacific Northwest. Areas with elevations high enough to maintain temperatures well below freezing for most of the winter and early spring would be less affected. Low-lying areas that historically have received scant precipitation contribute little to total streamflow and are likely to be more affected.

During the last century, average regional air temperatures increased by 1.5°F, and increased up to 4°F in some areas (USGCRP 2009). Warming is likely to continue during the next century as average temperatures increase another 3 to 10°F (USGCRP 2009). Overall, about one-third of the current cold-water fish habitat in the Pacific Northwest is likely to exceed key water temperature thresholds by the end of this century (USGCRP 2009).

Precipitation trends during the next century are less certain than for temperature but more precipitation is likely to occur during October through March and less during summer months, and more of the winter precipitation is likely to fall as rain rather than snow (ISAB 2007, USGCRP 2009). Where snow occurs, a warmer climate will cause earlier runoff so stream flows in late spring, summer, and fall will be lower and water temperatures will be warmer (ISAB 2007, USGCRP 2009).

Higher winter stream flows increase the risk that winter floods in sensitive watersheds will damage spawning redds and wash away incubating eggs (USGCRP 2009). Earlier peak stream flows will also flush some young salmon and steelhead from rivers to estuaries before they are physically mature, increasing stress and the risk of predation (USGCRP 2009). Lower stream flows and warmer water temperatures during summer will degrade summer rearing conditions, in part by increasing the prevalence and virulence of fish diseases and parasites (USGCRP 2009). Other adverse effects are likely to include altered migration patterns, accelerated embryo development, premature emergence of fry, variation in quality and quantity of tributary rearing habitat, and increased competition and predation risk from warm-water, non-native species (ISAB 2007).

The earth's oceans are also warming, with considerable interannual and inter-decadal variability superimposed on the longer-term trend (Bindoff *et al*. 2007). Historically, warm periods in the coastal Pacific Ocean have coincided with relatively low abundances of salmon and steelhead, while cooler ocean periods have coincided with relatively high abundances (Scheuerell and Williams 2005, Zabel *et al*. 2006, USGCRP 2009). Ocean conditions adverse to salmon and steelhead may be more likely under a warming climate (Zabel *et al*. 2006).

2.2.1 Status of the Species

For Pacific salmon, steelhead, and other relevant species NMFS commonly uses four parameters to assess the viability of the populations that, together, constitute the species: spatial structure, diversity, abundance, and productivity (McElhany *et al*. 2000). These "viable salmonid population" (VSP) criteria, therefore, encompass the species' "reproduction, numbers, or distribution" as described in 50 CFR 402.02. When these parameters are collectively at appropriate levels, they maintain a population's capacity to adapt to various environmental conditions and allow it to sustain itself in the natural environment. These attributes are influenced by survival, behavior, and experiences throughout a species' entire life cycle, and these characteristics, in turn, are influenced by habitat and other environmental conditions.

"Spatial structure" refers both to the spatial distribution of individuals in the population and the processes that generate that distribution. A population's spatial structure depends fundamentally on habitat quality and spatial configuration and the dynamics and dispersal characteristics of individuals in the population.

"Diversity" refers to the distribution of traits within and among populations. These range in scale from DNA sequence variation at single genes to complex life history traits (McElhany *et al.* 2000).

"Abundance" generally refers to the number of naturally-produced adults (*i.e*., the progeny of naturally-spawning parents) in the natural environment (*e.g*., on spawning grounds).

"Productivity," as applied to viability factors, refers to the entire life cycle; *i.e*., the number of naturally-spawning adults produced per parent. When progeny replace or exceed the number of parents, a population is stable or increasing. When progeny fail to replace the number of parents, the population is declining. McElhany *et al*. (2000) use the terms "population growth rate" and "productivity" interchangeably when referring to production over the entire life cycle. They also refer to "trend in abundance," which is the manifestation of long-term population growth rate.

For species with multiple populations, once the biological status of a species' populations has been determined, NMFS assesses the status of the entire species using criteria for groups of populations, as described in recovery plans and guidance documents from technical recovery teams. Considerations for species viability include having multiple populations that are viable, ensuring that populations with unique life histories and phenotypes are viable, and that some viable populations are both widespread to avoid concurrent extinctions from mass catastrophes and spatially close to allow functioning as meta-populations (McElhany *et al.* 2000).

The summaries that follow describe the status of the 7 ESA-listed species, and their designated critical habitats, that occur within the geographic area of this proposed action and are considered in this opinion. More detailed information on the status and trends of these listed resources, and their biology and ecology, are in the listing regulations and critical habitat designations published in the Federal Register (Table 1).

Table 1. Listing status, status of critical habitat designations and protective regulations, and relevant Federal Register (FR) decision notices for ESA-listed species considered in this opinion. Listing status: 'T' means listed as threatened under the ESA; 'E' means listed as endangered.

Species	Listing Status	Critical Habitat	Protective Regulations
Chinook salmon *(Oncorhynchus tshawytscha)*			
Upper Columbia River spring-run	E 6/28/05; 70 FR 37160	9/02/05; 70 FR 52630	ESA section 9 applies
Snake River spring/summer-run	T 6/28/05; 70 FR 37160	10/25/99; 64 FR 57399	6/28/05; 70 FR 37160
Snake River fall-run	T 6/28/05; 70 FR 37160	12/28/93; 58 FR 68543	6/28/05; 70 FR 37160
Sockeye salmon *(O. nerka)*			
Snake River	E 8/15/11; 70 FR 37160	12/28/93; 58 FR 68543	ESA section 9 applies
Steelhead (*O. mykiss*)			
Middle Columbia River	T 1/5/06; 71 FR 834	9/02/05; 70 FR 52630	6/28/05; 70 FR 37160
Upper Columbia River	T 1/5/06; 71 FR 834	9/02/05; 70 FR 52630	2/1/06; 71 FR 5178
Snake River Basin	T 1/5/06; 71 FR 834	9/02/05; 70 FR 52630	6/28/05; 70 FR 37160

NMFS established recovery domains to better integrate recovery planning information that NMFS is developing on the conservation status of the species and critical habitats considered in this consultation. Recovery domains are the geographically-based areas that NMFS is using to prepare multi-species recovery plans. All the seven species within this consultation are with the Interior Columbia Basin recovery domain (Table 2).

Table 2. Recovery planning domains identified by NMFS and their ESA-listed salmon and steelhead species.

Recovery Domain	Species
Interior Columbia (IC)	UCR spring-run Chinook salmon SR spring/summer-run Chinook salmon SR fall-run Chinook salmon SR sockeye salmon UCR steelhead MCR steelhead SRB steelhead

When NMFS began recovery planning for salmon and steelhead in the Interior Columbia Basin, we convened a technical recovery team (ICTRT) comprised of Federal, state, and tribal biologists as well as scientists from private consulting firms and academia. This team assisted NMFS in developing information on historical population structure and also produced ESA technical products to support development of ESA recovery criteria. As part of this effort, the

ICTRT identified independent populations for each Interior Columbia Basin ESA-listed species, and grouped them together into genetically similar major population groups (MPGs). Most ESUs and DPSs are made up of several MPGs.

The ICTRT also recommended population-specific biological viability criteria for each of the individual populations for each ESU and DPS. These criteria are integrated to develop a total population viability rating. The population viability ratings, in order of increasing risk, are highly viable, viable, moderate risk, and high risk. A further bifurcation occurs at the moderate risk rating. Populations rated at moderate risk are candidates for achieving a "maintained" status.

Additional criteria to be identified in the Recovery Plan must be met before a population at moderate risk can be considered "maintained." Populations that do not meet these additional criteria would remain rated at moderate risk and would generally not contribute to viability at the MPG level.

To date, the TRTs have divided the seven species of salmon and steelhead considered in this opinion into a total of 82 populations within the Interior Columbia Basin. The overall viability of a species is a function of the VSP attributes of its constituent populations. The size and distribution of the populations considered in this opinion generally have declined over the last few decades due to natural phenomena and human activity, including climate change (as described in Section 2.2), the operation of hydropower systems, over-harvest, effects of hatcheries, and habitat degradation. Enlarged populations of terns, seals, California sea lions, and other aquatic predators in the Pacific Northwest may be limiting the productivity of some Pacific salmon and steelhead populations (Ford 2011).

Viability status or probability is described below for each of the populations considered in this opinion.

Interior Columbia Recovery Domain. As described earlier, species in the Interior Columbia recovery domain include UCR spring-run Chinook salmon, SR spring/summer-run Chinook salmon, SR fall-run Chinook salmon, SR sockeye salmon, UCR steelhead, MCR steelhead, and SRB steelhead. The ICTRT identified 82 populations of those species based on genetic, geographic (hydrographic), and habitat characteristics (Table 3). All 82 populations identified use the mainstem of the Columbia River, and the Columbia River estuary, or part thereof, for migration, rearing, and smoltification.

Table 3. Populations of ESA-listed salmon and steelhead in the IC recovery domain.

Species	Populations
UCR spring-run Chinook salmon	3
SR spring/summer-run Chinook salmon	32
SR fall-run Chinook salmon	1
SR sockeye salmon	1
MCR steelhead	17
UCR steelhead	4
SRB steelhead	24

The ICTRT also recommended viability criteria that follow the VSP framework (McElhany *et al.* 2006) and described biological or physical performance conditions that, when met, indicate a population or species has a 5% or less risk of extinction over a 100-year period (ICTRT 2007; NRC 1995).

Status of UCR Spring-run Chinook Salmon

Spatial Structure and Diversity**.** This species includes all naturally-spawned populations of Chinook salmon in all river reaches accessible to Chinook salmon in Columbia River tributaries upstream of the Rock Island Dam and downstream of Chief Joseph Dam (excluding the Okanogan River), the Columbia River upstream to Chief Joseph Dam, and progeny of six artificial propagation programs. The ICTRT identified four independent populations of UCR spring-run Chinook salmon in the upriver tributaries of Wenatchee, Entiat, Methow, and Okanogan (extirpated), but no major groups due to the relatively small geographic area affected (Ford 2011; ICTRT 2003)(Table 5).

Table 4. Scores for the key elements (A&P, diversity, and integrated SS/D) used to determine current overall viability risk for spring-run UCR Chinook salmon (Ford 2011). Risk ratings range from very low (VL), low (L), moderate (M), high (H), to very high (VH) and extirpated (E).

Population	A&P	Diversity	Integrated SS/D	Overall Viability Risk
Wenatchee River	H	H	H	H
Entiat River	H	H	H	H
Methow River	H	H	H	H
Okanogan River				E

The composite SS/D risks for all three of the extant populations in this MPG are at "high" risk. The spatial processes component of the SS/D risk is "low" for the Wenatchee River and Methow River populations and "moderate" for the Entiat River (loss of production in lower section increases effective distance to other populations). All three of the extant populations in this MPG are at "high" risk for diversity, driven primarily by chronically high proportions of hatchery-origin spawners in natural spawning areas and lack of genetic diversity among the natural-origin spawners (Ford 2011).

Increases in natural origin abundance relative to the extremely low spawning levels observed in the mid-1990s are encouraging; however, average productivity levels remain extremely low. Overall, the viability of Upper Columbia Spring Chinook salmon ESU has likely improved somewhat since the last status review, but the ESU is still clearly at "moderate-to-high" risk of extinction (Ford 2011).

Abundance and Productivity. UCR spring-run Chinook salmon is not currently meeting the viability criteria (adapted from the ICTRT) in the Upper Columbia Recovery Plan. A&P remains at "high" risk for each of the three extant populations in this MPG/ESU (Table 4). The 10-year geometric mean abundance of adult natural origin spawners has increased for each

population relative to the levels for the 1981-2003 series, but the estimates remain below the corresponding ICTRT thresholds. Estimated productivity (spawner to spawner return rate at low to moderate escapements) was on average lower over the years 1987-2009 than for the previous period. The combinations of current abundance and productivity for each population result in a "high" risk rating.

Limiting Factors include (NOAA Fisheries 2011; UCSRB 2007):

- Mainstem Columbia River hydropower–related adverse effects: upstream and downstream fish passage, ecosystem structure and function, flows, and water quality
- Degraded freshwater habitat: Floodplain connectivity and function, channel structure and complexity, riparian areas and large woody debris recruitment, stream flow, and water quality have been degraded as a result of cumulative impacts of agriculture, forestry, and development
- Degraded estuarine and nearshore marine habitat
- Hatchery related effects: including past introductions and persistence of non-native (exotic) fish species continues to affect habitat conditions for listed species
- Harvest in Columbia River fisheries

Status of SR Spring/summer-run Chinook Salmon

Spatial Structure and Diversity**.** This species includes all naturally-spawned populations of spring/summer-run Chinook salmon in the mainstem Snake River and the Tucannon River, Grande Ronde River, Imnaha River, and Salmon River subbasins; and progeny of fifteen artificial propagation programs. The ICTRT identified 28 extant and 4 extirpated populations of SR spring/summer-run Chinook salmon, and aggregated these into major population groups (Ford 2011; ICTRT 2003). Each of these populations faces a "high" risk of extinction (Ford 2011) (Table 5).

Table 5. SR spring/summer-run Chinook salmon ecological subregions, populations, and scores for the key elements (A&P, diversity, and integrated SS/D) used to determine current overall viability risk for SR spring/summer-run Chinook salmon (Ford 2011). Risk ratings range from very low (VL), low (L), moderate (M), high (H), to very high (VH), and extirpated (E).

Ecological Subregions	Spawning Populations (Watershed)	A&P	Diversity	Integrated SS/D	Overall Viability Risk
Lower Snake River	Tucannon River	H	M	M	H
	Asotin River				E
Grande Ronde and Imnaha rivers	Wenaha River	H	M	M	H
	Lostine/Wallowa River	H	M	M	H
	Minam River	H	M	M	H
	Catherine Creek	H	M	M	H
	Upper Grande Ronde R.	H	M	H	H
	Imnaha River	H	M	M	H
	Big Sheep Creek				E
	Lookingglass Creek				E

Ecological Subregions	Spawning Populations (Watershed)	A&P	Diversity	Integrated SS/D	Overall Viability Risk
South Fork Salmon River	Little Salmon River	*	*	*	H
	South Fork mainstem	H	M	M	H
	Secesh River	H	L	L	H
	EF/Johnson Creek	H	L	L	H
Middle Fork Salmon River	Chamberlin Creek	H	L	L	H
	Big Creek	H	M	M	H
	Lower MF Salmon	H	M	M	H
	Camas Creek	H	M	M	H
	Loon Creek	H	M	M	H
	Upper MF Salmon	H	M	M	H
	Pistol Creek				E
	Sulphur Creek	H	M	M	H
	Bear Valley Creek	H	L	L	H
	Marsh Creek	H	L	L	H
Upper Mainstem Salmon	N. Fork Salmon River	H	L	L	H
	Lemhi River	H	H	H	H
	Pahsimeroi River	H	H	H	H
	Upper Salmon-lower mainstem	H	L	L	H
	East Fork Salmon River	H	H	H	H
	Yankee Fork	H	H	H	H
	Valley Creek	H	M	M	H
	Upper Salmon main	H	M	M	H
	Panther Creek				E

* Insufficient data.

Abundance and Productivity. Population level status ratings remain at "high" risk across all MPGs within the ESU, although recent natural spawning abundance estimates have increased, all populations remain below minimum natural origin abundance thresholds (Table 6). Spawning escapements in the most recent years in each series are generally well below the peak returns but above the extreme low levels in the mid-1990s. Relatively low natural production rates and spawning levels below minimum abundance thresholds remain a major concern across the ESU.

The ability of SR spring/summer-run Chinook salmon populations to be self-sustaining through normal periods of relatively low ocean survival remains uncertain. Factors cited by Good (2005) remain as concerns or key uncertainties for several populations. Overall, the new information considered does not indicate a change in the biological risk category since the last status review (Ford 2011).

Limiting Factors include (NOAA Fisheries 2011):

- Degraded freshwater habitat: Floodplain connectivity and function, channel structure and complexity, riparian areas and large wood supply, stream substrate, elevated water temperature, stream flow, and water quality have been degraded as a result of cumulative impacts of agriculture, forestry, and development
- Mainstem Columbia River and Snake River hydropower impacts

- Harvest-related effects
- Predation

Status of SR Fall-run Chinook Salmon

Spatial Structure and Diversity**.** This species includes all naturally-spawned populations of fall-run Chinook salmon in the mainstem Snake River below Hells Canyon Dam, and in the Tucannon River, Grande Ronde River, Imnaha River, Salmon River, and Clearwater River, and progeny of four artificial propagation programs. The ICTRT identified three populations of this species, although only the lower mainstem population exists at present, and it spawns in the lower main stem of the Clearwater, Imnaha, Grande Ronde, Salmon and Tucannon rivers. The extant population of Snake River fall-run Chinook salmon is the only remaining population from an historical ESU that also included large mainstem populations upstream of the current location of the Hells Canyon Dam complex (Ford 2011; ICTRT 2003). The population is at moderate risk for diversity and spatial structure. Overall, the new information considered does not indicate a change in the biological risk category since the last status review (Ford 2011).

Abundance and Productivity. The recent increases in natural origin abundance are encouraging. However, hatchery origin spawner proportions have increased dramatically in recent years – on average, 78% of the estimated adult spawners have been hatchery origin over the most recent brood cycle. The apparent leveling off of natural returns in spite of the increases in total brood year spawners may indicate that density dependent habitat effects are influencing production or that high hatchery proportions may be influencing natural production rates. The A&P risk rating for the population is "moderate." Given the combination of current A&P and SS/D ratings summarized above, the overall viability rating for Lower SR fall Chinook salmon would be rated as "maintained."[4]

Limiting Factors include (NOAA Fisheries 2011):

- Degraded freshwater habitat: Floodplain connectivity and function, and channel structure and complexity have been degraded as a result of cumulative impacts of agriculture, forestry, and development.
- Harvest-related effects
- Loss of access to historic habitat above Hells Canyon and other Snake River dams
- Mainstem Columbia River and Snake River hydropower impacts
- Hatchery-related effects
- Degraded estuarine and nearshore habitat

Status of SR Sockeye Salmon

Spatial Structure and Diversity**.** This species includes all anadromous and residual sockeye salmon from the Snake River basin, Idaho, and artificially-propagated sockeye salmon from the Redfish Lake captive propagation program. The ICTRT identified historical sockeye salmon production in at least five Stanley Basin and Sawtooth Valley lakes and in lake systems

[4] "Maintained" population status is for populations that do not meet the criteria for a viable population but do support ecological functions and preserve options for ESU/DPS recovery.

associated with Snake River tributaries currently cut off to anadromous access (*e.g.,* Wallowa and Payette Lakes), although current returns of SR sockeye salmon are extremely low and limited to Redfish Lake (ICTRT 2007).

Abundance and Productivity. This species is still at extremely high risk across all four basic risk measures (abundance, productivity, spatial structure and diversity). Although the captive brood program has been successful in providing substantial numbers of hatchery produced *O. nerka* for use in supplementation efforts, substantial increases in survival rates across life history stages must occur to re-establish sustainable natural production (Hebdon *et al.* 2004; Keefer *et al.* 2008). Overall, although the risk status of the Snake River sockeye salmon ESU appears to be on an improving trend, the new information considered does not indicate a change in the biological risk category since the last status review (Ford 2011).

Limiting Factors. The key factor limiting recovery of SR sockeye salmon ESU is survival outside of the Stanley Basin. Portions of the migration corridor in the Salmon River are impeded by water quality and temperature (Idaho Department of Environmental Quality 2011). Increased temperatures likely reduce the survival of adult sockeye returning to the Stanley Basin. The natural hydrological regime in the upper mainstem Salmon River Basin has been altered by water withdrawals. In most years, sockeye adult returns to Lower Granite suffer catastrophic losses (Reed *et al.* 2003) (*e.g.*, > 50% mortality in one year) before reaching the Stanley Basin, although the factors causing these losses have not been identified. In the Columbia and lower Snake River migration corridor, predation rates on juvenile sockeye salmon are unknown, but terns and cormorants consume 12% of all salmon smolts reaching the estuary, and piscivorous fish consume an estimated 8% of migrating juvenile salmon (NOAA Fisheries 2011).

Status of MCR Steelhead

Spatial Structure and Diversity**.** This species includes all naturally-spawned steelhead populations below natural and artificial impassable barriers in streams from above the Wind River, Washington, and the Hood River, Oregon (exclusive), upstream to, and including, the Yakima River, Washington, excluding steelhead from the Snake River basin; and progeny of seven artificial propagation programs. The ICTRT identified 17 extant populations in this DPS (ICTRT 2003). The populations fall into four major population groups: the Yakima River Basin (four extant populations), the Umatilla/Walla-Walla drainages (three extant and one extirpated populations); the John Day River drainage (five extant populations) and the Eastern Cascades group (five extant and two extirpated populations) (Table 6) (Ford 2011; NMFS 2009).

Table 6. Ecological subregions, populations, and scores for the key elements (A&P, diversity, and integrated SS/D) used to determine current overall viability risk for MCR steelhead (Ford 2011; NMFS 2009). Risk ratings range from very low (VL), low (L), moderate (M), high (H), to very high (VH), and extirpated (E). Maintained (MT) population status indicates that the population does not meet the criteria for a viable population but does support ecological functions and preserve options for recovery of the DPS.

Ecological Subregions	Population (Watershed)	A&P	Diversity	Integrated SS/D	Overall Viability Risk
Cascade Eastern Slope Tributaries	Fifteenmile Creek	L	L	L	Viable
	Klickitat River	M	M	M	MT?
	Eastside Deschutes River	L	M	M	Viable
	Westside Deschutes River	H	M	M	H*
	Rock Creek	H	M	M	H?
	White Salmon				E*
	Crooked River				E*
John Day River	Upper Mainstem	M	M	M	MT
	North Fork	VL	L	L	Highly Viable
	Middle Fork	M	M	M	MT
	South Fork	M	M	M	MT
	Lower Mainstem	M	M	M	MT
Walla Walla and Umatilla rivers	Umatilla River	M	M	M	MT
	Touchet River	M	M	M	H
	Walla Walla River	M	M	M	MT
Yakima River	Satus Creek	M	M	M	Viable (MT)
	Toppenish Creek	M	M	M	Viable (MT)
	Naches River	H	M	M	H
	Upper Yakima	H	H	H	H

* Re-introduction efforts underway (NMFS 2009).

Straying frequencies into at least the Lower John Day River population are high. Out-of-basin hatchery stray proportions, although reduced, remain very high in the Deschutes River basin.

Abundance and Productivity. Returns to the Yakima River basin and to the Umatilla and Walla Walla Rivers have been higher over the most recent brood cycle, while natural origin returns to the John Day River have decreased. There have been improvements in the viability ratings for some of the component populations, but the MCR steelhead DPS is not currently meeting the viability criteria (adopted from the ICTRT) in the MCR steelhead recovery plan (NMFS 2009). In addition, several of the factors cited by Good (2005) remain as concerns or key uncertainties. Natural origin spawning estimates of populations have been highly variable with respect to meeting minimum abundance thresholds. Overall, the new information considered does not indicate a change in the biological risk category since the last status review (Ford 2011).

Limiting Factors include (NMFS 2009; NOAA Fisheries 2011):

- Degraded freshwater habitat: Floodplain connectivity and function, channel structure and complexity, riparian areas, fish passage, stream substrate, stream flow, and water quality have been degraded as a result of cumulative impacts of agriculture, forestry, tributary hydro system activities, and development
- Mainstem Columbia River hydropower–related impacts
- Degraded estuarine and nearshore marine habitat
- Hatchery-related effects
- Harvest-related effects
- Effects of predation, competition, and disease

Status of UCR Steelhead

Spatial Structure and Diversity**.** This species includes all naturally-spawned steelhead populations below natural and manmade impassable barriers in streams in the Columbia River Basin upstream from the Yakima River, Washington, to the U.S.-Canada border, and progeny of six artificial propagation programs. Four independent populations of UCR steelhead were identified by the ICTRT in the same upriver tributaries as for UC spring-run Chinook salmon (*i.e.*, Wenatchee, Entiat, Methow, and Okanogan; Table 7) and, similarly, no major population groupings were identified due to the relatively small geographic area involved (Ford 2011; ICTRT 2003). All extant populations are considered to be at high risk of extinction (Table 8)(Ford 2011). With the exception of the Okanogan population, the Upper Columbia populations rated as "low" risk for spatial structure. The "high" risk ratings for SS/D are largely driven by chronic high levels of hatchery spawners within natural spawning areas and lack of genetic diversity among the populations. The proportions of hatchery origin returns in natural spawning areas remain extremely high across the DPS, especially in the Methow and Okanogan River populations. Overall, the new information considered does not indicate a change in the biological risk category since the last status review (Ford 2011).

Table 7. Summary of the key elements (A&P, diversity, and integrated SS/D) and scores used to determine current overall viability risk for UCR steelhead populations (Ford 2011). Risk ratings range from very low (VL), low (L), moderate (M), high (H), to very high (VH).

Population (Watershed)	A&P	Diversity	Integrated SS/D	Overall Viability Risk
Wenatchee River	H	H	H	H
Entiat River	H	H	H	H
Methow River	H	H	H	H
Okanogan River	H	H	H	H

Abundance and Productivity. Upper Columbia steelhead populations have increased in natural origin abundance in recent years, but productivity levels remain low. The modest improvements in natural returns in recent years are probably primarily the result of several years of relatively good natural survival in the ocean and tributary habitats.

Limiting Factors include (NOAA Fisheries 2011; UCSRB 2007):

- Mainstem Columbia River hydropower–related adverse effects
- Impaired tributary fish passage
- Degraded freshwater habitat: Floodplain connectivity and function, channel structure and complexity, riparian areas and large woody debris recruitment, stream flow, and water quality have been degraded as a result of cumulative impacts of agriculture, forestry, and development.
- Effects of predation, competition, and disease mortality: Fish management, including past introductions and persistence of non-native (exotic) fish species continues to affect habitat conditions for listed species.
- Hatchery-related effects
- Harvest-related effects

Status of SRB Steelhead

Spatial Structure and Diversity**.** This species includes all naturally-spawned steelhead populations below natural and manmade impassable barriers in streams in the Snake River Basin of southeast Washington, northeast Oregon, and Idaho, and progeny of six artificial propagation programs. The ICTRT identified 24 historical populations in five major groups (Table 8) (Ford 2011; ICTRT 2011). The ICTRT has not assessed the viability of this species. The relative proportion of hatchery fish in natural spawning areas near major hatchery release sites is highly uncertain. There is little evidence for substantial change in ESU viability relative to the previous BRT and ICTRT reviews. Overall, therefore, the new information considered does not indicate a change in the biological risk category since the last status review (Ford 2011).

Table 8. Ecological subregions, populations, and scores for the key elements (A&P, diversity, and integrated SS/D) used to determine current overall viability risk for SRB steelhead (Ford 2011; NMFS 2011b). Risk ratings range from very low (VL), low (L), moderate (M), high (H), to very high (VH). Maintained (MT) population status indicates that the population does not meet the criteria for a viable population but does support ecological functions and preserve options for recovery of the DPS.

Ecological subregions	Spawning Populations (Watershed)	A&P	Diversity	Integrated SS/D	Overall Viability Risk*
Lower Snake River	Tucannon River	**	M	M	H
	Asotin Creek	**	M	M	MT
Grande Ronde River	Lower Grande Ronde	**	M	M	Not rated
	Joseph Creek	VL	L	L	Highly viable
	Upper Grande Ronde	M	M	M	MT
	Wallowa River	**	L	L	H
Clearwater River	Lower Clearwater	M	L	L	MT
	South Fork Clearwater	H	M	M	H
	Lolo Creek	H	M	M	H
	Selway River	H	L	L	H
	Lochsa River	H	L	L	H
Salmon River	Little Salmon River	**	M	M	MT
	South Fork Salmon	**	L	L	H
	Secesh River	**	L	L	H
	Chamberlain Creek	**	L	L	H
	Lower MF Salmon	**	L	L	H
	Upper MF Salmon	**	L	L	H
	Panther Creek	**	M	H	H
	North Fork Salmon	**	M	M	MT
	Lemhi River	**	M	M	MT
	Pahsimeroi River	**	M	M	MT
	East Fork Salmon	**	M	M	MT
	Upper Main Salmon	**	M	M	MT
Imnaha	Imnaha River	M		M	MT

* There is uncertainty in these ratings due to a lack of population-specific data.

** Insufficient data.

Abundance and Productivity. The level of natural production in the two populations with full data series and the Asotin Creek index reaches is encouraging, but the status of most populations in this DPS remains highly uncertain. Population-level natural origin abundance and productivity inferred from aggregate data and juvenile indices indicate that many populations are likely below the minimum combinations defined by the ICTRT viability criteria.

Limiting Factors include (ICTRT 2011;NOAA Fisheries 2011):

- Mainstem Columbia River hydropower–related adverse effects
- Impaired tributary fish passage

- Degraded freshwater habitat: Floodplain connectivity and function, channel structure and complexity, riparian areas and large woody debris recruitment, stream flow, and water quality have been degraded as a result of cumulative impacts of agriculture, forestry, and development
- Impaired water quality and increased water temperature
- Related harvest effects, particularly for B-run steelhead
- Predation
- Genetic diversity effects from out-of-population hatchery releases

2.2.2 Status of the Critical Habitats

We reviewed the status of designated critical habitat affected by the proposed action by examining the condition and trends of essential physical and biological features throughout the designated area. These features are essential to the conservation of the listed species because they support one or more of the species' life stages (*e.g.*, sites with conditions that support spawning, rearing, migration and foraging).

For salmon and steelhead, NMFS ranked watersheds within designated critical habitat at the scale of the fifth-field hydrologic unit code (HUC5) in terms of the conservation value they provide to each listed species they support.[5] The conservation rankings are high, medium, or low. To determine the conservation value of each watershed to species viability, NMFS' critical habitat analytical review teams (CHARTs) evaluated the quantity and quality of habitat features (for example, spawning gravels, wood and water condition, side channels), the relationship of the area compared to other areas within the species' range, and the significance to the species of the population occupying that area (NOAA Fisheries 2005). Thus, even a location that has poor quality of habitat could be ranked with a high conservation value if it were essential due to factors such as limited availability (*e.g.*, one of a very few spawning areas), a unique contribution of the population it served (*e.g.*, a population at the extreme end of geographic distribution), or the fact that it serves another important role (*e.g.*, obligate area for migration to upstream spawning areas).

This section examines critical habitat condition for UCR spring-run Chinook salmon, SR spring/summer run Chinook salmon, SR fall-run Chinook salmon, SR sockeye salmon, MCR steelhead, UCR steelhead, and SRB steelhead in the Interior Columbia recovery domains.

The physical or biological features of freshwater spawning and incubation sites include water flow, quality and temperature conditions and suitable substrate for spawning and incubation, as well as migratory access for adults and juveniles (Tables 9 and 10). These features are essential to conservation because without them the species cannot successfully spawn and produce offspring. The physical or biological features of freshwater migration corridors associated with spawning and incubation sites include water flow, quality and temperature conditions supporting larval and adult mobility, abundant prey items supporting larval feeding after yolk sac depletion, and free passage (no obstructions) for adults and juveniles. These features are essential to

[5] The conservation value of a site depends upon "(1) the importance of the populations associated with a site to the ESU [or DPS] conservation, and (2) the contribution of that site to the conservation of the population through demonstrated or potential productivity of the area" (NOAA Fisheries 2005).

conservation because they allow adult fish to swim upstream to reach spawning areas and they allow larval fish to proceed downstream and reach the ocean.

Table 9. PCEs of critical habitats designated for ESA-listed salmon and steelhead species considered in the opinion (except SR spring/summer-run Chinook salmon, SR fall-run Chinook salmon, and SR sockeye salmon), and corresponding species life history events.

Primary Constituent Elements		**Species Life History Event**
Site Type	**Site Attribute**	
Freshwater spawning	Substrate Water quality Water quantity	Adult spawning Embryo incubation Alevin growth and development
Freshwater rearing	Floodplain connectivity Forage Natural cover Water quality Water quantity	Fry emergence from gravel Fry/parr/smolt growth and development
Freshwater migration	Free of artificial obstruction Natural cover Water quality Water quantity	Adult sexual maturation Adult upstream migration and holding Kelt (steelhead) seaward migration Fry/parr/smolt growth, development, and seaward migration
Estuarine areas	Forage Free of artificial obstruction Natural cover Salinity Water quality Water quantity	Adult sexual maturation and "reverse smoltification" Adult upstream migration and holding Kelt (steelhead) seaward migration Fry/parr/smolt growth, development, and seaward migration
Nearshore marine areas	Forage Free of artificial obstruction Natural cover Water quantity Water quality	Adult growth and sexual maturation Adult spawning migration Nearshore juvenile rearing
Offshore marine areas	Forage Water quality	Adult growth and sexual maturation Adult spawning migration Subadult rearing

Table 10. PCEs of critical habitats designated for SR spring/summer-run Chinook salmon, SR fall-run Chinook salmon, SR sockeye salmon, and corresponding species life history events.

Primary Constituent Elements		Species Life History Event
Site	**Site Attribute**	
Spawning and juvenile rearing areas	Access (sockeye) Cover/shelter Food (juvenile rearing) Riparian vegetation Space (Chinook, coho) Spawning gravel Water quality Water temp (sockeye) Water quantity	Adult spawning Embryo incubation Alevin growth and development Fry emergence from gravel Fry/parr/smolt growth and development
Adult and juvenile migration corridors	Cover/shelter Food (juvenile) Riparian vegetation Safe passage Space Substrate Water quality Water quantity Water temperature Water velocity	Adult sexual maturation Adult upstream migration and holding Kelt (steelhead) seaward migration Fry/parr/smolt growth, development, and seaward migration
Areas for growth and development to adulthood	Ocean areas – not identified	Nearshore juvenile rearing Subadult rearing Adult growth and sexual maturation Adult spawning migration

CHART Salmon and Steelhead Critical Habitat Assessments. The CHART for each recovery domain assessed biological information pertaining to areas under consideration for designation as critical habitat to identify the areas occupied by listed salmon and steelhead, determine whether those areas contained PCEs essential for the conservation of those species and whether unoccupied areas existed within the historical range of the listed salmon and steelhead that are also essential for conservation. The CHARTs assigned a 0 to 3 point score for the PCEs in each HUC5 watershed for:

Factor 1. Quantity,
Factor 2. Quality – Current Condition,
Factor 3. Quality – Potential Condition,
Factor 4. Support of Rarity Importance,
Factor 5. Support of Abundant Populations, and
Factor 6. Support of Spawning/Rearing.

Thus, the quality of habitat in a given watershed was characterized by the scores for Factor 2 (quality – current condition), which considers the existing condition of the quality of PCEs in the

HUC5 watershed; and Factor 3 (quality – potential condition), which considers the likelihood of achieving PCE potential in the HUC5 watershed, either naturally or through active conservation/restoration, given known limiting factors, likely biophysical responses, and feasibility.

Interior Columbia Recovery Domain. Critical habitat has been designated in the IC recovery domain, which includes the Snake River Basin, for SR spring/summer-run Chinook salmon, SR fall-run Chinook salmon, UCR spring-run Chinook salmon, SR sockeye salmon, MCR steelhead, UCR steelhead, and SRB steelhead. Major tributaries in the Oregon portion of the IC recovery domain include the Deschutes, John Day, Umatilla, Walla Walla, Grande Ronde, and Imnaha rivers.

Habitat quality in tributary streams in the IC recovery domain varies from excellent in wilderness and roadless areas to poor in areas subject to heavy agricultural and urban development (NMFS 2009; Wissmar *et al.* 1994). Critical habitat throughout much of the IC recovery domain has been degraded by intense agriculture, alteration of stream morphology (*i.e.*, channel modifications and diking), riparian vegetation disturbance, wetland draining and conversion, livestock grazing, dredging, road construction and maintenance, logging, mining, and urbanization. Reduced summer stream flows, impaired water quality, and reduction of habitat complexity are common problems for critical habitat in developed areas.

Migratory habitat quality in this area has been severely affected by the development and operation of the FCRPS dams and reservoirs in the mainstem Columbia River, Bureau of Reclamation tributary projects, and privately owned dams in the Snake and Upper Columbia river basins. For example, construction of Hells Canyon Dam eliminated access to several likely production areas in Oregon and Idaho, including the Burnt, Powder, Weiser, Payette, Malheur, Owyhee, and Boise river basins (Good *et al.* 2005), and Grand Coulee and Chief Joseph dams completely block anadromous fish passage on the upper mainstem Columbia River. Hydroelectric development modified natural flow regimes, resulting in higher water temperatures, changes in fish community structure leading to increased rates of piscivorous and avian predation on juvenile salmon and steelhead, and delayed migration for both adult and juveniles. Physical features of dams such as turbines also kill migrating fish. In-river survival is inversely related to the number of hydropower projects encountered by emigrating juveniles.

Similarly, development and operation of extensive irrigation systems and dams for water withdrawal and storage in tributaries have altered hydrological cycles. A series of large regulating dams on the middle and upper Deschutes River affect flow and block access to upstream habitat, and have extirpated one or more populations from the Cascades Eastern Slope major population (ICTRT 2003). Similarly, operation and maintenance of large water reclamation systems such as the Umatilla Basin and Yakima Projects have significantly reduced flows and degraded water quality and physical habitat in this domain.

Many stream reaches designated as critical habitat in the IC recovery domain are over-allocated under state water law, with more allocated water rights than existing streamflow. Withdrawal of water, particularly during low-flow periods that commonly overlap with agricultural withdrawals, often increases summer stream temperatures, blocks fish migration, strands fish,

and alters sediment transport (Spence *et al.* 1996). Reduced tributary stream flow has been identified as a major limiting factor for all listed salmon and steelhead species in this recovery domain except SR fall-run Chinook salmon and SR sockeye salmon (NMFS 2007; NOAA Fisheries 2011).

Many stream reaches designated as critical habitat are listed on the state of Oregon's Clean Water Act section 303(d) list for water temperature. Many areas that were historically suitable rearing and spawning habitat are now unsuitable due to high summer stream temperatures. Removal of riparian vegetation, alteration of natural stream morphology, and withdrawal of water for agricultural or municipal use all contribute to elevated stream temperatures. Contaminants such as insecticides and herbicides from agricultural runoff and heavy metals from mine waste are common in some areas of critical habitat.

The IC recovery domain is a very large and diverse area. The CHART determined that few watersheds with PCEs for Chinook salmon or steelhead are in good to excellent condition with no potential for improvement. Overall, most IC recovery domain watersheds are in fair-to-poor or fair-to-good condition. However, most of these watersheds have some or high potential for improvement. In Washington, the Upper Methow, Lost, White, and Chiwawa watersheds are in good-to-excellent condition with no potential for improvement. In Oregon, only the Lower Deschutes, Minam, Wenaha, and Upper and Lower Imnaha Rivers HUC5 watersheds are in good-to-excellent condition with no potential for improvement. In Idaho, a number of watersheds with PCEs for steelhead (Upper Middle Salmon, Upper Salmon/Pahsimeroi, Middle Fork Salmon, Little Salmon, Selway, and Lochsa rivers) are in good-to-excellent condition with no potential for improvement. Additionally, several Lower Snake River HUC5watersheds in the Hells Canyon area, straddling Oregon and Idaho, are in good-to-excellent condition with no potential for improvement (Table 11).

Table 11. **Interior Columbia Recovery Domain:** Current and potential quality of HUC5 watersheds identified as supporting historically independent populations of ESA-listed Chinook salmon (CK) and steelhead (ST) (NOAA Fisheries 2005). Watersheds are ranked primarily by "current quality" and secondly by their "potential for restoration."

Current PCE Condition	Potential PCE Condition
3 = good to excellent	3 = highly functioning, at historical potential
2 = fair to good	2 = high potential for improvement
1 = fair to poor	1 = some potential for improvement
0 = poor	0 = little or no potential for improvement

Watershed Name and HUC5 Code(s)	Listed Species	Current Quality	Restoration Potential
Upper Columbia # 1702000xxx			
White (101), Chiwawa (102), Lost (801) & Upper Methow (802) rivers	CK/ST	3	3
Upper Chewuch (803) & Twisp rivers (805)	CK/ST	3	2
Lower Chewuch River (804); Middle (806) & Lower (807) Methow rivers	CK/ST	2	2
Salmon Creek (603) & Okanogan River/Omak Creek (604)	ST	2	2
Upper Columbia/Swamp Creek (505)	CK/ST	2	1
Foster Creek (503) & Jordan/Tumwater (504)	CK/ST	1	1
Upper (601) & Lower (602) Okanogan River; Okanogan River/Bonaparte Creek (605); Lower Similkameen River (704); & Lower Lake Chelan (903)	ST	1	1
Unoccupied habitat in Sinlahekin Creek (703)	ST Conservation Value "Possibly High"		
Upper Columbia #1702001xxx			
Entiat River (001); Nason/Tumwater (103); & Lower Wenatchee River (105)	CK/ST	2	2
Lake Entiat (002)	CK/ST	2	1
Columbia River/Lynch Coulee (003); Sand Hollow (004); Yakima/Hansen Creek (604), Middle Columbia/Priest Rapids (605), & Columbia River/Zintel Canyon (606)	ST	2	1
Icicle/Chumstick (104)	CK/ST	1	2
Lower Crab Creek (509)	ST	1	2
Rattlesnake Creek (204)	ST	0	1
Yakima #1703000xxx			
Upper (101) & Middle (102) Yakima rivers; Teanaway (103) & Little Naches (201) rivers; Naches River/Rattlesnake Creek (202); & Ahtanum (301) & Upper Toppenish (303) & Satus (305) creeks	ST	2	2
Umtanum/Wenas (104); Naches River/Tieton River (203); Upper Lower Yakima River (302); & Lower Toppenish Creek (304)	ST	1	2
Yakima River/Spring Creek (306)	ST	1	1
Lower Snake River #1706010xxx			
Snake River/Granite (101), Getta (102), & Divide (104) creeks; Upper (201) & Lower (205) Imnaha River; Snake River/Rogersburg (301); Minam (505) & Wenaha (603) rivers	ST	3	3
Grande Ronde River/Rondowa (601)	ST	3	2
Big (203) & Little (204) Sheep creeks; Asotin River (302); Catherine Creek (405); Lostine River (502); Bear Creek (504); & Upper (706) & Lower (707) Tucannon River	ST	2	3
Middle Imnaha River (202); Snake River/Captain John Creek (303);	ST	2	2

Upper Grande Ronde River (401); Meadow (402); Beaver (403); Indian (409), Lookingglass (410) & Cabin (411) creeks; Lower Wallowa River (506); Mud (602), Chesnimnus (604) & Upper Joseph (605) creeks			
Ladd Creek (406); Phillips/Willow Creek (408); Upper (501) & Middle (503) Wallowa rivers; & Lower Grande Ronde River/Menatche Creek (607)	ST	1	3
Five Points (404); Lower Joseph (606) & Deadman (703) creeks	ST	1	2
Tucannon/Alpowa Creek (701)	ST	1	1
Mill Creek (407)	ST	0	3
Pataha Creek (705)	ST	0	2
Snake River/Steptoe Canyon (702) & Penawawa Creek (708)	ST	0	1
Flat Creek (704) & Lower Palouse River (808)	ST	0	0
Upper Salmon and Pahsimeroi #1706020xxx			
Germania (111) & Warm Springs (114) creeks; Lower Pahsimeroi River (201); Alturas Lake (120), Redfish Lake (121), Upper Valley (123) & West Fork Yankee (126) creeks	ST	3	3
Basin Creek (124)	ST	3	2
Salmon River/Challis (101); East Fork Salmon River/McDonald Creek (105); Herd Creek (108); Upper East Fork Salmon River (110); Salmon River/Big Casino (115), Fisher (117) & Fourth of July (118) creeks; Upper Salmon River (119); Valley Creek/Iron Creek (122); & Morgan Creek (132)	ST	2	3
Salmon River/Bayhorse Creek (104); Salmon River/Slate Creek (113); Upper Yankee Fork (127) & Squaw Creek (128); Pahsimeroi River/Falls Creek (202)	ST	2	2
Yankee Fork/Jordan Creek (125)	ST	1	3
Salmon River/Kinnikinnick Creek (112); Garden Creek (129); Challis Creek/Mill Creek (130); & Patterson Creek (203)	ST	1	2
Road Creek (107)	ST	1	1
Unoccupied habitat in Hawley (410), Eighteenmile (411) & Big Timber (413) creeks	Conservation Value for ST "Possibly High"		
Middle Salmon, Panther and Lemhi #1706020xxx			
Salmon River/Colson (301), Pine (303) & Moose (305) creeks; Indian (304) & Carmen (308) creeks, North Fork Salmon River (306); & Texas Creek (412)	ST	3	3
Deep Creek (318)	ST	3	2
Salmon River/Cow Creek (312) & Hat (313), Iron (314), Upper Panther (315), Moyer (316) & Woodtick (317) creeks; Lemhi River/Whimpey Creek (402); Hayden (414), Big Eight Mile (408), & Canyon (408) creeks	ST	2	3
Salmon River/Tower (307) & Twelvemile (311) creeks; Lemhi River/Kenney Creek (403); Lemhi River/McDevitt (405), Lemhi River/Yearian Creek (406); & Peterson Creek (407)	ST	2	2
Owl (302) & Napias (319) creeks	ST	2	1
Salmon River/Jesse Creek (309); Panther Creek/Trail Creek (322); & Lemhi River/Bohannon Creek (401)	ST	1	3
Salmon River/Williams Creek (310)	ST	1	2
Agency Creek (404)	ST	1	1
Panther Creek/Spring Creek (320) & Clear Creek (323)	ST	0	3
Big Deer Creek (321)	ST	0	1
Mid-Salmon-Chamberlain, South Fork, Lower, and Middle Fork Salmon #1706020xxx			
Lower (501), Upper (503) & Little (504) Loon creeks; Warm Springs (502); Rapid River (505); Middle Fork Salmon River/Soldier (507) &	ST	3	3

Lower Marble Creek (513); & Sulphur (509), Pistol (510), Indian (511) & Upper Marble (512) creeks; Lower Middle Fork Salmon River (601); Wilson (602), Upper Camas (604), Rush (610), Monumental (611), Beaver (614), Big Ramey (615) & Lower Big (617) creeks; Middle Fork Salmon River/Brush (603) & Sheep (609) creeks; Big Creek/Little Marble (612); Crooked (616), Sheep (704), Bargamin (709), Sabe (711), Horse (714), Cottonwood (716) & Upper Chamberlain Creek (718); Salmon River/Hot Springs (712); Salmon River/Kitchen Creek (715); Lower Chamberlain/McCalla Creek (717); & Slate Creek (911)			
Marsh (506); Bear Valley (508) Yellow Jacket (604); West Fork Camas (607) & Lower Camas (608) creeks; & Salmon River/Disappointment Creek (713) & White Bird Creek (908)	ST	2	3
Upper Big Creek (613); Salmon River/Fall (701), California (703), Trout (708), Crooked (705) & Warren (719) creeks; Lower South Fork Salmon River (801); South Fork Salmon River/Cabin (809), Blackmare (810) & Fitsum (812) creeks; Lower Johnson Creek (805); & Lower (813), Middle (814) & Upper Secesh (815) rivers; Salmon River/China (901), Cottonwood (904), McKenzie (909), John Day (912) & Lake (913) creeks; Eagle (902), Deer (903), Skookumchuck (910), French (915) & Partridge (916) creeks	ST	2	2
Wind River (702), Salmon River/Rabbit (706) & Rattlesnake (710) creeks; & Big Mallard Creek (707); Burnt Log (806), Upper Johnson (807) & Buckhorn (811) creeks; Salmon River/Deep (905), Hammer (907) & Van (914) creeks	ST	2	1
Silver Creek (605)	ST	1	3
Lower (803) & Upper (804) East Fork South Fork Salmon River; Rock (906) & Rice (917) creeks	ST	1	2
Little Salmon #176021xxx			
Rapid River (005)	ST	3	3
Hazard Creek (003	ST	3	2
Boulder Creek (004)	ST	2	3
Lower Little Salmon River (001) & Little Salmon River/Hard Creek (002)	ST	2	2
Selway, Lochsa and Clearwater #1706030xxx			
Selway River/Pettibone (101) & Gardner (103) creeks; Bear (102), White Cap (104), Indian (105), Burnt Knob (107), Running (108) & Goat (109) creeks; & Upper Selway River (106); Gedney (202), Upper Three Links (204), Rhoda (205), North Fork Moose (207), Upper East Fork Moose (209) & Martin (210) creeks; Upper (211), Middle (212) & Lower Meadow (213) creeks; Selway River/Three Links Creek (203); & East Fork Moose Creek/Trout Creek (208); Fish (302), Storm (309), Warm Springs (311), Fish Lake (312), Boulder (313) & Old Man (314) creeks; Lochsa River/Stanley (303) & Squaw (304) creeks; Lower Crooked (305), Upper Crooked (306) & Brushy (307) forks; Lower (308), Upper (310) White Sands, Ten Mile (509) & John's (510) creeks	ST	3	3
Selway River/Goddard Creek (201); O'Hara Creek (214) Newsome (505) creeks; American (506), Red (507) & Crooked (508) rivers	ST	2	3
Lower Lochsa River (301); Middle Fork Clearwater River/Maggie Creek (401); South Fork Clearwater River/Meadow (502) & Leggett creeks; Mill (511), Big Bear (604), Upper Big Bear (605), Musselshell (617), Eldorado (619) & Mission (629) creeks, Potlatch River/Pine Creek (606); & Upper Potlatch River (607); Lower (615), Middle (616) & Upper (618) Lolo creeks	ST	2	2
South Fork Clearwater River/Peasley Creek (502)	ST	2	1

Upper Orofino Creek (613)	ST	2	0
Clear Creek (402)	ST	1	3
Three Mile (512), Cottonwood (513), Big Canyon (610), Little Canyon (611) & Jim Ford (614) creeks; Potlatch River/Middle Potlatch Creek (603); Clearwater River/Bedrock (608), Jack's (609) Lower Lawyer (623), Middle Lawyer (624), Cottonwood (627) & Upper Lapwai (628) creeks; & Upper (630) & Lower (631) Sweetwater creeks	ST	1	2
Lower Clearwater River (601) & Clearwater River/Lower Potlatch River (602), Fivemile Creek (620), Sixmile Creek (621) and Tom Taha (622) creeks	ST	1	1
Mid-Columbia #1707010xxx			
Wood Gulch (112); Rock Creek (113); Upper Walla Walla (201), Upper Touchet (203), & Upper Umatilla (301) rivers; Meacham (302) & Birch (306) creeks; Upper (601) & Middle (602) Klickitat River	ST	2	2
Glade (105) & Mill (202) creeks; Lower Klickitat River (604); Mosier Creek (505); White Salmon River (509); Middle Columbia/Grays Creek (512)	ST	2	1
Little White Salmon River (510)	ST	2	0
Middle Touchet River (204); McKay Creek (305); Little Klickitat River (603);Fifteenmile (502) & Fivemile (503) creeks	ST	1	2
Alder (110) & Pine (111) creeks; Lower Touchet River (207), Cottonwood (208), Pine (209) & Dry (210) creeks; Lower Walla Walla River (211); Umatilla River/Mission Creek (303) Wildhorse Creek (304); Umatilla River/Alkali Canyon (307); Lower Butter Creek (310); Upper Middle Columbia/Hood (501); Middle Columbia/Mill Creek (504)	ST	1	1
Stage Gulch (308) & Lower Umatilla River (313)	ST	0	1
John Day #170702xxx			
Middle (103) & Lower (105) South Fork John Day rivers; Murderers (104) & Canyon (107) creeks; Upper John Day (106) & Upper North Fork John Day (201) rivers; & Desolation Creek (204)	ST	2	2
North Fork John Day/Big Creek (203); Cottonwood Creek (209) & Lower NF John Day River (210)	ST	2	1
Strawberry (108), Beech (109), Laycock (110), Fields (111), Mountain (113) & Rock (114) creeks; Upper Middle John Day River (112); Granite (202) & Wall (208) creeks; Upper (205) & Lower (206) Camas creeks; North Fork John Day/Potamus Creek (207); Upper Middle Fork John Day River (301) & Camp (302), Big (303) & Long (304) creeks; Bridge (403) & Upper Rock (411) creeks; & Pine Hollow (407)	ST	1	2
John Day/Johnson Creek (115); Lower Middle Fork John Day River (305); Lower John Day River/Kahler Creek (401), Service (402) & Muddy (404) creeks; Lower John Day River/Clarno (405); Butte (406), Thirtymile (408) & Lower Rock (412) creeks; Lower John Day River/Ferry (409) & Scott (410) canyons; & Lower John Day River/McDonald Ferry (414)	ST	1	1
Deschutes #1707030xxx			
Lower Deschutes River (612)	ST	3	3
Middle Deschutes River (607)	ST	3	2
Upper Deschutes River (603)	ST	2	1
Mill Creek (605) & Warm Springs River (606)	ST	2	1
Bakeoven (608) & Buck Hollow (611) creeks; Upper (701) & Lower (705) Trout Creek	ST	1	2
Beaver (605) & Antelope (702) creeks	ST	1	1

White River (610) & Mud Springs Creek (704)	ST	1	0
Unoccupied habitat in Deschutes River/McKenzie Canyon (107) & Haystack (311); Squaw Creek (108); Lower Metolius River (110), Headwaters Deschutes River (601)	ST Conservation Value "Possibly High"		

2.3 Environmental Baseline

The "environmental baseline" includes the past and present impacts of all Federal, state, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of state or private actions which are contemporaneous with the consultation in process (50 CFR 402.02).

The effects from climate change to the environmental baseline in the action area are described above in Section 2.2.

Species Baseline within the Action Area. The biological requirements of salmon and steelhead in the action area vary depending on the life history stage present and the natural range of variation present within that system (Groot and Margolis 1991; Spence *et al.* 1996).Generally, during spawning migrations, adult salmon require clean water with cool temperatures and access to thermal refugia, dissolved oxygen near 100% saturation, low turbidity, adequate flows and depths to allow passage over barriers to reach spawning sites, and sufficient holding and resting sites. Habitat requirements for juvenile rearing include seasonally suitable microhabitats for holding, feeding, and resting. Migration of juveniles to rearing areas, whether the ocean, lakes, or other stream reaches, requires access to these habitats. Physical, chemical, and thermal conditions may all impede movements of adult or juvenile fish.

Critical Habitat Baseline within the Action Area. The action area is within designated critical habitat for juvenile rearing habitat and a migration corridor for adults and juveniles of all the affected salmonid species in the Columbia River mainstem.

The project action area is located within the middle section of the Columbia River which runs over 450 miles from Bonneville Dam (RM 146) located along the border between Oregon and Washington, upstream to Grand Coulee Dam (RM 596) in Washington State. The project site is located along the southern shoreline of the Lake Wallula reservoir, approximately 9.5 miles upstream of McNary Dam (RM 301.6). The general topography within the action area ranges from relatively level uplands to steep sloping banks along the river. The shoreline within the action area consists of a steep, sparsely vegetated riprap bank.

The project site is comprised of the existing pump station facilities, including the elevated pumps, concrete access pads, and existing riprap shoreline. Vegetation surrounding the action area is dominated by species typical of the sagebrush-steppe vegetation community in eastern Oregon, including rabbitbrush (*Ericameria nauseosa*), antelope brush (*Purshia tridentate*) and cheatgrass (*Bromus tectorum*). Other species observed within and near the action area include big sagebrush (*Artemisia tridentate*), common mullein (*Verbascum Thapsus*), tall tumblemustard (*Sisymbrium altissimum*), and willow species (*Salix* sp.).

Columbia River Mainstem. The action area of the Columbia River has been disconnected from its floodplains and off-channel habitat by construction of levees, highways and railroads, and by filling of wetlands. Besides reducing the availability of high-quality rearing habitat, this likely has reduced the availability of cold-water refugia formed by hyporheic exchange of groundwater with the river. There is at present no suitable spawning habitat for Pacific salmon in the action area of the Columbia River mainstem, primarily due to the sandy substrate. Both adult and juvenile Pacific salmon use the general area for migration, and juveniles use the shallow areas for rearing.

Sediment transport in the action area has been substantially altered by the hydropower system, which has altered flow patterns and detained sediments behind dams. Since dam construction, the high seasonal flows that once regularly redistributed alluvial material have decreased. The floodplain has also been disconnected from the river by shoreline development. Alteration of flow regime and disruption of floodplain connectivity have impaired habitat-forming processes in the action area. Impoundment of the river, reinforcement of shorelines (retaining walls, riprap placement, *etc.*), and creation of overwater structures such as piers have created habitat conditions that favor species that prey on juvenile Pacific salmon.

The Columbia River is classified as water quality limited under section 303(d) of the Federal Clean Water Act by the Oregon Department of Environmental Quality (ODEQ) for temperature, pH and polychlorinated biphenyls (PCB) (ODEQ 2010). Numerous other pollutants of concern and toxins have been found in the Columbia River portion of the action area and downstream. Significant agricultural production occurs throughout the tributary drainages to the Columbia River in the Middle Columbia River watersheds. Conversion of habitat to agricultural lands has resulted in loss of riparian habitat, unstable streambanks due to poor cattle exclusion devices, excessive chemical levels in the water associated with pesticides and herbicides, high water temperatures and loss dissolved oxygen levels. Many tributary streams exceed appropriate width/depth ratios, resulting in high temperatures, sheet flow at high waters, and inadequate velocity levels at low flows. Agricultural production has also increased disturbance related to invasive plant species.

Although the quality of critical habitat in the Columbia River migration corridor has been reduced by the effects of hydroelectric development, agricultural and urban development, the action area remains critical because it provides the essential link between the natal streams and the marine environments necessary for the growth and development of the seven ESA-listed salmonids covered in this consultation. The CHART for the Upper Columbia, Snake, and Middle Columbia rivers (NMFS 2005) concluded that migration PCEs throughout this corridor are highly essential to the conservation of SR sockeye, SRB, UCR, and MCR steelhead, and SR and UCR Chinook since all of these species must migrate through this area as juveniles and as adults.

Environmental baseline conditions at the action area were summarized in the submitted BA using the NMFS *Matrix of Pathways and Indicators* (NMFS 1996). Data reveal that baseline conditions for measured habitat variables within the project area are all currently "functioning at risk" or "not properly functioning," as described below.

Water Quality

Temperature

The Middle Columbia River within the Lake Wallula reservoir is listed on the Oregon Department of Environmental Quality (ODEQ) 303(d) list for year round temperature exceedance (ODEQ 2012). Based on the Columbia River Data Access in Real Time (DART) 10-year average (2002-2011), temperatures at McNary range between a low of approximately 4° Celsius (C) in mid-February, to a high of over 22° C in mid-August (DART 2012). Many factors have contributed to increased stream temperatures, but they are primarily related to land-use practices, including dams, channel simplification and widening, and vegetation removal. There has also been an incremental loss of wetlands and increases in groundwater withdrawals which have contributed to lower base-stream flows, and which in turn contribute to temperature increases. As a result, this parameter is **not properly functioning**.

Sediment/Turbidity

There is currently no turbidity data available within the immediate vicinity of the action area, however, given the historic and existing land uses within the Middle Columbia River, this parameter is likely **not properly functioning**.

Chemical Contamination/Nutrients

Water quality is generally poor throughout the Middle Columbia River, as degraded riparian habitat, effluent outfalls, density of impervious surfaces, and physical disturbances to local stream systems have all led to increased chemical and nutrient contamination. The Middle Columbia River within the Lake Wallula reservoir is 303(d) listed for polychlorinated biphenyls (PCBs), and has an approved Total Maximum Daily Load (TMDL) for dioxin, and total dissolved gas (TDG) (ODEQ 2012). Based on this information, this parameter is **not properly functioning**.

Habitat Access

Physical Barriers

In general, the environment for salmonids in the Columbia River basin has been significantly affected by the development and operation of the hydropower dams associated with the Federal Columbia River Power System (FCRPS) (NMFS 2009). The action area is within the impoundment of water behind the McNary Dam, forming the Lake Wallula reservoir. Upstream and downstream fish passage for anadromous fish through the reservoir is provided downstream at the McNary Dam in Oregon and upstream at the Priest Rapids Dam in Washington. In addition, access for anadromous fish to the reservoir is provided at Ice Harbor Dam along the Snake River. Given the presence of numerous hydro facilities along the Middle Columbia River, this parameter is **at risk**.

Habitat Elements

Substrate

Substrates within the action area consist primarily of fine sands with cobble sized substrates beneath. Sand deposits on the surface range from one to several ft deep. Sediment sampling was

conducted within the action area on July 25, 2012. Physical analysis revealed that the sediment was composed of very course to course sand. The upstream dams alter the movement of sediment through the action area, resulting in few accumulations of suitable spawning gravels, and few widely spaced, sandy foraging shoals for smolts. Based on this information, this parameter is **not properly functioning**.

Large Wood
No large woody debris is present within the vicinity of the action area. As with sediments, the upstream dams have altered the movement of large wood through the action area, resulting in minimal accumulations. In addition, the shrub-steppe conditions of the Middle Columbia River do not generally provide areas for large wood recruitment. As such, this parameter is likely **not properly functioning**.

Pool Frequency
Bathymetry information across the Columbia River within the vicinity of the action area indicates that the maximum channel depth is approximately 105 ft. The average width of the river within the vicinity of the action area is approximately 6,200 ft. Given the width of the channel, as modified by McNary Dam and other hydroelectric projects, this indicator likely meets pool frequency standards, but may be **at risk** due to lack of large woody debris recruitment.

Pool Quality
Middle Columbia River off-channel flows within the action area are greater than 1 meter in depth, however, there is little adequate cover and temperatures are relatively warm. As such, this parameter is likely **at risk**.

Off-Channel Habitat
Backwater and low energy off-channel habitat does exist downstream of the project area as a result of the impoundment behind McNary Dam, however, there is little existing cover. As such, this parameter is likely **at risk**.

Refugia
As a result of the development and operation of the hydropower dams, formerly complex habitats along the Columbia River have been reduced to a single channel with little off-channel habitat and very few forms of cover. Based on these current conditions, this parameter is **not properly functioning**.

Channel Conditions and Dynamics

Width/Depth Ratio
As discussed above, bathymetry information across the Columbia River within the vicinity of the action area indicates that the maximum channel depth is approximately 105 ft. The average width of the river within the vicinity of the action area is approximately 6,200 ft. This width depth ratio far exceeds a factor of 10 and is likely **not properly functioning**.

Streambank Condition
The immediate shorelines of the action area are comprised of riprap and minimal vegetation. Given that the reservoir levels are controlled by McNary Dam and that the streambank appears to be stable with no active erosion occurring, it is likely that this indicator is 80-90% stable, and therefore **at risk**.

Floodplain Connectivity
Floodplain connectivity throughout the Columbia River basin has been reduced as a result of hydroelectric development. Overall, within the Middle Columbia River, this indicator is **not properly functioning**.

Flow/Hydrology

Water quantity problems are a significant cause of habitat degradation and reduced fish production in the Columbia River. Withdrawing water for irrigation, urban development, and other uses has increased temperatures, sedimentation, and smolt travel time. In addition, human activities have affected the timing and amount of peak water runoff from rain and snowmelt. Many riparian areas, floodplains, and wetlands that once stored water during periods of high runoff have been inundated by the reservoirs along the river.

Peak/Base Flows
Peak and base flows throughout the Columbia River basin have been significantly altered as a result of hydroelectric development along the Columbia River, and residential and agricultural development within the basin. Based on the Columbia River DART 10-year average (2002-2011), outflows at McNary Dam range seasonally from approximately 85,000 to 325,000 cfs (DART 2012). Given the existing water management requirements, this indicator is **not properly functioning**.

Drainage Network Increase
The proposed project is located within a relatively undeveloped area along the Lake Wallula reservoir. However, within the Columbia River basin there has been a significant increase in paved roads and overall drainage network density. As such, this parameter is likely **not properly functioning**.

Watershed Conditions

Road Density and Location
There are a few paved roads and some valley bottom roads within the vicinity of the action area. Based on overall road development within the basin, this parameter is likely **at risk**.

Disturbance History
As stated above, the Columbia River basin has been significantly altered as a result of hydroelectric development along the Columbia River, and residential and agricultural development within the basin. In addition, logging within the watershed has greatly reduced amount of late-successional reserves. Within the basin and action area, this indicator is **not properly functioning**.

Riparian Reserves
Riparian vegetation along the Middle Columbia River is quite sparse, comprised primarily of willows and grasses. Within the Lake Wallula reservoir the riparian reserve system is fragmented, poorly connected, and provides limited natural cover habitat and refugia. Hydroelectric operations along with urban development and agricultural practices have greatly reduced riparian reserves along the river. As such, the indicator is **not properly functioning**.

2.4 Effects of the Action on the Species and its Designated Critical Habitat

"Effects of the action" means the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline (50 CFR 402.02). Indirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur.

The proposed action will have direct, short-term adverse effects on the ESA-listed species and critical habitats during construction due to interaction with fish and construction equipment, chemical contamination, increases in turbidity, altered established substrate and available forage. It will also have a combination of longer-term effects, including adverse and beneficial effects related to the installation and modification of the existing intakes and fish screens on the pump stations.

In-water Excavation and Construction. General site disturbance during construction will alter the area's use by listed species during the construction period. Construction activity will result in localized increases in turbidity and fine sediments, however, sediment and erosion control measures will minimize the movement of soil into the river. The channel excavation will increase suspended sediments, turbidity, and fine streambed sediment. All in-water excavation and construction activities will occur within a 6 week period during the in-water work period.

Chemical Contamination. As with all construction activities involving the use of mechanized equipment, accidental release of fuel, oil, and other contaminants may occur. Adverse effects to aquatic species are likely to occur from contact with chemicals from equipment leaks and fuel spills. However, best management practices (BMPs) have been included as part of the proposed action so as to greatly reduce the risks of potential adverse effects associated with chemicals. Conservation measures will be implemented to contain and minimize any potential leaks within the area where it would have short-term adverse effects on water quality and stream macro-invertebrates. Operation of machinery in close proximity to a stream increases the chance of a large fuel spill or hydraulic fluid leak contaminating the water. The probability of this occurring is very low, but not discountable.

Increased Turbidity. Mechanical activities in-stream or on the streambanks are likely to cause temporary adverse effects to aquatic habitat if construction-related sediments enter the Columbia River due to soil disturbance. These sediments are likely to appear as localized increases in turbidity due to fine sediment movement during the implementation of the proposed action. Sediment is also likely to be carried by surface runoff when erosion control structures are removed. The increase in turbidity will temporarily (days to weeks) reduce water quality.

Altered Streambed Substrate Composition and Reduced Available Macro-invertebrate Forage. Excavation (dredging) in the channel to install new pumping equipment and piping will remove established substrate and will result in a temporary reduction in the available established macroinvertebrate community. Additional sediment contributions from the channel excavation will likely settle into the streambed substrate within a year. Native substrate removed during the dredging portion of the proposed action will be returned to the Columbia River in the previously described methods and the approved disposal site. Macroinvertebrates are expected to re-establish the area within weeks to months following completion of the project.

2.4.1 Effects to Species

It is expected that any adverse effects to listed fish due to disturbance from construction will be relatively small in terms of both intensity and duration. Some short-term adverse effects are likely to occur during project implementation and as the project site becomes established. However, the potential for adverse effects to listed species will be avoided or greatly minimized by the BMPs and timing of the project implementation. Since all of the species addressed by this opinion have similar biology and life history, the effects of the action will affect all of them in a similar manner. Therefore, the analysis below, describes the effects of the action on salmonids rather than any specific species.

Elevated Suspended Sediments and Turbidity. Effects to salmonids will occur from substrate disturbance though in-water excavation and construction activities during the upgrades and modifications to the pumps stations and intake structures. These activities will temporarily increase delivery of fine sediments, increase turbidity in the water column and degrade water quality. The greater the flow of water over the disturbed area and the larger the disturbed area, the greater the movement of sediments. The in-water excavation and subsequent filling will temporarily release stored fine sediments.

Dredging and disposal operations can increase suspended sediments. Not all sediment is captured by the dredges; some will be re-deposited on the bottom while some will be suspended in the water column increasing turbidity (Hayes *et al.* 2000). Disposal may deposit the dredge material directly into the water column and thus is potentially the greatest contributors of suspended sediment and turbidly due to dredging.

The increases in suspended sediment and turbidity plumes resulting from the proposed construction activities are not likely to be of an extent, magnitude, or duration that would kill or injure listed species, but will impede adult passage and juvenile rearing for a short period of time, as fish will avoid the area for the duration of the construction. The additional energy expenditure for fish avoiding the affected area will increase the likelihood of death or injury by reducing survival or increasing chances of predation. These effects will be minimized due to the use of BMPs including: all in-water construction activities will occur during the in-water work period, these measures will reduce effects (including behavioral modifications, avoidance, and injury) to any ESA-listed salmonids remaining in the area.

Increased Sedimentation and Reduced Macro-invertebrate Forage Abundance. Additional sediment input to the system in the long term should be minimized due to the precautions taken during the in-water construction. Re-deposited fine sediments have the potential to adversely affect primary and secondary productivity (Spence *et al.* 1996), and reduce incubation success (Bell 1991) for juvenile salmonids (Bjornn and Reiser 1991). However, the action area is not used for spawning by any of the species addressed in this opinion. The increased fine sediment will result in a minor increase in substrate embeddedness likely resulting in a minor decrease in forage abundance. Substrate composition in the action area is expected to return to baseline conditions by the end of the next high flow season. The excavation of the streambed and channel will result in removal of an established streambed substrate and aquatic macro-invertebrates which will temporarily reduce forage abundance. Increases in fine sediments are reasonably likely to cause a minor decrease in aquatic invertebrate densities in the action area, resulting in a small decrease in available forage for juvenile salmonids for up to a few months. Juvenile salmonids are opportunistic predators and eat a wide variety of vertebrate and invertebrate species and are known to forage on the stream bottom for prey. The effect of the reduction in aquatic prey is likely temporary and the area will be recolonized after project completion. NMFS expects that the abundance of macro-invertebrate organisms in the areas adjoining the project area is adequate to rapidly recolonize disturbed areas. Fish that return to the area following the project completion will experience a reduction in available macro-invertebrate forage until such times as the areas becomes recolonized.

Dredging Activities. Entrainment occurs when organisms are trapped during the uptake of sediments and water by dredging machinery. The potential for entrainment depends upon the likelihood of fish occurring during the dredge period, the dredge depth, fish densities at the time and location of dredging operations, how the dredge is operated, and the affected species' life stage.

The proposed dredging methods will include an 8 inch diameter dredge pump that will remain buried up to 1 ft below the channel substrate. The dredging operations will remove approximately 300 cubic yards within an area approximately 1,700 square ft (0.04 acre), with a depth of 1 to 15 ft. Following the activities the dredge material will be reintroduced into the river at a depth of approximately 40 ft, therefore allowing native sediments to be redistributed downstream.

Any adult fish that might be present would generally be migrating mid-channel and may be found throughout the water column mostly out of the dredging areas, usually within the upper 25 ft but may be found to depths of 50 ft. Adult fish are primarily migrating above the depths dredges are operated but it would not be uncommon for adult fish to be found at the dredging depth. Adult salmon and steelhead are strong swimmers however and should be able to avoid dredges, discharge plumes and burial, NMFS is confident any potential for adult fish to be entrained or buried by the dredges is discountable. Juvenile salmon and steelhead prefer migrating and rearing along shallow water habitats and shorelines of the Columbia River and a may be present at these dredging depths. The timing of the proposed dredging is planned to occur January 1 to February 28, during the ODFW in-water work window when very few individual ESA-listed salmonids are likely to be present within the project area. NMFS

anticipates that since few juvenile salmonids will be in the near vicinity of the dredging, the potential of entrainment will be very minimal but that it is not discountable.

Chemical Contamination. Fuel and lubricant spills that enter a waterbody directly or through the adjacent riparian zone can injure and kill aquatic organisms and degrade water quality. Petroleum-based contaminants, such as fuels, oils, and some hydraulic fluids contain polycyclic aromatic hydrocarbons (PAHs), which can be acutely toxic to salmonids at high levels of exposure and can also have acute and chronic lethal and sublethal effects on other aquatic organisms (Neff 1985). The proposed action includes project designs that will reduce the risk of chemical contamination during in-water work activities and maintain water quality. Following these best management practices will ensure that any contamination into the stream will be reduced to the point that only a few juvenile salmonids are likely to be injured or killed by minor leaks of contaminants into the action area. There will be no adverse effects over the long term or at the population level.

Reduction in Impingement from Improvements to Intakes and Fish Screens. The upgrades to the fish screens and modifications to the intake pumps will allow the facility to meet current fish screen criteria (NMFS 2011a). The criteria will reduce potential harm, injury, and mortality resulting from potential interactions with the pumps, intakes and screens.

Hydroacoustic Effects. The installation of steel piles in this location is likely to result in adverse effects to ESA-listed fish, potentially including injury, death and behavioral effects. There will be sub-lethal effects depending upon the effectiveness of mitigation measures and the presence of fish. Pile installation will have the following effects on the ESA-listed species: avoidance, interrupted migration, increased exposure to predation, altered feeding behavior, hearing loss or auditory tissue damage, and physical injury or death (Hastings 1996; Scholik and Yan 2002; Hastings and Popper 2005). Fish consistently avoid low frequency sounds like those of a vibratory hammer (Enger *et al.* 1993; Dolat 1997; Knudsen *et al.* 1997; Sand *et al.* 2000) and appear not to habituate to these sounds. Piles will be installed with a vibratory driver. Peak sound levels from vibratory drivers are considerably lower than impact drivers, however, total energy dissipated can be comparable resulting in similar total accumulation of lower sound levels.

Fish respond differently to sounds produced by impact hammers than to sounds produced by vibratory hammers. Vibratory hammers produce a more rounded sound pressure wave with a slower rise time in comparison to impact hammers. Because the more rounded sound pressure wave produced by vibratory hammers produces a slower increase in pressure, the potential for injury and mortality is reduced. The sharp sound pressure waves associated with impact hammers represent a rapid change in water pressure level. In general, injury and mortality effects from underwater noise are caused by these rapid pressure changes.

Although not proposed as part of the action, impact pile-driving can produce underwater sound pressure waves that can have effects on fish, varying upon the variables of: type and intensity of sounds, size of the piles, firmness of the substrate, water depth, and the type and size of the pile driver. Larger piles and firmer substrate require greater energy to drive the pile resulting in higher sound pressure levels (SPL). This is a relationship between driven energy and its

transformation into overcoming friction or resonance. Hollow steel piles produce higher SPLs than similarly sized wood or concrete piles (Hastings and Popper 2005). Sound attenuates more rapidly in shallow water than in deep waters (Rogers and Cox 1988). Fish with swim bladders and smaller fish have been shown to be more vulnerable to injury (Hanson *et al.* 2003).

Interim thresholds of injury were set in an agreement dated June 11, 2008, by the Fisheries Hydroacoustic Work Group to set underwater sound pressure level criteria[6] for injury to listed fish from pile driving activities as: 206 decibel (dB) peak, 187 dB accumulated sound exposure level (SEL) for fish equal or greater than 2 grams, and 183 dB SEL for fish less than 2 grams. The NMFS has since added when the single strike SEL of 150 dB is reached as the conservative threshold to the maximum distance when fish can be injured (Stadler and Woodbury 2009). If the vibratory hammer is only used to drive all piles to the desired depth, accumulated sound exposure levels and peak sound exposure levels from this project will be well below NMFS's dual threshold interim criteria.

Species at the Population Scale. Those few fish that remain in the action area during project implementation will be exposed to stress caused by construction activities and reduced water quality. The stress is likely to be brief (minutes to hours) limited to two events (for sediment and turbidity plumes and dredging disposal) during construction. Therefore, the proposed action will not have a measurable negative effect on population abundance or productivity of any of the populations affected by the proposed action. In the long term, the project will have some, albeit minor, beneficial effects as the pump stations and intakes will be upgraded to meet fish passage and fish screen criteria. The proposed action will have no effect on population diversity or spatial structure.

Because adult salmon and steelhead are larger and more mobile than juveniles, it is unlikely that any will be killed during in-water construction although adults may move laterally or stop briefly during migration to avoid noise or other construction disturbances (Servizi and Martens 1991, Sigler 1988). However, given the conservation measures outlined above, it is unlikely that physical and chemical changes caused by the construction site associated with the proposed action, will cause delays severe enough to reduce spawning success and alter population growth rate, or cause straying that might alter the spatial structure or genetic diversity of populations. Thus, it is unlikely that the biological effects of actions will affect the VSP characteristics of salmon or steelhead populations.

2.4.2 Effects to Critical Habitat

The proposed action will affect designated critical habitat including freshwater rearing and migrations areas by causing effects during in-water construction, including chemical contamination, increases in turbidity, altered established substrate and available forage. Short-term (months) effects on critical habitat are likely to be the loss of available forage, displacement of established substrate, and water quality (excess turbidity and fine sediment) from channel

[6] FHWG (Fisheries Habitat Working Group). 2008. Agreement in Principal for Interim Criteria for Injury to Fish from Pile driving Activities. Memorandum of Agreement between N0AA Fisheries ' Northwest and Southwest Regions: USFWS Regions 1 and 8; California, Washington and Oregon Department of Transportation; California Department of Fish and Game; and Federal Highways Administration. June 12, 2008.

excavation resulting in delivery to streams. No long-term adverse effects to the PCEs of critical habitat are expected. Below are the likely effects on each of the PCEs of critical habitat.

Freshwater rearing sites
Floodplain connectivity: There will be no effects to floodplain connectivity.
Forage: Loss of streambed habitat for macroinvertebrates will result in a small, isolated loss in forage prey. There will be no long-term effects to forage as macroinvertebrates will recolonize affected areas within several days to weeks.

Natural cover: Established substrate will be disturbed during the excavation and in- stream construction. There will be short-term loss of natural cover during the in- stream construction. However, native substrates will be reintroduced to the sediment load of the Columbia River mainstem.

Freshwater migration corridors:
Free passage: Fish passage will be delayed during the in-water construction. Upstream migration of juvenile salmonids along the shoreline may be altered during in-water work for up to 6 weeks.

Effects to water quality, water quantity and natural cover in freshwater migration corridors will be expected to be the same as those previously described for freshwater rearing sites.

Based on the above effects, the proposed action will have small, local, short-term, negative effects on some critical habitat PCEs for up to a few months following the project completion. Any negative impacts will not reach a level to have noticeable effects on the quality and function of PCEs in the long term.

The effects of the action on PCEs will not impair the ability of critical habitat to play its intended conservation role. The adverse effects of the proposed action on critical habitat PCEs will be limited to small, short-term (days up to 1 year) effects on substrate, water quality, forage, and natural cover.

2.5 Cumulative Effects

"Cumulative effects" are 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 (50 CFR 402.02). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Future state and private actions are likely to continue to affect ESA-listed species in the Columbia River, although it is not possible to predict which specific actions will be significant given the broad geographic landscape covered by the action area, the geographic and political variation in the action area, uncertainties associated with Tribal, state, and local governments, and private actions.

The effects of activities such as agriculture, livestock grazing, and urbanization have degraded the habitat of the Columbia River and its tributaries. Many of these activities are likely to continue into the future. The impacts of these activities on habitat quality is discussed in the environmental baseline section of this opinion .The collective result of habitat degradation is characterized by commercial and residential developments, altered streamflows, structural impediments, and inadequate riparian corridors, simplified and reduced in-stream habitat, and excessive erosion and sedimentation.

NMFS assumes as the human population in the action area continues to grow, demand for agricultural, commercial, or residential development is also likely to grow. Similarly, demand for cultural and aesthetic amenities continues to grow with human population, and is reflected in decades of concentrated effort by Tribes, states, and local communities to restore an environment that supports flourishing wildlife populations, including populations of species that are now ESA-listed (CRITFC 1995; NMFS 2011c; NWPCC 2012; OWEB 2011). Reduced economic dependence on traditional resource-based industries has been associated with growing public appreciation for the economic benefits of river restoration, and growing demand for the cultural amenities that river restoration provides. Thus, many non-Federal actions have become responsive to the recovery needs of ESA-listed species. Those actions included efforts to ensure that resource-based industries adopt improved practices to avoid, minimize, or offset their adverse impacts. Similarly, many actions focused on completion of river restoration projects specifically designed to broadly reverse the major factors now limiting the survival of ESA-listed species at all stages of their life cycle. Those actions have improved the availability and quality of estuarine and nearshore habitats, floodplain connectivity, channel structure and complexity, riparian areas and large wood recruitment, stream substrates, stream flow, water quality, and fish passage. In this way, the goal of ESA-species recovery has become institutionalized as a common and accepted part of the State's economic and environmental culture. We expect this trend to continue into the future as awareness of environmental and at-risk species issues increases among the general public.

When impacts of future state and private actions are considered collectively, they are expected to result in a neutral to slightly negative effect on population abundance and productivity. Similarly, these impacts are expected to cause a neutral to slightly negative effect on the quality and function of critical habitat PCEs in the Columbia River.

2.6 Integration and Synthesis

The Integration and Synthesis section is the final step of NMFS' assessment of the risk posed to species and critical habitat as a result of implementing the proposed action. In this section, we add the effects of the action (Section 2.4) to the environmental baseline (Section 2.3) and the cumulative effects (Section 2.5) to formulate the agency's biological opinion as to whether the proposed action is likely to: (1) Result in appreciable reductions in the likelihood of both survival and recovery of the species in the wild by reducing its numbers, reproduction, or distribution; or (2) reduce the value of designated or proposed critical habitat for the conservation of the species. These assessments are made in full consideration of the status of the species and critical habitat (Section 2.2).

The project will adversely affect ESA-listed steelhead and salmon and designated critical habitat by causing effects including chemical contamination, increases in turbidity, altered established substrate and available forage, hydroacoustic disturbance and temporary reductions in habitat access. Habitat degradation during the construction will include temporary short-term adverse effects in the action area but the condition of the action area will return to pre-project conditions in the long-term. ESA-listed fish will have reduced risk of impingement from the new screens. Hydroacoustic disturbance will be greatly reduced by the pile installation only occurring with-in the recommended IWWW and only a vibratory hammer will be used for the installation. The temporary turbidity plume resulting from in-water excavation is not expected to extend beyond 500 ft downstream from the project site. During the following migration period and rearing year, fish may encounter an incremental increase in fine sediments, but the amount attributable to the project will be so low as to be immeasurable.

The status of the species affected by the proposed action varies from very high risk (SR sockeye salmon) to moderate risk (MCR steelhead). The status of critical habitat at the designation-wide scale varies. As described in Section 2.2, all Columbia River salmon and steelhead species in this opinion migrate through the out-migrating juveniles and then again as adult fish on their upstream spawning migration. The viability of the various populations that comprise the seven salmon and steelhead species considered in this opinion ranges from extirpated, or nearly so, to populations that are at a low risk for extinction.

Short-term effects to critical habitat PCEs will include channel and streambanks modifications, degraded water quality and altered sediment transport balance, habitat access, reductions of available space, cover and available forage. These short-term effects will revert to pre-project quality within several months. Long-term benefits will include preventing impingement and injury to individual fish as the pumps and intakes will meet fish passage and screen criteria. The conditions of the environmental baseline in the action area identify the parameters of water quality, habitat access and habitat elements as all “functioning at risk” or “not properly functioning”. Habitat is degraded from past and current activities including agriculture, livestock grazing, water withdrawals and urbanization. These activities are likely to continue into the future and on balance, we expect cumulative effects to have a neutral or slightly negative effect on population viability and quality of critical habitat. Although some elements of critical habitat are degraded, the conservation value of critical habitat in the action area as high. The implementation of the proposed action will not further degrade the habitat or impair the ability of the habitat to support any of the affected population or the recovery of the species as a whole.

The number of juveniles adversely affected by the action will be a small proportion of the total number of individuals in any of the affected steelhead and salmon populations. The project will not cause a measurable negative effect on population abundance, productivity, spatial structure, or diversity. In the long term, the proposed action may result in small increases in population abundance and productivity and improved spatial structure due to improved fish passage and reduced potential injury to listed individual fish. The action is not expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of any steelhead or salmon in the wild by reducing their reproduction, numbers, or distribution, and therefore will not jeopardize the continued existence of the species.

The analysis showed that the amount of time and area dredging operations could potentially kill or injure ESA-listed fish is extremely small compared to the amount of time the fish may actually be present and area of potentially occupied habitat. Therefore, NMFS concluded individuals of ESA-listed fish potentially may be killed or injured, but the number of individual fish actually killed or injured is likely to be extremely small and would not significantly affect the abundance or productivity of any ESA-listed fish population. The risk of impacts resulting in population level effects is also very small because:

- Dredging operations will avoid most of the smolt outmigration period and will occur when juvenile densities in the shallow side channels are lowest.
- A very small number of individuals of any population will be exposed to dredging.
- The habitat affected by dredging and disposal operations and the short duration of potential effects is extremely small compared to the total available habitat for ESA-listed species.

2.7 Conclusion

After reviewing the current status of the listed species, the environmental baseline within the action area, the effects of the proposed action, and cumulative effects, it is NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of SRB steelhead, UCR steelhead, MCR steelhead, SR spring/summer run Chinook salmon, SR fall-run Chinook salmon, UCR spring-run Chinook salmon, and SR sockeye salmon or destroy or adversely modify their designated critical habitats.

2.8. Incidental Take Statement

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by regulation to include significant habitat modification or degradation that results in death or injury by significantly impairing essential behavioral patterns including breeding, spawning, rearing, migrating, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. For purposes of this consultation, we interpret "harass" to mean an intentional or negligent action that has the potential to injure an animal or disrupt its normal behaviors to a point where such behaviors are abandoned or significantly altered.[7] Section 7(b)(4) and section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA, if that action is performed in compliance with the terms and conditions of this incidental take statement.

[7] NMFS has not adopted a regulatory definition of harassment under the ESA. The U.S. Fish and Wildlife Service defines "harass" in its regulations as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR 17.3). The interpretation we adopt in this consultation is consistent with the U.S. Fish and Wildlife definition of the term.

2.8.1 Amount or Extent of Take

The Project will occur in rearing, and migration habitat for the seven species in this opinion. Juvenile steelhead and salmonids are likely to be rearing in the action area during construction when adverse habitat effects of the proposed action will occur. Take in the form of harm is reasonably certain to occur because some of those individuals will be injured or killed. Adverse effects to juvenile salmonids will also occur from habitat modifications during construction activities in the action area. Juvenile salmonids in the vicinity that avoid the area will experience behavioral modifications and stress due to avoiding the work area. Adult steelhead and salmon are unlikely to be present in the shallow water areas and during the in-water construction. Adult salmonids are mobile and likely to volitionally move out of the action area during the in-water construction and activities.

The proposed action will implement activities that amount to significant habitat modification or degradation that will cause a physiological effect or impair essential behavioral patterns (rearing, feeding, or migration) and thus increase the likelihood of injury or death. The adverse effects of those actions on habitat will include the following: (1) Behavioral modifications resulting from displacement and temporary impediment and disturbance preventing upstream migration in the construction work area for rearing juveniles; (2) decreased feeding, growth, and survival from reduced short-term access habitat and feeding opportunities in the immediate work area; (3) decreased feeding, growth and survival from reduced water quality and pollution during dredging and excavation; (4) reducing survival from additional stress and increasing exposure to predation.; and (5) reduced survival from additional stress, behavioral modification and from hydroacoustic sound effects.

ESA-listed salmon and steelhead that are located downstream of in-stream work areas will be harassed by increases in turbidity and degraded water quality created by dredging and in-stream construction. Fish avoiding the area will experience behavior modifications and expend additional energy and will increase their likelihood of death or injury by reduced condition and increased exposure to predation. Heavy equipment use in the water and shoreline areas will result in small amount of fuel, oils and chemical that will cause pollution and degrade water quality. In-stream construction will result in increases in sedimentation and temporary reduction of access to habitat and disturb invertebrate forage. The in-in-stream disposal of the native substrates following the dredging will also create increased sediment in the water column. The NMFS anticipates that the visible turbidity plume will not exceed 500 ft downstream from work areas based on similar projects completed by ODFW in the vicinity of the proposed action.

Adverse effects from hydroacoustic sound will likely occur through behavior modification, additional stress and increasing exposure to predation to juvenile salmonids rearing or migrating through the area. The use of only vibratory hammer installation will reduce the potential risk of injury or morality occurring immediately during pile installation; however, cumulative exposure to low sound pressure and delayed take may occur from reduced feeding, altered behavior or stress, and increased vulnerability to predators following when fish leave the vicinity of the project. Since it is not practical for NMFS to identify injuries or take that occurs to fish as a result of exposure to these cumulative vibratory sounds after they have left the project area,

NMFS uses the number of 26 new steel piles installed via vibratory hammer as an extent of take indicator.

Salmon and steelhead migrating in the area during construction may encounter harm or injury, behavioral modifications and stress that may decrease feeding, growth and survival. However, there is no practical way to observe or count these individuals without significant additional risk of killing or injuring them. In such circumstances, NMFS uses the causal link established between the activity and a change in habitat conditions affecting the listed species to describe a quantified extent of take. Here, the best available indicator for the extent of take from the associated habitat modification is the length of the visible turbidity plume extending downstream of the in-water work areas because the length of the visible turbidity plume is proportional to all of the take pathways, and it is readily measurable.

In the accompanying opinion, NMFS determines that this level of incidental take is not likely to jeopardize the continued existence of the species or the extent of take of either: (1) a visible turbidity plume in excess of 500 ft length or, (2) vibratory hammer installation of more than 26 piles will trigger the reinitiation provisions of this opinion.

2.8.2 Effect of the Take

In Section 2.7 above, NMFS determines that the level of anticipated take, coupled with other effects of the proposed action, is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

2.8.3 Reasonable and Prudent Measures and Terms and Conditions

"Reasonable and prudent measures" are nondiscretionary measures to minimize the amount or extent of incidental take (50 CFR 402.02). "Terms and conditions" implement the reasonable and prudent measures (50 CFR 402.14). These must be carried out for the exemption in section 7(o)(2) to apply.

The following measures are necessary and appropriate to minimize the impact of incidental take of listed species due to the proposed action:

The COE shall:

1. Minimize incidental take resulting from dredging, pile-installation and construction interaction with fish.
2. Minimize incidental take resulting from construction effects to water quality (turbidity, erosion and pollution).
3. Ensure completion of a monitoring and reporting program to confirm that the take exemption for the proposed action is not exceeded, and that the terms and conditions in this incidental take statement are effective in minimizing incidental take.

2.8.4 Terms and Conditions

The measures described below are non-discretionary, and must be undertaken by the COE and ODFW, must become binding conditions of the permit issued to ODFW, for the exemption in section 7(o)(2) to apply. The COE has a continuing duty to regulate the activity covered by this incidental take statement. If the COE (1) fails to assume and implement the terms and conditions or (2) fails to require ODFW to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit document, the protective coverage of section 7(o)(2) may lapse.

1. To implement Reasonable and Prudent Measure #1 (dredging, pile installation and construction interaction), the COE shall ensure that:

    a. In-water construction and dredging will be conducted during the reduced timeframe contained within the ODFW recommended IWWW.
    b. An ODFW or other supervisory fish biologist experience with in water construction activities in the project area will supervise that the appropriate minimization measure are followed to reduced interactions of equipment with fish.
    c. Pile installation will only occur within the IWWW. All piles will only be installed by the use of a vibratory hammer.

2. To implement Reasonable and Prudent Measure #2 (construction effects to water quality), the COE shall ensure that:

    a. Emergency Erosion Controls. Ensure that a supply of sediment control materials (*e.g.*, biofilter, sandbags, straw bales[8], wattles) is on site for emergency erosion control purposes.
    b. Temporary Erosion Controls. Place and appropriately install erosion controls until site restoration is complete.
    c. Mechanical Staging. Vehicles must be fueled, operated, maintained, and stored as follows:
        i. Vehicle staging, cleaning, maintenance, refueling, and fuel storage must take place in a vehicle staging area 150 ft or more from any stream, waterbody or wetland. All vehicles operated within 150 ft of any stream, waterbody 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 NMFS.
        ii. All equipment operated must be cleaned before beginning operations to remove all external oil, grease, dirt, and mud.
        iii. Stabilize all disturbed areas following any break in work unless construction will resume in 4 days.

[8] When available, use certified weed-free straw or hay bales to prevent introduction of noxious weeds.

iv. A chemical and pollution control plan will be prepared and carried out, commensurate with the scope of the project, that includes:
   (1) The name, phone number, and address of the person responsible for accomplishing the plan.
   (2) Best management practices to confine, remove, and dispose of construction waste, including every type of debris, discharge water, concrete, petroleum product, or other hazardous materials generated, used, or stored on-site.
   (3) Procedures to contain and control a spill of any hazardous material generated, used or stored onsite, including notification of proper authorities.

3. To implement Reasonable and Prudent Measure #3 (monitoring and reporting), the COE shall:

   a. Prepare a Monitoring Report. Conduct monitoring and prepare and submit a report to NMFS describing the applicant's success in meeting the terms and conditions contained in this Opinion. The content of the report shall include:
      i. Project identification.
         (1) Project name.
         (2) Type of activity.
         (3) Project location by 6th field USGS HUC and by latitude and longitude as determined from the appropriate 7-minute USGS quadrangle map.
         (4) Supervisory fish biologist – name and contact information.
         (5) Starting and ending dates for work completed.
      ii. Photo documentation. Photos of habitat conditions[9] at the in-water work site before, during, and after project completion.
         (1) 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 the subject.
      iii. Monitoring results for construction and pile-driving effects
         (1) Description of the visually monitored downstream extent of turbidity plumes resulting from in-water construction.
         (2) A summary of chemical, pollution and erosion control inspection results, including a description of any erosion control failure, contaminant release, and efforts to correct such incidences.
         (3) A summary of the total duration of all pile installations during the project implementation.
      iv. Fish Observation Monitoring
         (1) Any incidence of observed injury or mortality.
         (2) Number of listed salmon and steelhead observed.

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

(3) Location and condition of salmon and steelhead released.

v. Methods of work area and take minimization.

4. Submit Reports Upon Project Completion. To submit the monitoring report, or to reinitiate consultation, contact:

Oregon State Habitat Office
National Marine Fisheries Service
Attn: **NWR-2012-4014**
1201 NE Lloyd Blvd., Ste. 1100
Portland, OR 97232-2182

2.9. Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02). The following conservation recommendations are discretionary measures that NMFS believes are consistent with this obligation and therefore should be carried out by the Federal action agency:

1. NMFS recommends COE work with other land owners on long-term plans and designs to upgrade and modify other existing pump stations and intakes to prevent injury to fish and aquatic resources.
2. NMFS recommends COE work with private land owners and other non-governmental organizations to seek future funding sources for restoration of more natural streambanks along the developed and altered banks of the Columbia River mainstem upstream and downstream of the action area. Such efforts may increase habitat complexity to benefit fisheries and aquatic resources.

Please notify NMFS if the COE carries out these recommendations so that we will be kept informed of actions that are intended to improve the conservation of listed species or their designated critical habitats.

2.10 Reinitiation of Consultation

As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action on listed species or designated 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 on the listed species or critical habitat not considered in this opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action.

3. MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT ESSENTIAL FISH HABITAT CONSULTATION

The consultation requirement of section 305(b) of the MSA directs Federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. The MSA (section 3) defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Adverse effects include the direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects on EFH may result from actions occurring within EFH or outside EFH, and may include site-specific or EFH-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH.

This analysis is based, in part, on the EFH assessment provided by the Federal action agency and descriptions of EFH contained in the fishery management plans developed by the Pacific Fishery Management Council (PFMC) and approved by the Secretary of Commerce for Pacific coast salmon (PFMC 1999)**.**

3.1 Essential Fish Habitat Affected by the Project

The proposed action and action area in this opinion are described in the Introduction to this document. This action area includes areas designated as EFH for all life stages of Chinook salmon.

3.2 Adverse Effects on Essential Fish Habitat

Based on information provided in the BA and the analysis of effects presented in the ESA portion of this document, NMFS concludes the effects on Chinook salmon habitat are the same as those for the listed salmonids in this Opinion and are described in detail in the *Effects of the Action* section of this opinion.

The proposed action is likely to affect EFH in the following manner:

1. In-water construction and excavation will result in loss of the established streambed substrates and shallow-water habitat. Restoration of stream channel and fish passage will have long-term beneficial effects to habitat access.
2. Short-term elevation of turbidity and sedimentation within and immediately upstream and downstream from the construction area. A visible turbidity plume is likely to extend up to 500 ft downstream from in-water work site.
3. A short-term minor decrease in macro-invertebrates may occur as a result of increased fine sediment in stream substrates due to in-stream work. Macro-invertebrates will recolonize the affected area within a few months.
4. Habitat in project area and in-water channel will be temporarily blocked during in-water isolation of work area.

3.3 Essential Fish Habitat Conservation Recommendations

NMFS expects that full implementation of these EFH conservation recommendations would protect, by avoiding or minimizing the adverse effects described in section 3.2 above, approximately 10 acre of designated EFH for Pacific coast salmon.

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, two conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02).

The following two conservation measures are necessary to avoid, mitigate, or offset the impact of the proposed action on EFH. These conservation recommendations are a subset of the ESA terms and conditions.

1. Construction. Follow the term and condition #1 (work area isolation) and term and condition #2 (water quality). Methods will be used to isolate the work from the channel. Water quality will be maintained during construction activities through the use of erosion control measures, proper mechanical staging and the development and implementation of a chemical/pollution contamination plan.
2. Monitoring and Reporting. Follow term and condition #3 (monitoring).

The NMFS believes that these conservation recommendations are necessary conservation measures to avoid, mitigate, or offset the impact of the proposed action on EFH.

The COE is required to complete a supplemental EFH consultation with NMFS if it substantially revises its plans for this action in a manner that may adversely affect EFH or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations [50 CFR 600.920(k)].

3.4 Statutory Response Requirement

As required by section 305(b)(4)(B) of the MSA, the Federal agency must provide a detailed response in writing to NMFS within 30 days after receiving an EFH Conservation Recommendation from NMFS. Such a response must be provided at least 10 days prior to final approval of the action if the response is inconsistent with any of NMFS' EFH Conservation Recommendations, unless NMFS and the Federal agency have agreed to use alternative time frames for the Federal agency response. 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 NMFS Conservation Recommendations, the Federal agency must explain its reasons for not following the recommendations, including the scientific justification for any disagreements with NMFS over the anticipated effects of the action and the measures needed to avoid, minimize, mitigate, or offset such effects [50 CFR 600.920(k)(1)].

In response to increased oversight of overall EFH program effectiveness by the Office of Management and Budget, NMFS established a quarterly reporting requirement to determine how many conservation recommendations are provided as part of each EFH consultation and how many are adopted by the action agency. Therefore, we ask that in your statutory reply to the EFH portion of this consultation, you clearly identify the number of conservation recommendations accepted.

3.5 Supplemental Consultation

The COE must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations [50 CFR 600.920(l)].

4. DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW

Section 515 of the Treasury and General Government Appropriations Act of 2001 (Public Law 106-554) (Data Quality Act) specifies three components contributing to the quality of a document. They are utility, integrity, and objectivity. This section of the opinion addresses these Data Quality Act (DQA) components, documents compliance with the DQA, and certifies that this opinion has undergone pre-dissemination review.

4.1 Utility: Utility principally refers to ensuring that the information contained in this consultation is helpful, serviceable, and beneficial to the intended users. The intended users are the COE and ODFW.

An individual copy was provided to the COE. This consultation will be posted on the NMFS Northwest Region website (http://www.nwr.noaa.gov). The format and naming adheres to conventional standards for style.

4.2 Integrity: This consultation was completed on a computer system managed by NMFS in accordance with relevant information technology security policies and standards set out in Appendix III, Security of Automated Information Resources," Office of Management and Budget Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

4.3 Objectivity:

Information Product Category: Natural Resource Plan.
Standards: This consultation and supporting documents are clear, concise, complete, and unbiased; and were developed using commonly accepted scientific research methods. They adhere to published standards including the NMFS ESA Consultation Handbook, ESA Regulations, 50 CFR 402.01, *et seq*., and the MSA implementing regulations regarding EFH, 50 CFR 600.920(j).

Best Available Information: This consultation and supporting documents use the best available information, as referenced in the Literature Cited section. The analyses in this opinion/EFH consultation contain more background on information sources and quality.

Referencing: All supporting materials, information, data and analyses are properly referenced, consistent with standard scientific referencing style.

Review Process: This consultation was drafted by NMFS staff with training in ESA and MSA implementation, and reviewed in accordance with Northwest Region ESA quality control and assurance processes.

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oregon Fish and Wildlife Office
2600 SE 98th Avenue, Suite 100
Portland, Oregon 97266
Phone: (503) 231-6179 FAX: (503) 231-6195

Reply To: 8330.F0003(13)
File Name: Stahl_JSH_Farms_BO.docx
TS Number: TS 13-7
TAILS: 01EOFW00-2013-F-0003
Doc Type: Final

JAN -3 2013

Michael Turaski
Acting Chief, Regulatory Branch
Department of the Army
Corps of Engineers, Portland District
P.O. Box 2946
Portland, Oregon 97208-2946

Subject: Formal Consultation for the Stahl H.B. and JSH Farm River Pumping Station: Fish Screening and Intake Modification Project Middle Columbia-Lake Wallula, Umatilla County, Oregon

Dear Mr. Turaski:

This is in response to your request for formal consultation that was in a letter dated September 20, 2012, transmitting your evaluation of the effects to the threatened Columbia River population of bull trout (*Salvelinus confluentus*) and bull trout critical habitat, from the Stahl H.B. and JSH Farm River Pumping Station: Fish Screening and Intake Modification Project Middle Columbia-Lake Wallula, Umatilla County, Oregon. This document transmits the Fish and Wildlife Service's (Service) biological opinion (BO) based on our review of the above-mentioned project and its effects on bull trout and bull trout critical habitat in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

After reviewing the current status of bull trout, bull trout critical habitat, environmental baseline for the action area, and effects of the proposed action, it is the Service's opinion that the above-mentioned project is not likely to jeopardize the continued existence of bull trout and is not likely to destroy or adversely modify bull trout critical habitat. This BO is based on information provided in the September 11, 2012 biological assessment for the project addressing Columbia River bull trout and bull trout critical habitat. A complete administrative record of this consultation is on file at the Oregon Fish and Wildlife Office, Portland, Oregon.

If you have any questions or concerns regarding this BO, please contact Dan Perritt at (503) 231-6179.

Sincerely,

FSR

Paul Henson, Ph.D.
State Supervisor

Endangered Species Act – Section 7 Consultation

Biological Opinion

U.S. Fish and Wildlife Service
TAILS No: 01EOFW00-2013-F-0003

Stahl H.B. and JSH Farm River Pumping Station:
Fish Screening and Intake Modification Project
Middle Columbia-Lake Wallula, Umatilla County, Oregon

Agency: Department of the Army, Corps of Engineers, Portland District

Paul Henson, Ph.D.
For State Supervisor

1-3-13
Date

Introduction

After reviewing the current status of bull trout (*Salvelinus confluentus*), bull trout critical habitat, environmental baseline for the action area, effects of the proposed action, and anticipated cumulative effects, it is the Service's opinion that the Stahl H.B. and JSH Farm River Pumping Station: Fish Screening and Intake Modification Project is not likely to jeopardize the continued existence of bull trout and is not likely to destroy or adversely modify bull trout critical habitat. This BO is based on information provided in the biological assessment (BA) (Campbell and Van Staveren 2012) dated September 11, 2012 for the proposed action addressing bull trout and bull trout critical habitat.

Consultation History

This BO is based on correspondence and discussions with Pacific Habitat Services. Inc. (Wilsonville, Oregon), Corps of Engineers (COE), National Marine Fisheries Service (NMFS), and the Fish and Wildlife Service (Service).

A brief history of the consultation is included below:

- July 17, 2012 - The Service received a draft copy of the BA for the Stahl H.B. and JSH Farm River Pumping Station: Fish Screening and Intake Modification Project.
- August 2012 - The Service provided comments on the draft BA to Eric Campbell, Pacific Habitat Services, Inc.
- September 24, 2012 - A request for formal Section 7 consultation along with the final BA was received from the COE at the Service's La Grande Field Office.
- October 10, 2012 - Formal Section 7 consultation was initiated for the proposed action at the Service's Oregon Fish and Wildlife Office (OFWO), Portland, Oregon.

Biological Opinion

The COE made a determination of "*may affect, likely to adversely affect*" for the threatened bull trout and "*adverse/beneficial affect without adverse modification*" for bull trout critical habitat.

Proposed Action Description

The purpose and need for the proposed action is three-fold: 1) to remove (dredge) accumulated sediments in front of and underneath the Stahl H.B. Farm pumping station, 2) modify and extend the Stahl H.B. and JSH Farm water intakes, and 3) update the fish screening facilities at both pumping stations to current NMFS criteria. All of these activities are proposed to be completed in 2013 during the Oregon Department of Fish and Wildlife (ODFW) preferred in-water work period between January 1 and February 28. Normal operation of the pumping facilities occurs from April through October.

Dredging Activities. To complete proposed modifications at the Stahl H.B. Farm pumping station, a suction dredge operating from a floating barge will remove approximately 300 cubic yards of

accumulated sediment in front of and underneath the pumping station. Accumulated sediments consist of coarse to very coarse sand, as determined through sediment sampling. Removed dredge materials will be returned back to the Columbia River channel approximately 300 feet north of the pumping station at a channel depth of approximately 40 feet. Conditions associated with the Oregon Department of Environmental Quality's 401 Water Quality Certification will be followed during dredging activities. After the removal of dredged materials, a sheet pile wall that extends approximately 35 feet into the active river channel will be removed at the west end of the pumping station.

Water Intake Activities. New 72-inch and 60-inch diameter intake pipes will be installed at the Stahl H.B. and JSH pumping stations, respectively. Intake pipes will extend into deeper water approximately 180 feet out into the Columbia River channel from the pumping stations. Steel piles will be installed in the river bottom with a vibrating hammer to construct the intake pipe cradle supports. Steel manifolds will be attached to the intake pipes. Steel connecting pipes will be installed between the manifolds and each pump unit. Detailed engineered drawings are included in the BA.

Fish Screening Activities. Four new pump cans will be installed on the channel ends of the intake pipes for both pumping stations. Each can will be fitted with NMFS approved slotted fish screens. These screens will improve upon the intake velocity and meet NMFS fish screen criteria to prevent entrainment or impingement of juvenile salmonids during pumping operations. Detailed engineered drawings are included in the BA.

Site Restoration. Site restoration is not anticipated, but if upland areas are disturbed during project staging or access, the areas will be restored with appropriate methods (e.g., grading, hydro-seeding, and/or native plantings).

Action Area

Action area is defined as all areas affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). For the purposes of this consultation, the action area is defined as an area 300 feet around and 500 feet downstream and upstream of the proposed in-water dredging and disposal operation and intake pipe/fish screen installations. The project site is located at river mile 301.6 on the Columbia River, near Hermiston, Oregon in Umatilla County. This action area will encompass any temporary, short-term, or long-term effects of the proposed action to the bull trout and bull trout critical habitat.

Analytical Framework for the Jeopardy and Adverse Modification Determinations

Jeopardy determination

In accordance with policy and regulation, the jeopardy analysis in this BO relies on four components: (1) the Status of the Species, which evaluates range-wide conditions, the factors responsible for that condition, and survival and recovery needs for the species covered under the BO; (2) the Environmental Baseline, which evaluates the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and

recovery of the covered species; (3) the Effects of the Proposed Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the covered species; and (4) Cumulative Effects, which evaluates the effects of future, non-Federal activities in the action area on the covered species.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the current status of the species covered under the BO, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the covered species in the wild by reducing the reproduction, numbers, or distribution of the species.

The jeopardy analysis in this BO places an emphasis on consideration of the range-wide survival and recovery needs of the species covered under the BO and the role of the action area in the survival and recovery of the covered species as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the jeopardy determination.

Adverse modification determination

This BO does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statutory provisions of the Endangered Species Act (ESA) to complete the following analysis with respect to critical habitat.

In accordance with policy and regulation, the adverse modification analysis in this BO relies on four components: (1) the Status of Critical Habitat, which evaluates the range-wide condition of designated critical habitats for the species covered under the BO in terms of primary constituent elements (PCEs), the factors responsible for that condition, and the intended recovery function of the critical habitat overall; (2) the Environmental Baseline, which evaluates the condition of the critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area; (3) the Effects of the Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the PCEs and how that will influence the recovery role of affected critical habitat units; and (4) Cumulative Effects, which evaluates the effects of future, non-Federal activities in the action area on the PCEs and how that will influence the recovery role of affected critical habitat units.

For purposes of the adverse modification determination, the effects of the proposed Federal action on critical habitats for the species covered under the BO are evaluated in the context of the range-wide condition of the critical habitat, taking into account any cumulative effects, to determine if the critical habitat range-wide would remain functional (or would retain the current ability for the PCEs to be functionally established in areas of currently unsuitable but capable habitat) to serve its intended recovery role for the covered species.

The analysis in this BO places an emphasis on using the intended range-wide recovery function of critical habitats for the species covered under the BO and the role of the action area relative to that

intended function as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the adverse modification determination.

Status of the Species

Listing History. The coterminous United States population of the bull trout (Salvelinus confluentus) was listed as threatened on November 1, 1999 (64 FR 58910). The final designation of critical habitat for bull trout in the coterminous United States was completed in 2010 (75 FR 63898).

Distribution. The historical range of bull trout in the coterminous United States extended from the Canadian border south to the Jarbidge River in northern Nevada and from the Pacific Ocean inland to the Clark Fork River in western Montana and the Little Lost River in central Idaho. Genetic analyses have shown that bull trout in the coterminous United States are divided into major genetically differentiated (*e.g.,* evolutionary) groups or lineages (Spruell *et al.* 2003, Ardren *et al.* 2010, Taylor *et al.* 1999). At a coarse scale, these assessments have identified the existence of distinct "coastal" and "interior" lineages. The "coastal" lineage includes the Deschutes River and all of the Columbia River drainage downstream (including the Willamette Basin), as well as coastal streams in Washington, Oregon, and British Columbia. The "interior" lineage includes tributaries of the Columbia River upstream from the John Day River, including major river basins in northeastern Oregon, eastern Washington, Idaho, and northwestern Montana.

Life History. Bull trout exhibit both resident and migratory life-history strategies (Rieman and McIntyre 1993). Resident bull trout complete their entire life cycle in the tributary (or nearby) streams in which they spawn and rear. Migratory bull trout spawn in tributary streams where juvenile fish rear one to four years before migrating to either a lake (adfluvial form), river (fluvial form) (Fraley and Shepard 1989, Goetz 1989), or in certain coastal areas, to saltwater (anadromous) (Cavender 1978, McPhail and Baxter 1996, WDFW 1997). Resident and migratory life-history forms may be found together, but it is unknown if they represent a single population or separate populations (Rieman and McIntyre 1993). Either form may give rise to offspring exhibiting either resident or migratory behavior (Rieman and McIntyre 1993). The multiple life-history strategies found in bull trout populations represent important diversity (both spatial and genetic) that help protect these populations from environmental stochasticity.

The size and age of bull trout at maturity depends upon the life history strategy and habitat limitations. Resident fish tend to be smaller than migratory fish at maturity and produce fewer eggs (Fraley and Shepard 1989, Goetz 1989). Resident adults usually range from 150-300 millimeters (mm) (6-12 inches) total length (TL). Migratory adults however, having lived for several years in larger rivers or lakes and feeding on other fish, grow to a much larger size and commonly reach 600 millimeters (24 inches) TL or more (Pratt 1985, Goetz 1989). The largest verified bull trout was a 14.6 kilogram (32 pound) adfluvial fish caught in Lake Pend Oreille, Idaho, in 1949 (Simpson and Wallace 1982). Size differs little between life history forms during their first years of life in headwater streams, but diverges as migratory fish move into larger and more productive waters (Rieman and McIntyre 1993).

Ratliff (1992) reported that bull trout under 100 mm (4 inches) in length were generally only found in the vicinity of spawning areas, and that fish over 100 mm were found downstream in larger channels and reservoirs in the Metolius River Basin. Juvenile migrants in the Umatilla River were primarily 100-200 mm long (4-8 inches) in the spring and 200-300 mm long (8-12 inches) in October (Buchanan *et al.* 1997). The age at migration for juveniles is variable. Ratliff (1992) reported that most juveniles reached a size to migrate downstream at age 2. Pratt (1992) had similar findings for age-at-migration of juvenile bull trout from tributaries of the Flathead River. The seasonal timing of juvenile downstream migration appears similarly variable.

Bull trout normally reach sexual maturity in 4-7 years and may live longer than 12 years. The species is iteroparous (*i.e.,* can spawn multiple times in their lifetime) and adults may spawn each year or in alternate years (Batt 1996). Repeat spawning frequency and post spawning mortality are not well documented (Leathe and Graham 1982, Fraley and Shepard 1989, Pratt 1992, Rieman and McIntyre 1996), but post spawning survival rates are believed to be high.

Bull trout typically spawn from late August-November during periods of decreasing water temperatures (*i.e.,* below 9 °C/48 °F). Redds are often constructed in stream reaches fed by springs or near other sources of cold groundwater (Goetz 1989, Pratt 1992, Rieman and McIntyre 1996). Migratory bull trout frequently begin spawning migrations as early as April and have been known to move upstream as far as 250 kilometers (km) (155 miles) to spawning grounds in Montana (Fraley and Shepard 1989, Swanberg 1997). In Idaho, bull trout moved 109 km (67.5 miles) from Arrowrock Reservoir to spawning areas in the headwaters of the Boise River (Flatter 1998). In the Blackfoot River, Montana, bull trout began spring spawning migrations in response to increasing temperatures (Swanberg 1997). Depending on water temperature, egg incubation is normally 100-145 days (Pratt 1992), and after hatching, juveniles remain in the substrate. Time from egg deposition to emergence of fry may surpass 220 days. Fry normally emerge from early April through May, depending on water temperatures and increasing stream flows (Pratt 1992, Ratliff and Howell 1992).

Bull trout are opportunistic feeders, with food habits primarily a function of size and life history strategy. Resident and juvenile migratory bull trout prey on terrestrial and aquatic insects, macro-zooplankton, and small fish (Boag 1987, Goetz 1989, Donald and Alger 1993). Adult migratory bull trout feed on various fish species (Leathe and Graham 1982, Fraley and Shepard 1989, Brown 1992, Donald and Alger 1993). In coastal areas of western Washington, bull trout feed on Pacific herring (*Clupea pallasi*), Pacific sand lance (*Ammodytes hexapterus*), and surf smelt (*Hypomesus pretiosus*) in the ocean (WDFW 1997).

Population Dynamics. Although bull trout are widely distributed over a large geographic area, they exhibit a patchy distribution, even in pristine habitats (Rieman and McIntyre 1993). Increased habitat fragmentation reduces the amount of available habitat and increases isolation from other populations of the same species (Saunders *et al.* 1991). Burkey (1989) concluded that when species are isolated by fragmented habitats, low rates of population growth are typical in local populations and their probability of extinction is directly related to the degree of isolation and fragmentation. Without sufficient immigration, growth for local populations may be low and probability of extinction high (Burkey 1989, Burkey 1995).

Metapopulation concepts of conservation biology theory have been suggested relative to the distribution and characteristics of bull trout, although empirical evidence is relatively scant (Rieman and McIntyre 1993, Dunham and Rieman 1999, Rieman and Dunham 2000). A metapopulation is an interacting network of local populations with varying frequencies of migration and gene flow among them (Meffe and Carroll 1994). For inland bull trout, metapopulation theory is most likely applicable at the watershed scale where habitat consists of discrete patches or collections of habitat capable of supporting local populations; local populations are for the most part independent and represent discrete reproductive units; and long-term, low-rate dispersal patterns among component populations influences the persistence of at least some of the local populations (Rieman and Dunham 2000).

Ideally, multiple local populations distributed throughout a watershed provide a mechanism for spreading risk because the simultaneous loss of all local populations is unlikely. However, habitat alteration, primarily through the construction of impoundments, dams, and water diversions has fragmented habitats, eliminated migratory corridors, and in many cases isolated bull trout in the headwaters of tributaries (Rieman *et al.* 1997, Dunham and Rieman 1999, Spruell *et al.* 1999, Rieman and Dunham 2000). Accordingly, human-induced factors as well as natural factors affecting bull trout distribution have likely limited the expression of the metapopulation concept for bull trout to patches of habitat within the overall distribution of the species (Dunham and Rieman 1999).

However, despite the theoretical fit, the relatively recent and brief time period during which bull trout investigations have taken place does not provide certainty as to whether a metapopulation dynamic is occurring *(e.g.,* a balance between local extirpations and recolonizations) across the range of bull trout or whether the persistence of bull trout in large or closely interconnected habitat patches (Dunham and Rieman 1999) is simply reflective of a general deterministic trend towards extinction of the species where the larger or interconnected patches are relics of historically wider distribution (Rieman and Dunham 2000). Recent research (Whiteley *et al.* 2003) does, however, provide stronger genetic evidence for the presence of a metapopulation process for bull trout, at least in the Boise River basin of Idaho.

Reasons for Listing. Bull trout distribution, abundance, and habitat quality have declined rangewide (Bond 1992, Schill 1992, Thomas 1992, Ziller 1992, Rieman and McIntyre 1993, Newton and Pribyl 1994, IDFG *in litt.* 1995, McPhail and Baxter 1996). Several local extirpations have been documented, beginning in the 1950's (Rode 1990, Ratliff and Howell 1992, Donald and Alger 1993, Goetz 1994, Newton and Pribyl 1994, Berg and Priest 1995, Light *et al.* 1996, Buchanan *et al.* 1997, WDFW 1998). Bull trout were extirpated from the southernmost portion of their historic range, the McCloud River in California, around 1975 (Moyle 1976, Rode 1990). Bull trout have been functionally extirpated (*i.e.*, few individuals may occur there, but do not constitute a viable population) in the Coeur d'Alene River basin in Idaho and in the Lake Chelan and Okanogan River basins in Washington (64 FR 58910).

These declines result from the combined effects of habitat degradation and fragmentation, the blockage of migratory corridors; poor water quality, angler harvest and poaching, entrainment into diversion channels and dams, and introduced nonnative species. Specific land and water management activities that depress bull trout populations and degrade habitat include dams and

other diversion structures, forest management practices, livestock grazing, agriculture, agricultural diversions, road construction and maintenance, mining, and urban and rural development (Beschta *et al.* 1987, Chamberlain *et al.* 1991, Furniss *et al.* 1991, Meehan 1991, Nehlsen *et al.* 1991, Sedell and Everest 1991, Craig and Wissmar 1993, Henjum *et al.* 1994, McIntosh *et al.* 1994, Wissmar *et al.* 1994, MBTSG 1995a-e, MBTSG 1996a-b, Light *et al.* 1996, USDA 1995).

Rangewide Trend. In the rules listing bull trout as threatened, the Service identified subpopulations (*i.e.*, isolated groups of bull trout thought to lack two-way exchange of individuals), for which status, distribution, and threats to bull trout were evaluated. Because habitat fragmentation and barriers have isolated bull trout throughout their current range, a subpopulation was considered a reproductively isolated group of bull trout that spawns within a particular river or area of a river system. Overall, 187 subpopulations were identified in the 5 distinct population segments, 7 in the Klamath River, 141 in the Columbia River, 1 in the Jarbidge River, 34 in the Coastal-Puget Sound, and 4 in the St. Mary-Belly River populations. No new subpopulations have been identified and no subpopulations have been lost since listing.

Critical Habitat. Over the past several years, the Service has published several proposed and final critical habitat rules for bull trout populations. The latest final bull trout critical habitat rule was completed and published on October 18, 2010 for bull trout in the coterminous United States (75 FR 63898).

Primary Constituent Elements of Critical Habitat. The Service used the best scientific and commercial data available to designate critical habitat, giving consideration to those physical and biological features that are essential to bull trout survival. Within the critical habitat areas, the primary constituent elements (PCEs) for bull trout are those habitat components that are essential for the primary biological needs of foraging, reproducing, rearing of young, dispersal, genetic exchange, or sheltering. In the 2010 final bull trout critical habitat rule (75 FR 63898), the Service listed the following PCEs.

1. Springs, seeps, groundwater sources, and subsurface water connectivity (hyporehic flows) to contribute to water quality and quantity and provide thermal refugia.
2. Migratory habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including but not limited to permanent, partial, intermittent, or seasonal barriers.
3. An abundant food base, including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish.
4. Complex river, stream, lake, reservoir, and marine shoreline aquatic environments and processes with features such as large wood, side channels, pools, undercut banks and substrates, to provide a variety of depths, gradients, velocities, and structure.
5. Water temperatures ranging from 2-15 °C (36-59 °F), with adequate thermal refugia available for temperatures at the upper end of this range. Specific temperatures within this range will vary depending on bull trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shade, such as that provided by riparian habitat; and local groundwater influence.
6. Substrates of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal

amount (*e.g.,* less than 12%) of fine substrate less than 0.85 mm (0.03 inches) in diameter and minimal embeddedness of these fines in larger substrates are characteristic of these conditions.

7. A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, they minimize departures from a natural hydrograph.
8. Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.
9. Few or no nonnative predatory (*e.g.,* lake trout (*Salvelinus namaycush*), walleye (*Stizostedion vitreum*), northern pike (*Esox lucius*), smallmouth bass (*Micropterus dolomieui*); inbreeding (*e.g.,* brook trout); or competitive (*e.g.,* brown trout (*Salvelinus trutta*)) species present.

Bull trout critical habitat PCEs in the remaining portion of this BO will reference the PCEs by the above numbers.

Conservation Strategy and Objectives. The Service's primary objective in designating critical habitat was to identify key components of bull trout habitat across the range that supported essential life history stages and contributed to addressing the goals and objectives outlined in the draft recovery plan chapters for the species. Recovery of bull trout will require reducing threats to the long-term persistence of populations, maintaining multiple interconnected populations of bull trout across the diverse habitats of their native range, and preserving the diversity of bull trout life history strategies (*e.g.,* resident or migratory forms, emigration age, spawning frequency, local habitat adaptations). To do this, recovery objectives for all areas were identified as follows: 1) maintain current distribution of bull trout within core areas as described in recovery unit chapters and restore distribution where recommended in recovery unit chapters; 2) maintain stable or increasing trend in abundance of bull trout; 3) restore and maintain suitable habitat conditions for all bull trout life history stages and strategies; and 4) conserve genetic diversity and provide opportunity for genetic exchange.

Important considerations in selecting areas for critical habitat designation included factors specific to each river system, such as size (*e.g.,* stream order), gradient, channel morphology, connectivity to other aquatic habitats, and habitat complexity and diversity, as well as rangewide recovery considerations. The Service took into account preferred habitat for bull trout which ranges from small headwater streams used largely for spawning and rearing, to downstream mainstem portions of river networks used for rearing and foraging, migratory, and overwintering (FMO) habitat. It is essential for the conservation of bull trout to protect those features that define the remaining essential habitat, through appropriate management, from irreversible threats and habitat conversion. Within each area designated as critical habitat, the physical and biological features essential for the conservation of the bull trout may require some level of management and/or protection to avoid destruction or adverse modification of habitat essential to its conservation (70 FR 56212). Maintenance or establishment of functional PCEs throughout all core areas is essential to the conservation of bull trout because: 1) genetic diversity enhances long-term survival of a species by increasing the likelihood that the species is able to survive changing environmental conditions; 2) maintaining multiple bull trout core areas distributed and interconnected throughout their current range will provide a mechanism for spreading the risk of extinction from stochastic events; 3) maintaining core areas with multiple local populations will address potential negative implications

associated with low effective population levels; and 4) core areas provide connectivity between areas of high quality habitat and contain important migration corridors for migratory bull trout.

The importance of maintaining the migratory life-history form of bull trout, as well as the presence of migratory runs of other salmonids that may provide a forage base for bull trout, is repeatedly emphasized in the scientific literature, and was a foundational concern addressed during designation of bull trout critical habitat. The ability to migrate is important to the persistence of local bull trout subpopulations (Rieman and McIntyre 1993, Gilpin 1996, Rieman and Clayton 1997, Rieman *et al.* 1997). Bull trout rely on migratory corridors to move from spawning and rearing habitats to foraging and overwintering habitats and back. Migratory bull trout become much larger than resident fish in the more productive waters of larger streams and lakes, leading to increased reproductive potential (McPhail and Baxter 1996). Also, local populations that have been extirpated by catastrophic events may become reestablished as a result of movements by bull trout through migratory corridors (Rieman and McIntyre 1993, MBTSG 1998). Activities that preclude the function of migratory corridors (*e.g.,* stream blockages) may adversely affect bull trout critical habitat.

Consulted-on Effects. Consulted-on effects are those effects that have been analyzed through section 7 consultation as reported in a BO. These effects are an important component of objectively characterizing the current condition of the species. To assess consulted-on effects to bull trout, we analyzed all of the BOs received by the Region 1 and Region 6 Offices, from the time of listing until August 2003; this added to 137 BOs. Of these, 124 BOs (91 percent) applied to activities affecting bull trout in the Columbia Basin DPS, 12 BOs (9 percent) applied to activities affecting bull trout in the Coastal-Puget Sound DPS, 7 BOs (5 percent) applied to activities affecting bull trout in the Klamath Basin DPS, and 1 BO (<1 percent) applied to activities affecting the Jarbidge and St. Mary Belly DPSs (Note: these percentages do not add to 100, because several BOs applied to more than one DPS). The geographic scale of these consultations varied from individual actions (*e.g.,* construction of a bridge or pipeline) within one basin to multiple project actions occurring across several basins.

Our analysis showed that we consulted on a wide array of actions which had varying level of effects. Many of the actions resulted in only short-term adverse effects and some with long-term beneficial effects. Some of the actions resulted in long-term adverse effects. No actions that have undergone consultation were found to appreciably reduce the likelihood of survival and recovery of the bull trout. Furthermore, no actions that have undergone consultation were anticipated to result in the loss of any subpopulations or local populations of bull trout. A more detailed analysis of consulted-on effects to the bull trout is available in our files and is hereby incorporated by reference.

Environmental Baseline

The number of bull trout that may be present in or near the action area during the timing of the proposed action is difficult to determine based on available data. High winter river flows in the Columbia River make the detection of bull trout very difficult. Bull trout are known to use the Columbia River as over wintering area (Nelson *et al.* 2011), but prefer to over winter in tributaries to the Columbia River. Bull trout in the various tributary river basins along the Columbia River are

primarily fluvial migrants that overwinter in the middle or lower mainstem sections of river basins (BioAnalysts, Inc. 2002, Nelson 2004, Starcevich *et al.* 2012). The closest known local bull trout populations to the action area occur in the North Fork Umatilla River and North Fork Meacham Creek (USFWS 2010). The mouth of the Umatilla River is located approximately 10 miles downstream of the action area below McNary Dam. Bull trout population and redd counts have been variable and show a declining trend in this river basin since the mid 1990's to the present (ODFW 2005, USFWS 2010). Additional bull trout populations occur approximately 20 miles upstream on the Columbia River in the Walla Walla River basin where bull trout population trends are increasing (ODFW 2005). Movement of bull trout population in both of these river basins is hindered by poor water quality and instream diversions and dams (ODFW 2005).

Bull Trout Critical Habitat in the Action Area

The action area is located within the bull trout Umatilla River critical habitat unit (Unit 13) in the mid-Columbia recovery unit. The Columbia River within this critical habitat unit is important foraging, migration, and over wintering habitat for juvenile and adult bull trout. The habitat conditions at the project site do not appear to support preferable habitat conditions for bull trout due to relatively shallow water depths, lack of in/over water structures, sandy substrates, and operational disturbance activities at the pumping stations. The shoreline at the project site consists of a steep, sparsely vegetated rip-rap streambank that provides little aquatic habitat complexity. The general topography within the area ranges from relatively level uplands to steep sloping streambanks along the river.

Effects of the Proposed Action

The effects of the proposed action include an analysis of direct and indirect effects. Direct effects are those impacts from the action that immediately affect federally-listed species or their habitat. Indirect effects are those impacts from the action that are later in time and may occur outside of the area directly affected by the action. Indirect effects must be reasonably certain to occur before they can be considered as an effect of the proposed action.

At times there are other activities that may be interrelated or interdependent with the proposed action under consideration that could result in additional effects to federally-listed species or their habitat that must be considered along with the action. An interrelated activity is an activity that is part of the proposed action and depends on the action for its justification. An interdependent activity is an activity that has no independent utility apart from the proposed action.

In determining whether the proposed action is likely to jeopardize the recovery and survival of a federally-listed species, the Service analyzes effects of the action and the effects of other activities that are interrelated or interdependent with the action in context with the environmental baseline. All activities under the proposed action are evaluated against and added to the environmental baseline.

During the remainder of this analysis, short-term project-related adverse effects to bull trout and bull trout critical habitat are effects usually lasting less than thirty days and long-term effects less

than ninety days. Project-related long-term beneficial effects to the species and critical habitat are expected to last for many years.

Direct and Indirect Effects to Bull Trout

Project activities implemented near or below the water's edge can potentially cause the most direct and indirect effects to bull trout. Timing and construction activities can also cause potential effects to species from in-water work. Lethal and sub-lethal effects are often unavoidable where in-water work cannot be conducted at a time or in a manner when the species is not present.

Entrainment/Impingement

Entrainment may occur if bull trout are drawn into the suction dredge during proposed dredging activities. The potential for entrainment is largely dependent on the likelihood of fish occurring within the dredge prism, depth of dredging, surface area of the suction dredge, and life stage of the fish. However, the probability of entrainment is likely very low given the timing of in-water work (January 1 – February 28), the surface area of the suction dredge intake (8 inches in diameter), and depth that the dredge intake will remain buried in the substrate (up to a foot during dredging).

The new fish screens to be installed on the redesigned intake pipes will improve approach velocity, meet NMFS fish screen criteria, and reduce shoreline attraction flows to prevent entrainment or impingement of migrating juvenile bull trout during pumping operations. Extending the ends of the intake pipes further from the shoreline will lessen future entrainment and impingement of juvenile fish. If properly maintained, these redesigned intakes should be beneficial to salmonids in general during the life of the structures.

Hydro-acoustics

Pile driving activities increase underwater ambient noise, pressure, and water particle motion (Carlson *et al.* 2001, Popper and Hasting 2009). These increases may cause sub-lethal and/or lethal effects on bull trout in the immediate vicinity of this activity. A host of sub-lethal effects to fish have been documented under experimental conditions with pile driving activities (Carlson *et al.* 2001, Hastings and Popper 2005, Popper and Hastings 2009), including, but are not limited to, physical injury (*e.g.,* auditory damage, tissue/vessel damage, blood gases increases) and behavioral changes (*e.g.,* interference with migration/movement, foraging, predator avoidance). Lethal affects (immediate or delayed mortality) can also occur depending on the fish species/life stage and site specific activities. These effects will be dependent on several factors including the pile driving method, distance fish are from the site of the disturbance, and received level and duration of the sound exposure.

The two most common methods to drive piles are with a vibrating hammer or impact hammer. A vibrating hammer produces sound levels that are substantially less than an impact hammer. However, the total sound energy imparted by a vibrating hammer can be comparable to impact hammers since vibrating hammers are usually operated on a more continuous basis and requires more time in operation to drive an individual pile. During an Oregon study on the use of a vibrating hammer to drive 9-inch diameter x 60-foot long steel piles, Carlson et al. (2001) determined it was

unlikely for this activity to cause avoidance response by juvenile salmonids beyond the immediate vicinity (approximately 20-30 feet) from the pile driving site. Carlson et al. (2001) further stated the amount of time sound is generated by this activity will be a very small amount for most projects in relation to a work day.

The proposed use of a vibratory hammer to install the 28 steel piles for the intake pipe cradle assemblies is anticipated to result in few, if any, sub-lethal and no lethal affects to bull trout. This is based on the low number of juveniles and adults that are expected to be within the action area during the in-water work period. Short-term displacement or disturbance of bull trout (*e.g.,* from foraging, resting, or moving through project area) may also due to other types of equipment and construction noise and/or human presence.

Water Quality

Short-term, localized project-related increases in background turbidity levels will likely occur as a result of activities associated with dredging and piling installation. Given the existing substrate conditions (coarse sand), proposed dredging (suction dredge) and disposal methods (into the river at a depth of approximately 40 feet), increases in background turbidity associated with dredging activities will be minimized and concentrated away from the shoreline. The implementation of the proposed action will also be occurring when higher winter flows are occurring in the Columbia River allowing for a greater dilution factor of dredged materials. In addition, it is anticipated that turbidity associated with vibratory hammer use during piling installation will be highly localized. Short-term, localized increases in background turbidity resulting from temporary work below the ordinary high water line are not expected to result in any net change in function of the instream habitat. Therefore, suspended turbidity levels from these operations will most likely be low enough and of a short enough duration to avoid any significant adverse effects to bull trout or its designated critical habitat in the action area.

Heavy equipment operating near and over the river channel within the action area represents potential sources of chemical contamination. There may be short-term chemical exposures from the use of this equipment and/or accidental spills (*e.g.,* diesel fuel, oil, hydraulic fluids, and antifreeze). The introduction of chemicals can be acute, occurring as a result of an equipment leak during construction activities, refueling spills, leaching, or run-off. Accidental spills of construction material or petroleum products would adversely affect water quality and potentially impact bull trout. Chemical exposures can alter fecundity, increase disease, shift biotic communities, and reduce the overall health of bull trout. The potential effects of chemical exposures may be lethal or sub-lethal and are generally correlated to the concentration of chemical contaminants within the species' habitat. If contamination levels are high enough, direct lethal effects are possible through the disruption of biological processes. Development and implementation of a Pollution Control Plan for the proposed action (to include containment measures and spill response for construction-related chemical hazards) will significantly reduce the likelihood for chemical releases within the action area. In addition, the Portland Sediment Evaluation Team granted a no-test exclusion for sediment samples collected within the dredging area based on the small volume of material to be dredged and the distance of the project area from potential sources of contamination.

Vegetation Disturbance

The temporal and spatial scales of vegetation removal under the proposed action are also factors to consider. The temporal nature of vegetation removal is typically related to the age of the vegetation being removed and the time required for the vegetation to re-establish. The adverse effect from vegetation alterations at the project location is considered relatively small. However, vegetation removal is likely to result in some degree of ground disturbance, generating the potential for soil erosion, and consequently resulting in turbidity and sedimentation on local levels. These effects are generally correlated to the concentration of sediments within the water column. The increased turbidity should decrease as it flows downstream and will likely be back to baseline levels well before reaching the end of the action area.

To minimize or eliminate the above-mentioned potential direct and indirect effects, conservation measures listed in the project BA (hereby incorporated by reference) will be implemented before, during and after project construction, as appropriate. It is expected that any adverse effects to juvenile or adult bull trout will be minimal in intensity and duration and sub-lethal in nature during the implementation of the proposed action.

Effects to Bull Trout Critical Habitat.

The Service has determined that the proposed action will not adversely modify bull trout critical habitat. The proposed action is expected to have a short-term, but limited, adverse effect on PCE 8 (*i.e.,* Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited) primarily during the dredging operation. The proposed action will have a more permanent beneficial effect on this PCE by eliminating the need for dredging activities to occur in the future at the project site.

Effects of Interrelated and interdependent Actions

Interrelated actions are those that are a part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Both interdependent and interrelated activities are assessed by applying the "but for" test, which asks whether any action and its associated impacts would occur "but for" the action. No effects of interrelated and/or interdependent actions are expected to result from the proposed action.

Summary of Effect Analysis

The Service does not expect significant adverse effects to bull trout or adverse modifications to bull trout critical habitat from implementing the proposed action. Adverse effects to bull trout and its critical habitat will be minimized or eliminated, to the extent possible, by implementing conservation measure as listed in the project BA. Table 1 shows the overall effects of the proposed action based on environmental factors.

Table 1. Checklist for documenting environmental baseline and effects of the proposed action on relevant indicators for ESA-listed fish species within the action area (Source: Campbell and Van Staveren 2012).

Pathways and Indicators	Environmental Baseline	Effects of the Proposed Action
Water Quality		
Temperature	Not Properly Functioning	Maintain
Sediment/Turbidity	Not Properly Functioning	Maintain (-)
Chemical Contamination	Not Properly Functioning	Maintain
Habitat Access		
Physical Barriers	At Risk	Maintain(+)
Habitat Elements		
Substrate	Not Properly Functioning	Maintain (-)
Large Wood	Not Properly Functioning	Maintain
Pool Frequency	At Risk	Maintain
Pool Quality	At Risk	Maintain
Off-Channel Habitat	At Risk	Maintain
Refugia	Not Properly Functioning	Maintain
Channel Conditions and Dynamics		
Width/Depth Ratio	Not Properly Functioning	Maintain
Streambank Condition	At Risk	Maintain
Floodplain Connectivity	Not Properly Functioning	Maintain
Flow/Hydrology		
Peak/Base Flows	Not Properly Functioning	Maintain
Drainage Network Increase	Not Properly Functioning	Maintain
Watershed Conditions		
Road Density/Location	At Risk	Maintain
Disturbance History	Not Properly Functioning	Maintain
Riparian Reserves	Not Properly Functioning	Maintain

Maintain = no localized, temporary, or system-wide effect
Maintain (-) = localized, temporary effect, no system-wide effect
Maintain (+) = localized benefit, no system-wide effect
Restore = system-wide benefit

Cumulative effects

Cumulative effects include the effects of future state, tribal, local or private actions that are reasonably certain to occur in the action area considered in this BO. This includes all efforts completed by these entities in support of bull trout not related to the proposed action covered under this BO. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA. The Service is unaware of any significant change in non-Federal activities that are reasonably certain to occur

within the action area. The Service assumes that future non-Federal, state, and private activities will continue at similar intensities as in recent years.

Conclusion

After the reviewing the 1) current status of bull trout and bull trout designated critical habitat, 2) environmental baseline for bull trout within the action area, and 3) effects of the proposed action on bull trout and bull trout critical habitat, it is the Service's biological opinion that the proposed action is not likely to jeopardize the continued existence of bull trout and is not likely to destroy or adversely modify designated critical habitat for bull trout.

The Service's no jeopardy and no adverse modification determinations are also based on the following considerations.

- The conservation measures, as applied to the proposed action will:
    a. Minimize or eliminate the amount of harm and harassment to bull trout (*e.g.,* not expected to appreciably reduce either the survival or recovery of the species, and will not result in a significant reduction in numbers or distribution of the species).
    b. Ensure that there will only be short-term adverse effects to aquatic and terrestrial habitats (*e.g.,* water quality, channel dynamics, and overall watershed conditions and functions), including bull trout critical habitat.
    c. Allow the scheduling of project activities to occur at times that are least sensitive to bull trout (*e.g.,* ODFW preferred in-water work period).

Incidental Take Statement

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service as an act that actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is further defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by COE so that they become binding conditions of any grant or permit issued to an applicant, as appropriate, for the exemption in section 7(o)(2) to apply. If COE: 1) fails to assume and implement the terms and conditions or 2) fails to adhere to the terms and conditions of the incidental take statement through

enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, COE must report the progress of the action and its impact on federally-listed species to the Service as specified in the incidental take statement (50 CFR 402.14(i)(3)).

Amount or extent of take

Although the Service anticipates a low number of bull trout may be incidentally harmed and harassed as a result of the proposed action, the amount of take is difficult to determine because the presence and number of bull trout is difficult to ascertain within the action area. Detecting an impaired or dead individual is highly unlikely in this area. For instance, an injured juvenile or adult fish would be extremely difficult to find in order to quantify incidental take. Therefore, even though incidental take is expected to occur, sufficient data are not available to enable the Service to determine an exact number of individuals that may be taken under the proposed action. However, the Service is quantifying incidental take in the form of a conservative estimate based on similar past actions.

The Service anticipates that bull trout may be incidentally taken as a result of the dredging operation and pile installation during project implementation. There is also potential for limited incidental take of bull trout from the implementation of the other project-related construction activities. This incidental take may result from short-term increases in hydro-acoustics, sedimentation, turbidity, and/or chemical contamination that may affect essential behavioral patterns and/or physiologic processes. Therefore, the amount of sub-lethal and lethal take for bull trout, regardless of the life stage (*i.e.,* juvenile, sub-adult, or adult) for all project-related activities is limited to ten individuals as sub-lethal take through harm and harassment and zero individuals through any manner of lethal take.

Effect of the take

In this BO, the Service determined that these levels of anticipated take are not likely to result in jeopardy to bull trout because very few bull trout are likely to occur in the action area during the ODFW preferred in-water work period between January 1 and February 28. Any take of bull trout will affect the local population and will not have species-wide population or critical habitat effects.

Reasonable and Prudent Measures

Regulations (50 CFR 402.02) implementing section 7 of the ESA define reasonable and prudent alternatives as alternative actions, identified during formal consultation, that: (1) can be implemented in a manner consistent with the intended purpose of the action, (2) can be implemented consistent with the scope of the action agency's legal authority and jurisdiction, (3) are economically and technologically feasible, and (4) would, the Service believes, avoid the likelihood of jeopardizing the continued existence of federally-listed species or resulting in the destruction or adverse modification of designated or proposed critical habitat. The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of the listed species covered under the BO.

1. Reduce potential project-related adverse impacts to bull trout and bull trout critical habitat.
2. To the extent possible, monitor any detectable adverse effects to bull trout during the proposed action.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, COE must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. Implementation of these terms and conditions will further reduce the risk of impacts to bull trout. These terms and conditions are non-discretionary.

1. Follow the conservation measures as described in the project BA, including the installation of NMFS approved screens on the pump intake pipes.
2. During the dredging operation and pile installation, observe and document any adverse effects to fish that may have occurred from these activities. Contact the Service's OFWO immediately to report your observations, especially if they are related to bull trout. Any verbal communications with this office must be followed-up with a written communication describing the observations in detail within 3 business days of the observation(s).

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize or eliminate the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The COE must immediately provide an explanation of the causes of the taking, and review with the Service the need for possible modification of the project's reasonable and prudent measures.

Monitoring and Reporting Requirements

The following are monitoring and reporting requirements under this BO.

1. Monitor the overall extent of incidental take of bull trout to ensure the authorized amount of take for the species is not exceeded during the implementation of the proposed action.
2. All documented project inspection records, reports, and plans must be made available for review by the Service upon request.
3. Monitor the proposed action to ensure compliance with the conservation measures addressed in the BA and other requirements addressed in the BO.
4. Notify the Service's Division of Law Enforcement in Wilsonville, Oregon at 503-682-6131 when a federally-listed species is found dead, injured, or sick at the time when the proposed action, covered under the BO, is being implemented. Instructions for proper handling and disposition of the species will be issued by the Division of Law Enforcement. Care must be taken in handling: (A) sick or injured individuals to ensure effective treatment and care and (B) a dead specimen to preserve biological material in the best possible state. The OFWO has the responsibility to ensure that information relative to the date, time, location, and possible cause of injury or death of each individual is recorded and provided to the Division of Law Enforcement.

5. A final project report must be submitted 60 days after completion of the proposed action documenting any project-related affects to the bull trout and/or bull trout critical habitat. Send the report to the address below with the following reference number.

State Supervisor
Oregon Fish and Wildlife Office
2600 SE 98th Avenue, Suite 100
Portland, Oregon 97266
Reference Number: 8330.F0003(13)

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 endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or eliminate adverse effects of a project on federally-listed species or critical habitat, to help implement recovery plans, or to develop information. The Service does not have any conservation recommendations for the proposed action.

Reinitiation of Consultation

This concludes formal consultation for bull trout and bull trout critical habitat for the proposed action described in the BA. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect federally-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 designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

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IDFG (Idaho Department of Fish and Game). 1995. List of streams compiled by IDFG where bull trout have been extirpated, fax from Bill Horton, IDFG.

DEPARTMENT OF THE ARMY
Corps of Engineers, Portland District
Regulatory Branch

Inadvertent Discovery Plan (IDP)

Background

Traditionally, tribes have managed the lands in Oregon for thousands of years. Although these lands are now broken up into segments of various ownerships and managing agencies, Native Americans still retain a strong connection to their ancestral lands. For Oregon tribes, archaeological/burial sites are not simply artifacts of the tribe's cultural past, but are considered sacred and represent a continuing connection with their ancestors. Native American ancestral remains, funerary objects, sacred objects and objects of cultural patrimony associated with Oregon Tribes are protected under state and federal law. These laws recognize and codify the tribes' rights in the decision-making process regarding ancestral remains and associated objects. Therefore, both the discovered ancestral remains and/or archaeological objects should be treated in a sensitive and respectful manner by all parties involved.

It is the policy of the Corps Regulatory program to work effectively with Native American Tribes, landowners, resource agencies, historic preservation organizations, stakeholders, applicants and the public to comply with the National Historic Preservation Act and other applicable laws and regulations, Executive Orders, Presidential Memoranda, and policy guidance documents, and to efficiently process permit applications so that development projects can proceed for the good of the Nation's economic health and national security. Respectful and meaningful coordination and consultations between the Corps, Native American Tribes, and the State Historic Preservation Office are conducted as we strive to balance economic needs with historic preservation concerns.

This IDP ensures all parties involved, during inadvertent discovery of cultural materials, are contacted and fulfill their obligation under state and federal laws, including but not limited to:

National Historic Preservation Act (NHPA) – **[16 USC 470] [36 CFR 60]**
Native American Graves Protection and Repatriation Act – **[25 USC 3001] [43 CFR 10]**
Indian Graves and Protection Objects – **ORS 97.740-S 97.760**
Archaeological Objects and Sites – **ORS 358.905 – 358.955**
Procedures for the Protection of Historic Properties – **[33 CFR 325 – Appendix C]**
Consultation and Coordination with Indian Tribal Governments – **[Executive Order – 13175]**

Suspend Work

Cultural Resources and Human Burials: In the event evidence of human burials, human remains, cultural items, suspected cultural items, or historic properties, as identified by the National Historic Preservation Act, are discovered and/or may be affected during the course of the work authorized, the Permittee shall **Immediately Cease All Ground Disturbing Activities**.

Failure to stop work immediately and until such time as the Corps has coordinated with all appropriate agencies and complied with the provisions of 33 CFR 325, Appendix C, the National Historic Preservation Act and other pertinent regulations, could result in violation of state and federal laws. Violators are subject to civil and criminal penalties.

Notification Process for Permittee and/or Archaeological Monitor

The person(s) making the discovery shall immediately notify the permittee(s), the Corps of Engineers, and other appropriate agencies as necessary.

- Notification to the Portland District Regulatory Branch shall be made by fax (503-808-4375) as soon as possible following discovery but in no case later than 24 hours. The fax shall clearly specify the purpose is to report a cultural resource discovery, provide the Permittee's name, Corps Permit No., and the archaeological monitor's contact information for follow-up purposes.
- Follow up the fax notification with an email and phone call to the Corps of Engineers Project Manager identified in the permit letter.

Notification Process for Corps Project Manager

The Project Manager or person(s) designated to manage the inadvertent discovery shall immediately notify the following agencies:

- Oregon State Historic Preservation Office, Dennis Griffin, office phone (503) 986-0674.
- Washington Department of Archaeology and Historic Preservation, Greg Griffith, office phone (360) 586-3073.
- Oregon State Police [**if human remains are found**], Sgt. Chris Allori, office phone (503) 731-3020, cell (503) 708-6461.
- Commission on Indian Services (CIS) [provide the list of appropriate Native American Tribes], Karen Quigley, Director, office phone (503) 986-1067.

Tribes:

- Confederated Tribes of the Grand Ronde Community of Oregon, Michael Karnosh (503) 879-2383 cell (971) 237-7200, Briece Edwards – (503) 879-2084 cell (503) 437-5126
- Confederated Tribes of the Warm Springs Reservation of Oregon, Sally Bird (541) 553-3555.
- Confederated Tribes of the Siletz Reservation, Oregon, Robert Kentta (541) 351-0148.
- Confederated Tribes of the Umatilla Reservation, Oregon, Carey Miller (541) 276-3629; Teara Farrow (541) 276-3629; Eric Quaempts (541) 276-3447.
- Cow Creek Band of Umpqua Tribe of Indians, Jessie Plueard (541) 677-5575 ext. 5577.
- Coquille Tribe of Oregon, Nicole Norris (541) 756-0904.
- Klamath Tribes, Oregon, Lillian Watah (541) 783-2219 ext. 159; Perry Chocktoot (541) 783-2210 ext. 178.
- Confederated Tribes of Coos Lower Umpqua and Siuslaw Indians of Oregon, Agness Castronuevo (541) 888-7513.
- Fort Bidwell Indians Community of the Fort Bidwell Reservation of California, John Vass (530) 279-6310.
- Smith River Rancheria, California, Suntayea Steinruck (707) 487-9255 ext. 3180.
- Burns Paiute Tribe of the Burns Paiute Indian Colony of Oregon, Theresa Peck (541) 573-1375.
- Nez Perce Tribe of Idaho, Vera Sonneck (208) 843-7313.
- Yakama Indian Nation, Thalia Sachtleben, (509) 865-5121 ext. 6074.
- Cowlitz Indian Tribe, Washington, Dave Burlingame, (360) 577-6962.

The Corps will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Registry of Historic

Places. In addition, the Corps will coordinate a Site Avoidance Plan (SAP) and/or a Scope of Work (SOW) with the SHPO/DAHP, the tribe(s) and the permittee to avoid or excavate the archaeological/burial site. In the event the Corps decides to delegate their cultural resource protection responsibilities to another federal or state agency, the Corps shall contact the interested parties and provide those parties with the appropriate new contact person(s).

Plan of Action (POA)

In the event human burials, human remains, cultural items, suspected cultural items, or historic properties, as identified by the National Historic Preservation Act, are discovered and/or may be affected during the course of the work authorized, the archaeological monitor, and/or designee, has the authority to temporarily stop all ground disturbance activities to further inspect the material(s). If an isolated artifact (defined as fewer then 10 artifacts by the Oregon SHPO) is identified, the monitor shall determine whether sufficient quantities and/or evidence of artifacts warrant presence to define a site. If upon closer examination the materials discovered are not consistent with human burials, human remains, cultural items, suspected cultural items, or historic properties, as identified by the National Historic Preservation Act, the monitor will allow work to proceed but with caution and at a slower rate until the monitor is confident no sites are represented.

Upon positive identification of human burials, human remains, cultural items, suspected cultural items, or historic properties, as identified by the National Historic Preservation Act, the monitor will maintain the cease work order, make efforts to secure the discovery location, and immediately notify the permittee and/or designee of the positive discovery as defined in the notification process above.

Human Remains POA

If human burials and/or human remains are discovered, the monitor will treat the remains with sensitivity and respect, ensure all unauthorized personnel have vacated the site location in a safe manner, make reasonable efforts to secure the location, and stabilize the remains if necessary, e.g. they are endangered of falling out a trench wall. Every reasonable effort will be made by the monitor(s) to ensure the remains are not physically handled or examined by unauthorized personnel until the proper notifications have been made. Reference is made to the Tribal Position Paper on Human Remains found on SHPO's website at: http://www.oregon.gov/OPRD/HCD/ARCH/docs/Tribal_position_paper_on_Human_Remains.pdf.

Treatment Plan (TP)

A treatment plan (TP) will be developed between the Corps, SHPO/DAHP, Tribe(s) and the Permittee during consultation to ensure the proper handling and curation of human remains and/or cultural items is clearly outlined and agreed upon. The TP will define the items found; develop a strategy for handling/moving human remains and/or cultural items; develop a strategy for determining whether additional human remains and/or cultural items are endangered; determine if additional testing is necessary to identify site boundaries; and, determine the disposition of the human remains and/or cultural items. The TP will be agreed upon by all parties involved before any future ground disturbance activities resume.

Construction related activities and/or ground disturbance activities shall not resume until authorization from the Corps has been given.

This plan was developed to ensure the safeguarding of our Nation's heritage through inadvertent discovery, and to ensure the Corps' Tribal-Trust responsibilities are met with Diligence, Responsiveness, Reliability, Accuracy, and Respect to our fellow government agencies.

COMPLIANCE CERTIFICATION

U.S. Army Corps of Engineers, Portland District
CENWP-OD-GP
P.O. Box 2946
Portland, Oregon 97208-2946

1. Permittee Name: Stahl, H.B. Farms and Hilaire Brothers Hermiston Farm

2. County: Umatilla

2. Corps Permit No: NWP-2012-329

3. Corps Contact: Kristen Hafer

4. Type of Activity: **Nationwide Permit (NWP) No. 3 (Maintenance Activities)**

Please sign and return form to the address above:

I hereby certify that the work authorized the above referenced permit has been completed in accordance with the terms and conditions of said permit and that required mitigation is completed in accordance with the permit conditions, except as described below.

Signature of Permittee **Date**

……

Professional Archaeologist Signature:

I hereby certify that the work authorized by the above referenced permit has been monitored for cultural resources and/or human remains during all ground disturbance activities in accordance with the terms and conditions of said permit. In the event cultural resources and/or human remains were discovered, all appropriate Federal, State, and local authorities have been notified.

Signature of Archaeologist **Date**

Organization/Affiliation

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

A. REPORT COMPLETION DATE: SEPTEMBER 20, 2012

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD: John Stahl, Stahl Hutterian Bretheren, 1485 N. Hoffman Road, Ritzville, WA 99169

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: PORTLAND DISTRICT, STAHL H.B. FARMS, NWP-2012-329

D. PROJECT LOCATION(S), BACKGROUND INFORMATION, AND WATERS:

State: Oregon
City: Hermiston
County: Umatilla
Name of nearest waterbody: Columbia River

Identify amount of waters in the review area: 0.88 acre

Name of any water bodies on the site that have been identified as Section 10 waters: Columbia River
Tidal: None
Non-Tidal: Columbia River

Waters of the U.S.

Waterbody	Latitude (dd.ddd ºN)	Longitude (dd.ddd ºW)	Cowardin Class	Area (Acres)	Length (Feet)	Width (Feet)
Columbia River	45.9295	-119.0991	Riverine	.88	240	160

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date: September 20, 2012
☐ Field Determination. Date(s):

F. SUPPORTING DATA:

Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Received on September 13, 2012.
- ☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps: .
- ☐ Corps navigable waters' study: .
- ☒ U.S. Geological Survey Hydrologic Atlas: 17070101
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite quad name: OR-JUNIPER
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
- ☐ National wetlands inventory map(s). Cite name:
- ☐ State/Local wetland inventory map(s): .
- ☐ FEMA/FIRM maps:
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☐ Photographs: ☐ Aerial (Name & Date):
  or ☐ Other (Name & Date): .
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Other information (please specify): .

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

_____	_____
Signature and date of Regulatory Project Manager (REQUIRED)	Signature and date of person requesting preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

G. EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.