

DEPARTMENT OF THE ARMY PERMIT

**REGIONAL GENERAL PERMIT
FOR**

**U.S. Forest Service and Bureau of Land Management Aquatic Habitat Restoration
Within the State of Oregon (RGP-4)**

PERMIT NO.: NWP-2007-00999

EFFECTIVE DATE: May 29, 2009

EXPIRATION DATE: December 31, 2012

ISSUING OFFICE: U.S. Army Corps of Engineers, Portland District, Regulatory Branch
(Corps)

This regional general permit (RGP) authorizes the U.S. Forest Service (USFS) and Bureau of Land Management (BLM) to place fill material and certain structures in waters of the United States within the State of Oregon (subject to the terms and conditions contained herein) for the purpose of aquatic habitat restoration. This general permit is issued upon the recommendation of the Chief of Engineers as provided by 33 CFR 325.2(e)(2), pursuant to Section 404 of the Clean Water Act (P.L. 95-217) and Section 10 of the River and Harbor Act of 1899.

RGP-4 includes activities that may be considered exempt from regulation under Section 404 of the Clean Water Act or otherwise not within the jurisdiction of the Corps. This RGP does not identify and its terms and conditions do not apply to such activities. The intent of this RGP is to provide an approved upper limit on what can be done on the ground without the need for individual review. USFS or BLM should contact the Corps if there are questions about whether a specific activity is exempt from regulation or is outside of Corps jurisdiction. USFS/BLM should also contact the Corps if questions arise regarding compliance with any of the terms and conditions of this RGP.

PROJECT LOCATION

Projects will occur on USFS or BLM administered lands within the state of Oregon. Projects may also occur on non-federal lands when such projects directly assist the USFS and/or BLM in achieving their aquatic restoration goals and are funded (either directly or in-kind) in part by the USFS and BLM. The USFS and BLM are permitted to fund such projects under Wyden Amendment authority (16 U.S.C. 1011(a), as amended by Section 136 of PL 105-277).

ACTIVITIES AUTHORIZED BY RGP-4

RGP-4 authorizes the USFS and BLM to implement projects under 13 aquatic restoration activity categories that will be conducted below the ordinary high water mark of streams or other water bodies and in wetlands. These restoration activities are designed to maintain, enhance, and/or

restore watershed functions to benefit fish species, other aquatic organisms, water quality, riparian areas, floodplains, and wetlands. The proposed activities are commonly implemented on USFS and BLM administered lands, predictable as to their effects, and consistent with broad scale aquatic conservation strategies and the best available science. The 13 categories are as follows:

1. Large Wood, Boulder, and Gravel Placement
2. Reconnection of Existing Side Channels and Alcoves
3. Headcut Stabilization and Associated Fish Passage
4. Streambank Stabilization
5. Fish Passage Culvert and Bridge Projects
6. Irrigation Screen Installation and Replacement & Weir Removal
7. Floodplain Overburden Removal
8. Reduction of Recreation Impacts
9. Riparian Exclusion Fencing that include Stream Crossings and Water Gaps
10. Riparian Planting
11. Road Treatments
12. Removal of Legacy Structures
13. Riparian Juniper Treatment

A detail description of the General Conservation Measures and Project Description, Design Criteria, and Removal & Fill Estimates for the 13 categories of activities included within RGP-4 is found in Attachment 1.

Number of Project to be Implemented: The number of projects to be implemented each year by the USFS and BLM in the State of Oregon will not exceed 170. As part of the 170 project limit, no more than 10 projects can be conducted within a 5th field watershed each year, except as described below. The 10 projects can be comprised of a mixture of the 13 project types described above and fully described in Attachment 1. The definition of an individual project is given for each of the 13 activity categories.

On occasion, more than 10 projects can occur in a 5th field watershed. This can occur when the USFS and BLM meet with the NOAA and/or USFWS representatives and reach a conclusion that the allowable effects described in the biological opinions issued for these activities are not exceeded. The USFS and BLM will then notify the Corps requesting email concurrence that projects may proceed under the RGP. The USFS and BLM anticipate the need for more than 10 projects will occur primarily after a flood event, when damaged infrastructure (e.g. culverts and roads) must be addressed or during times of significant funding increases.

Wyden Amendment Projects: For Wyden Amendment projects, a third party may conduct work on non-federal lands under this RGP for individual activities that are directly reviewed, funded (either directly or in-kind), and overseen by the USFS or BLM. In such cases the third party is subject to and must comply with all terms and conditions of this RGP. This RGP does not cover activities conducted by a third party as part of a larger project, where the USFS or BLM are a partner, and which would otherwise fit the criteria but are not directly reviewed, funded, and overseen by the USFS or BLM. Those actions require separate authorization.

PROCEDURES FOR USE OF RGP-4

1. Compliance/Coordination Requirements. The USFS and BLM must ensure each individual project proposed to be implemented under RGP-4 meets the following requirements prior to sending the Pre-Construction Notification:

a. **Endangered Species Act** – Projects must be covered by and comply with the terms and conditions of the following consultations:

- **NOAA BO:** Endangered Species Act – Section 7 Programmatic Consultation Biological Opinion and Magnuson-Stevens Fishery Conservation Act Essential Fish Habitat for Fish Habitat Restoration Activities in Oregon and Washington, CY2007-CY2012. (FS-2008/03505, BLM-2008/03506, BIA-2008/03507). Issued June 27, 2008.
- **USFWS BO:** Biological Opinion and Letter of Concurrence, USDA Forest Service, USDI Bureau of Land Management, and the Coquille Indian Tribe for Programmatic Aquatic Habitat Restoration Activities in Oregon and Washington that Affect ESA-listed Fish, Wildlife, and Plant Species and their Critical Habitat. (8330.F0055[07], TS Number 07-516, Tails Number 13420-2007-F-0055). Issued June 14, 2007.

b. **Cultural Resources/Tribal Coordination.** USFS and BLM project files must contain documentation demonstrating compliance with Section 106 of the National Historic Preservation Act including the items listed below. Documentation must be made available to the Corps upon request.

1. Document the appropriate Tribes (see Attachment 2) have evaluated the proposed project and determined it will not impact such things as cultural resources, treaty fishing access sites, usual and accustomed areas, burial sites, or Traditional Cultural Properties. This process may occur through a locally established protocol between the USFS/BLM and a Tribe.

2. Document coordination with the State Historic Preservation Office (SHPO).

c. **Wild and Scenic Rivers.** For any activity that may occur in a component of the National Wild and Scenic River System, or in an officially designated study river, USFS and BLM project files must contain a written determination from the Federal agency with direct management responsibility for such river that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Such documentation will be made available to the Corps upon request.

2. Notification Requirements.

a. **Pre-Construction Notification.** For each individual project proposed to be implemented under this RGP, the USFS/BLM will notify the Corps 60 days prior to the proposed start date. Pre-Construction Notification may be sent with at least 30-day notice under the following circumstances:

1. **2009 Field Season:** The timing for issuance of RGP 4 may not allow a 60-day notification for projects to be implemented during the 2009 field season. In such cases, Pre-Construction Notification will occur no less than 30 days from the proposed start date.

2. **Unanticipated Funding:** If the USFS or BLM receive unanticipated funding for an aquatic restoration project near or during a field season, Pre-Construction Notification may be sent at least 30 days from the proposed start date. The BLM and USFS must ensure all other compliance steps have been met prior to sending the notification form.

The purpose of the notification is not to request approval from the Corps, but to inform the Corps which projects will be implemented under RGP-4 and to provide an opportunity for the Corps to

submit essential information to the USFS/BLM that may not have been available during project planning. Verification the project complies with the terms and conditions of the RGP is not required from the Corps. Notification will include, at a minimum, the information described below:

- **Permit Number:** Identification that it is a Pre-Construction Notification for the USFS/BLM Regional General Permit (RGP) 4.
- **Contact Information:** FS/BLM Unit; contact name; email address; phone number.
- **Project Location:** 5th and 6th field watershed, stream name, and county. For site projects provide Township/Range/Section, Quarter/Quarter; latitude and longitude (decimal degrees). For linear projects provide Township/Range/Section, Quarter/Quarter; latitude and longitude for start and end points.
- **Timing:** Estimated start and completion dates.
- **Activity Type:** Activity categories that apply.
- **Project Description:** brief narrative of the project and objectives, including volume estimates, and whether or not cabling will be used to anchor structures.
- **Extent:** Estimated number of stream miles or acres to be treated.
- **Species/Critical Habitat Affected:** Non ESA-listed fish species; ESA-listed fish and/or wildlife species, Critical Habitat affected, and anticipated take of ESA-listed fish or birds.
- **Wyden Amendment Projects:** A statement the projects are funded in part by the USFS/BLM and a separate Wyden Amendment Pre-Construction Notification form.

b. **Project Completion Reporting.** The USFS and BLM will submit an annual report to the Corps summarizing the completed aquatic habitat restoration projects for a given year. The report will be submitted by January 31 of the year following project completion and will include a summary of the number of projects constructed within a specific watershed and the activity category(s) that apply.

For each specific project, the post-project completion report will include the following:

- **Contact Information:** FS/BLM Unit; contact name; email address; phone number.
- **Project Location:** 5th and 6th field watershed, stream name, and county. For site projects provide Township/Range/Section, Quarter/Quarter; latitude and longitude (decimal degrees). For linear projects provide Township/Range/Section, Quarter/Quarter; latitude and longitude for start and end points.
- **Timing:** Actual start and completion dates.
- **Project Description:** A brief narrative of the project and objectives, including actual volumes, and whether or not cabling was used to anchor structures.
- **Extent:** Actual number of stream miles or acres treated.
- **Species/Critical Habitat Affected:** Non ESA-listed fish species; ESA-listed fish and/or wildlife species, Critical Habitat affected, and actual take of ESA-listed fish or birds.
- **Implementation Monitoring Results:** Brief narrative which addresses the following type of information: Did the project proceed as planned? Was there a need for an in-water work period extension? Were there any unanticipated problems, and if so how were the problems addressed? Document the extent of the project related turbidity plume.

3. **Annual Review.** In addition to the annual reports, the USFS and BLM will coordinate an annual review meeting with appropriate Corps Regulatory Branch personnel to discuss the annual monitoring report, conduct site visits, and collectively determine if the objectives of RGP-4 are being met. The Corps will invite other federal and state agencies and representatives of Native American Tribes to participate in this review process.

GENERAL CONDITIONS:

1. MAINTENANCE. The USFS/BLM must maintain individual projects authorized by this RGP in good condition and in conformance with the terms and conditions of this RGP. USFS/BLM is not relieved of this requirement if they abandon the individual projects, although USFS/BLM may make a good faith transfer to a third party in compliance with Condition 2 below. Should USFS/BLM wish to cease to maintain individual projects or should USFS/BLM desire to abandon them without a good faith transfer, USFS/BLM must obtain a modification of the individual authorization from the Corps, which may require restoration of the area.

2. PROPERTY TRANSFER. If USFS/BLM sells properties associated with this RGP, USFS/BLM must transfer the individual authorization(s) to the new owner(s) and forward evidence (i.e. written documentation of new owner accepting transferred authorization) to the Corps to validate the transfer of the authorization(s).

3. 401 WATER QUALITY CERTIFICATION. USFS/BLM must comply with the conditions specified in the 401 Water Quality Certification issued for the 2007 Nationwide Permits on July 18, 2007, by the Oregon Department of Environmental Quality. (Attachment 3)

4. COASTAL ZONE CONSISTENCY. USFS/BLM must comply with the conditions of the concurrence letter (dated June 9, 2009) issued by the Oregon Department of Land Conservation and Development to ensure RGP-4 is consistent with the Oregon Coastal Management Program. (Attachment 4)

5. GENERAL CONSERVATION MEASURES, DESIGN CRITERIA. USFS/BLM shall ensure individual projects implemented under this RGP meet the requirements of the General Conservation Measures and Project Descriptions, Design Criteria, and Removal & Fill Estimates specified in Attachment 1.

6. WYDEN AMENDMENT PROJECTS. USFS/BLM shall ensure projects covered under the authority of the Wyden Amendment undergo the same process and compliance as projects occurring on USFS/BLM lands.

7. ENDANGERED SPECIES ACT (ESA) COMPLIANCE. The USFS and BLM shall comply with the terms and conditions of the biological opinions listed below:

- NOAA BO: Endangered Species Act – Section 7 Programmatic Consultation Biological Opinion and Magnuson-Stevens Fishery Conservation Act Essential Fish Habitat for Fish Habitat Restoration Activities in Oregon and Washington, CY2007-CY2012. (FS-2008/03505, BLM-2008/03506, BIA-2008/03507). Issued June 27, 2008.
- USFWS BO: Biological Opinion and Letter of Concurrence, USDA Forest Service, USDI Bureau of Land Management, and the Coquille Indian Tribe for Programmatic Aquatic Habitat Restoration Activities in Oregon and Washington that Affect ESA-listed Fish, Wildlife, and Plant Species and their Critical Habitat. (8330.F0055[07], TS Number 07-516, Tails Number 13420-2007-F-0055). Issued June 14, 2007.

8. CULTURAL RESOURCES AND HISTORIC PROPERTIES.

a. The USFS and BLM are the lead Federal agencies for complying with federal cultural resources and historic preservation laws and regulations, including the National Historic Preservation Act (NHPA). USFS/BLM will individually review projects to determine if activities may be located on property registered or eligible for registration in the latest published version of the National Register of Historic Places (NRHP). No individual project shall proceed under the

version of the National Register of Historic Places (NRHP). No individual project shall proceed under the RGP until requirements under federal cultural resources and historic preservation laws and regulations are met.

9. 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.

10. NAVIGATION.

- a. No activity may cause more than a minimal adverse affect on navigation.
- b. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure of 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.

11. COMPLIANCE INSPECTIONS. Compliance inspections may be conducted to ensure that work performed under this general permit is in compliance with its terms and conditions. The District Engineer or his authorized representative will request permission from the property owner for access to the work site. A request for access will be specific as to the date and time of access, and opportunity will be provided for the property owner or his representative to be onsite during the inspection.

12. ACCURACY OF INFORMATION. If an activity is authorized by this general permit based on false, incomplete or inaccurate information provided by the applicant, the authorization shall not be valid and the Government may institute appropriate legal proceedings.

LIMITS OF THIS AUTHORIZATION

- a. This general permit does not obviate the need to obtain other Federal, state or local authorizations required by law.
- b. This general permit does not grant any property rights or exclusive privileges.
- c. This general permit does not authorize any injury to the property or rights of others.
- d. This general permit does not authorize interference with any existing or proposed Federal project.

LIMITS OF FEDERAL LIABILITY

In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
- d. Design or construction deficiencies associated with the permitted work.
- e. Damage claims associated with any future modification, suspension, or revocation of this permit.

REEVALUATION OF PERMIT DECISION

This general permit will be reviewed within one year of its effective date to determine whether the projects authorized by this general permit result in no more than minimal effects, both individually and cumulatively, and to ensure that the terms and conditions of this permit are being observed. The District Engineer will invite other interested federal and state agencies and representatives of Native American Tribes to participate in this review. If this review concludes that changes in permit terms or conditions are warranted, modification of the permit will be proposed as provided in 33 CFR 325.7, including public notice and opportunity for comment.

The District Engineer may reevaluate this general permit at any time, and, if appropriate, suspend, modify, or revoke this permit as provided in 33 CFR 325.7. The District Engineer may also suspend, modify, or revoke authorization under this general permit for any specific geographic area, class of activities, or class of waters within the state of Oregon. Circumstances that could require a reevaluation include, but are not limited to, the following:

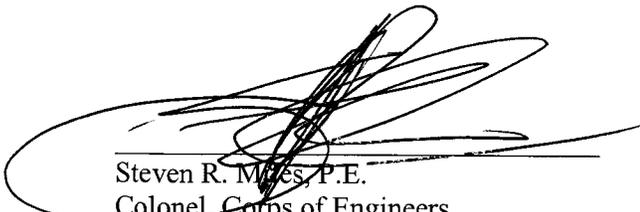
- a. USFS/BLM (or third party for Wyden Amendment projects) fails to comply with the terms and conditions of this RGP.
- b. The information provided by USFS/BLM in support of the RGP application proves to have been false, incomplete, or inaccurate.
- c. Significant new information surfaces which the Corps did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. These procedures also apply to a third party for Wyden Amendment projects.

EXPIRATION, MODIFICATION OR REVOCATION OF THIS PERMIT.

Activities authorized under this general permit that are under construction or under contract for construction in reliance upon this authorization will remain authorized provided the activity is completed within 12 months of the date of this general permit's expiration, modification or revocation, unless the District Engineer has exercised his discretionary authority to modify, suspend, or revoke the authorization of a specific project in accordance with Corps regulations.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:



Steven R. Miles, P.E.
Colonel, Corps of Engineers
District Commander

24 June 2009.
(Date)

**General Conservation Measures and Project Descriptions, Design Criteria, and
Removal & Fill Estimates for the 13 Aquatic Restoration Categories covered by an
Oregon Department of State lands General Permit (GP) and Army Corps of
Engineers Regional General Permit (RGP).**

A. General Conservation Measures (CM), Project Design Criteria (PDC), and Practices: The measures described in this section apply to all 13 Aquatic Restoration Activity Categories listed in part B. of this appendix.

1. General Conservation Measures Applicable to All Activity Categories.

- a) *All projects that fall under the 13 aquatic restoration categories will be guided by Conservation Measures, Project Design Criteria, and Removal & Fill estimates to help restore or enhance stream channel, riparian, wetland, and/or upland functions that would likely occur under natural disturbance regimes.*
- b) Conservation Measures are intended to minimize effects to the aquatic environment, and the following apply, when relevant, to all 13 activity types:
 - i. Technical Skill and Planning Requirements
 - a. Ensure that an experienced professional fisheries biologist, hydrologist or technician is involved in the design of all projects covered by this GP/RGP. The experience should be commensurate with technical requirements of a project. If ESA-listed wildlife/plant species occur in the planning area, as determined by a unit wildlife biologist or botanist, the appropriate specialist will assist with project design.
 - b. Planning and design includes field evaluations and site-specific surveys, which may include reference reach evaluations that describe the appropriate geomorphic context in which to implement the project. Planning and design involves appropriate expertise from professional staff or experienced technicians (e.g., engineer, silviculturist, fire/fuels specialists.)
 - c. The project biologist should insure that PDCs and CMs are incorporated into any implementation contract agreements. If a biologist is not the Contracting Officers Representative (COR), then the biologist must regularly coordinate with the project COR to insure the PDCs and CMs are being followed. *To help ensure that project implementation is adequately performed, a COR should have sufficient technical expertise to make necessary adjustments in the absence of a biologist to meet the biological intent of the project.*
 - d. *Project planning will incorporate guidance from the Oregon Aquatic Habitat Guide and Oregon Road/Stream Crossing Guide.*
 - e. *Wetland Identification and Impact Analysis:*
 - i. *Conduct an inspection for all projects to identify wetland areas. Wetlands are defined and identified through criteria set forth in the*

Corps 1987 Wetland Delineation Manual and regional supplements.
<http://el.erdc.usace.army.mil/elpubs/pdf/wlman87.pdf>
<http://www.oregonstatelands.us/DSL/WETLAND/docs/fact4.pdf>
(laymen edition)

<http://www.oregonstatelands.us/DSL/WETLAND/wetlandfacts.shtml>

- ii. *Initial wetland inspections will rely on a survey conducted by a botanist (or a person with technical expertise in plant identification) to determine if hydrophytic vegetation is present in the project area as that may indicate presence of a wetland. Hydrophytic vegetation is identified in the **National List of Plant Species that Occur in Wetlands, USFWS 1988 and 1993 update.***
<http://www.fws.gov/nwi/Plants/plants.htm> *Any questionable areas may require additional inspection by a hydrologist and/or soils scientist to determine if the criteria for a wetland are present.*
- iii. *If wetlands exist in the project site, use the following practices in preferential order:*
 - a. *Flag off wetlands or potential wetlands and avoid construction activities or operating machinery.*
 - b. *If wetlands cannot be avoided for access, equipment access through wetlands shall occur only when the wetlands are dry or over removable mats or pads to prevent compaction or rutting. Any compaction, rutting, or other disturbance shall be restored to pre-existing conditions following construction.*
 - c. *Wetland projects that are approved under this GP/RGP include the following:*
 - i. *An aquatic restoration project that converts wetlands to other waters of the state to improve or restore fish habitat lost by past land use activities. This practice applies only to Reconnection of Existing Side Channel and Alcove projects, where disconnected side channels and alcoves contain wetland features that will be converted (upon project completion) to a flowing water regime.*
 - ii. *As part of Large Wood Placement projects, large wood may be placed in wetlands, which are located in floodplains, as long as wetland values and functions are not diminished.*
 - iii. *Removal of anthropogenic fill in floodplain/wetland areas under the following aquatic restoration categories: Floodplain Overburden Removal and Reduction of Recreation Impacts*
 - d. *If project removal or fill actions cannot meet these criteria, contact DSL field staff and coordinate during project planning to determine if the project can proceed under a GP/RGP.*
 - e. *Disposal of excavated material from project sites is not allowed in wetlands. For instance, excavation material from road decommissioning, floodplain overburden removal, and reconnection of existing side channel projects shall not be placed in wetlands.*

- ii. State and Federal Requirements
 - a. Follow the appropriate Oregon Department of Fish and Wildlife (ODFW) guidelines for timing of in-water work. Exceptions to ODFW in-water work windows must be requested and granted in writing (email is appropriate) from the local ODFW fish biologist and NMFS, where relevant. Such guidelines are intended to prevent project implementation in fish spawning habitat when fish spawning is taking place or while eggs and young fish are in or associated with channel substrates.
 - b. *All projects shall meet ODFW fish passage criteria as described in OAR 635-412-0035 (3).*
 - c. Project actions will follow all provisions and requirements (including permits) of the Clean Water Act for maintenance of water quality standards as described by Oregon Department of Environmental Quality.
 - d. All regulatory permits and official project authorizations will be secured prior to project implementation.
- iii. Pollution and Erosion Control Plans – Administrative Units will develop and implement a Pollution and Erosion Control Plan (PECP) for each authorized project, one that includes methods and measures to minimize erosion and sedimentation associated with the project. The following measures will assist in the creation of a PECP.
 - a. Spill Prevention Control and Containment Plan (SPCCP) – The contractor will be required to have a written SPCCP, which describes measures to prevent or reduce impacts from potential spills (fuel, hydraulic fluid, etc). The SPCCP shall contain a description of the hazardous materials that will be used, including inventory, storage, handling procedures; a description of quick response containment supplies that will be available on the site (e.g., a silt fence, straw bales, and an oil-absorbing, floating boom whenever surface water is present.)
 - b. The PECP should be included in construction contracts or force account work plans.
 - c. The PECP must be commensurate with the scale of the project and include the pertinent elements of iv, v, and vi listed below.
- iv. Minimize Site Preparation Impacts
 - a. Establish staging areas (used for construction equipment storage, vehicle storage, fueling, servicing, hazardous material storage, etc) beyond the 100-year floodplain and outside of wetlands in a location and manner that will preclude erosion into or contamination of the stream or floodplain.
 - b. Minimize clearing and grubbing activities when preparing staging, project, and or stockpile areas. Stockpile large wood, trees, vegetation, sand, topsoil and other excavated material that is removed when establishing area(s) for site restoration.
 - c. Materials used for implementation of aquatic restoration categories (e.g., large wood, boulders, fencing material etc.) can be staged within the 100-year floodplain. This excludes equipment.

- d. Prior to construction, flag critical riparian vegetation areas, wetlands, and other sensitive sites to prevent non-permitted ground disturbance in these areas.
 - e. Place sediment barriers, prior to construction, around sites where significant levels of erosion may enter the stream directly or through road ditches. Maintain barriers throughout construction.
 - f. Where appropriate, include hazard tree removal (amount and type) in project design. Fell hazard trees within riparian areas when they pose a safety risk. If possible, fell trees towards the stream. Keep felled trees on-site when needed to meet coarse woody debris objectives.
 - g. A wildlife biologist will determine if a hazard tree is a potential ESA listed bird nest tree. Nesting trees that are hazardous to restoration activities may only be removed outside of active nesting season. No Bald Eagle nest trees will be removed. Hazard trees that are also suitable Northern Spotted Owl and murrelet nest trees may only be removed if there are sufficient alternative suitable Northern Spotted Owl and murrelet nest trees within the same stand that the hazard tree is located.
- v. Minimize Heavy Equipment Impacts
- a. Consider contracting with operators who use non-petroleum lubricants and fluids in their machinery.
 - b. The size and capability of heavy equipment will be commensurate with the project.
 - c. All equipment used for in-stream work shall be cleaned and leaks repaired prior to entering the project area. Remove external oil and grease, along with dirt and mud prior to construction. Thereafter, inspect equipment daily for leaks or accumulations of grease, and fix any identified problems before entering streams or areas that drain directly to streams or wetlands.
 - d. All equipment shall be cleaned of all dirt and weeds before entering the project area to prevent the spread of noxious weeds.
 - e. Equipment used for in-stream or riparian work shall be fueled and serviced in an established staging areas. When not in use, vehicles shall be stored in the staging area.
 - f. Minimize the number and length of stream crossings and access routes through riparian areas, *thereby limiting the disturbance to the riparian habitat*. Crossings and access routes shall be as close to right angles as possible. Stream crossings shall not increase risks of channel re-routing at low and high water conditions and shall avoid potential listed fish spawning areas when possible.
 - g. Existing roadways or travel paths will be used whenever reasonable. Minimize the number of new access paths to minimize impacts to riparian vegetation and functions.
 - h. Project operations must cease under high flow conditions that inundate the project area, except for efforts to avoid or minimize resource damage resulting from the inundation.
 - i. Minimize time in which heavy equipment is in stream channels, riparian areas, and wetlands. When operating heavy equipment in stream channels

it is because project specialists *determined* that such actions are the only reasonable alternative for implementation that would result in less sediment in the stream channel, *minimal alteration to the stream morphology*, or less damage (short- or long-term) to the overall aquatic/riparian ecosystem relative to other alternatives.

- vi. Site Restoration**
 - a.** Upon project completion, remove project related *construction materials*.
 - b.** Initiate rehabilitation of all disturbed areas in a manner that results in similar or better than pre-work conditions through spreading of stockpiled materials (*e.g. cleared vegetation*), seeding, and/or planting with locally native seed mixes or plants. Planting shall be completed no later than the spring planting season of the year following construction
 - c.** Short-term stabilization measures may include the use of non-native sterile seed mix (when native seeds are not available), weed-free certified straw, jute matting, and other similar techniques. Short-term stabilization measures will be maintained until permanent erosion control measures are effective. Stabilization measures will be instigated within three days of construction completion.
 - d.** All riparian plantings shall follow one or both of the following direction documents: Regional FS letter to Units, Use of Native and Nonnative Plants on National Forests and Grasslands, May 2006 (Final Draft), and BLM Instruction Memorandum No. OR-2001-014, Policy on the Use of Native Species Plant Materials.
 - e.** When necessary, loosen compacted areas, such as access roads, stream crossings, staging, and stockpile areas.
- vii. Monitoring**
 - a.** Implementation Monitoring – Conduct implementation monitoring to ensure that conservation measures, project design criteria, removal and fill thresholds, and other GP conditions are being met. Contact a DSL representative if problems arise.
 - b.** Post-Project Monitoring – Monitor the project after the first winter and spring high-flow events to determine if expected impacts have been exceeded. Apply remedial site restoration actions if needed.

B. Description of 13 Aquatic Restoration Categories

1. Large Wood, Boulder, and Gravel Placement

- a) Description** – Land management actions carried out over the last 150 years, such as logging, road building, stream clearing, and splash damming, have greatly reduced the amount of large woody debris and boulders in streams in Oregon and Washington (Murphy 1995, McIntosh et al. 1994). Addition of large wood is a common and effective restoration technique used throughout the Pacific Northwest (Asbridge 2004). Roni and Quinn (2001 a) found that large wood placement can lead to higher densities of juvenile coho salmon during the summer and winter and higher densities of steelhead and cutthroat trout in the winter. These authors also found that the addition of large wood to streams can lead to greater fish growth and less frequent and shorter fish movements (Roni and Quinn 2001 b).

As with large wood, addition of boulders and properly designed rock structures can help restore natural stream processes, improve pool habitat, and provide cover for fish. Roni et al. (2006) found that the placement of boulder weirs in highly disturbed streams of western Oregon led to increased pool area and increased abundance of trout and coho salmon. Addition of gravel in areas where it is lacking, such as below impoundments, will increase spawning substrate available to fish species. Further, Merz and Chan (2005) found that gravel augmentation can result in increased macroinvertebrate densities and biomass, thus leading to more food for fish.

Therefore, the BLM and Forest Service propose to place large wood and/or boulders in stream channels and adjacent floodplains to increase channel function, rearing habitat, pool formation, spawning gravel deposition, channel complexity, hiding cover, low velocity areas, and floodplain function. In areas where natural gravel supplies are low (immediately below reservoirs, for instance), gravel placement may be used to improve spawning habitat. Channel spanning boulder weirs (porous) can be installed in streams with a legacy of splash damming, stream cleaning, or other activities that have resulted in highly uniform, incised, bedrock-dominated channels with few boulders or woody debris. Large wood, boulder, and gravel projects would include the use of log trucks and dump trucks for transport and excavator-type machinery, spidders, cable yarders, draft horses, or helicopters for placement.

- b) Long-term Beneficial Effects** – Almost immediately upon installation, large wood, boulder, and gravel projects will provide increased cover and resting areas. Over the long term, installing these in-stream structures will improve the following: channel and habitat diversity; provide in-stream spawning, rearing and resting habitat; high flow refugia; lead to an increase of interstitial space; promote natural vegetation composition and diversity; reduce embeddedness in spawning gravels, siltation in pools, width/depth ratios; restore historic hydrologic regimes and deflect flows into adjoining floodplain areas, potentially leading to re-connecting off-channel habitat. Further, the ability of habitat and listed fish to recover from short-term disturbance in

a short time frame will be enhanced. The above benefits were described by the USFWS (2007).

c) **Short-term Adverse Effects** – Refer to section (5) *Project Impacts and Alternatives* of this application for a list of short-term adverse effects. The *General Conservation Measures Applicable to All Activity Categories* in part A. 1. of this appendix as well as project-specific design criteria and removal & fill thresholds provided below will be applied to minimize adverse effects.

d) **Design Criteria**

i. Natural Large Wood (LW), Boulder, and Gravel Placement

- a. Place LW and boulders only in those areas where they would naturally occur and in a manner that closely mimic natural accumulations for that particular stream type.
- b. LW includes whole conifer and hardwood trees, logs, and root wads. LW size (diameter and length) should account for bankfull width and stream discharge rates. When available, *key trees with rootwads* should be a minimum of 1.5x bankfull channel width, while logs without rootwads should be a minimum of 2.0 x bankfull width. *When such trees are not available, use a functional equivalent, a tree that would remain relatively stable and placed in a manner that minimizes downstream movement.* Structures may partially or completely span stream channels or be positioned along stream banks.
- c. No conifers should be felled in the riparian area for in-channel LW placement unless conifers are fully stocked (*as determined by an area silviculturist for that ecological zone*) and are consistent with PDCs in vegetation treatment categories. Felled hazard trees can be used for in-channel wood placement.
- d. Key boulders (footings) or LW can be buried into the stream bank or channel but shall not constitute the dominant placement method of boulders and LW. Dimensions of excavation sites to key in structures will be commensurate with size of material, as described in i. b. of this section.
- e. Anchoring LW with cable should be used as a last resort, primarily for the protection of infrastructure and in consideration of downstream landowner concerns. Before using cable attempt to use, when feasible, the following anchoring alternatives in preferential order: 1) use adequate sized wood sufficient for stability *as described in part “b” above*; 2) orient and place adequate sized wood in such a way that wood movement is unlikely; 3) use large boulders as anchor points for the LW; and 4) pin wood to large rock with rebar to increase wood weight.
- f. Gravel augmentation should only occur in areas where the natural supply has been eliminated or significantly reduced through anthropogenic means. Gravel to be placed in streams shall be a properly sized gradation for that stream, clean, and nonangular. When possible use gravel of the same lithology as found in the watershed. *Gravel shall be acquired from a commercial or other permitted source.* After gravel placement, allow the stream to naturally sort and distribute the material.

- ii. Boulder Weirs in Degraded Bedrock Streams – Full channel spanning boulder weirs are to be installed only in highly uniform, incised, bedrock-dominated channels to enhance or provide fish habitat in stream reaches where log placements are not practicable due to channel conditions (not feasible to place logs of sufficient length, bedrock dominated channels, deeply incised channels, artificially constrained reaches, etc.), where damage to infrastructure on public or private lands is of concern, or where private landowners will not allow log placements due to concerns about damage to their streambanks or property.
 - a. *Projects are limited to streams <80' bankfull width and <5% slope.*
 - b. *Boulder weirs shall not fill more than 50% of the bankfull cross-sectional area.*
 - c. Install boulder weirs low in relation to channel dimensions so that they are completely overtopped during channel-forming flow events (approximately a 1.5- year flow event [*bankfull event*]). If larger boulders are needed to withstand bankfull flows, boulder size should be determined through a site-specific analysis – such as a shear stress analysis – and should not promote bank scouring and channel routing around the structure.
 - d. Boulder weirs are to be placed diagonally across the channel or in more traditional “V” or “U” configurations with the apex oriented upstream.
 - e. Boulder weirs are to be constructed to allow upstream and downstream passage of all native fish species and life stages that occur in the stream. This will be accomplished by providing plunges no greater than 6” in height, allowing for juvenile fish passage at all flows. *When streams contain Catostomus and Chasmistes species, the jump height shall be 0”. Refer to ODFW OAR 635-412-0035 (2) and (7).*
 - f. The use of gabions, cable or other means to prevent the movement of individual boulders in a boulder weir is not permitted.
 - g. Rock for boulder weirs shall be durable and of suitable quality to assure permanence in the climate in which it is to be used. Rock sizing depends on the size of the stream, maximum depth of flow, plan form, entrenchment, and ice and debris loading.
 - h. The project designer or an inspector experienced in these structures *shall* be present during installation.
 - i. Full spanning boulder weir placement should be coupled with measures to improve habitat complexity and protection of riparian areas to provide long-term inputs of LWD.
- iii. Excluded projects: an individual structure, such as a log jam, shall not exceed a length of 7 bankfull channel widths up and down a stream (e.g. maximum longitudinal length of a structure along a streambank is 70’ when bankfull width is 10’); full spanning boulder weir structures installed perpendicular to the streamflow; downstream pointed U or V style weirs.

e) Maximum Removal & Fill Estimates

- i.** *Project Extent: For large wood projects, the annual maximum extent of one project is equal to 15 stream miles of helicopter placement or five miles using cable yarding equipment or one stream mile (stream length) of placement with excavator-type equipment. For boulder and gravel placement projects, the maximum extent of one project is equal to one stream mile of placement with excavator and/or dump truck equipment. A site is defined as a single location within the project length.*

If another aquatic restoration activity covered by this GP/RGP is used as a complementary action to increase the biological/ecological uplift within the project area, the combined actions are considered one project, one of the ten projects allowed per 5th field watershed. A complementary action shall follow the associated design criteria and fill and removal limits. Any additional action—beyond the one complementary action—within the project area will be considered a separate project, counting against the 10 projects per 5th field watershed.

ii. Large Wood Placement Projects

- a.** *No more than 400 logs (key and non-key logs) per mile will be placed within the Ordinary High Water (OHW). Additional logs can be placed in the floodplain (above OHW) and associated wetlands as long as wetland functions and values are not impaired. The number of logs placed in a stream shall be commensurate with stream size, type, and local geomorphology and in a manner that does not impede fish passage.*
- b.** *Placement of boulders to stabilize large wood may be used.*
- c.** *Removal and fill associated with streambank excavation sites to anchor log structures into stream banks will be commensurate with structure size. In general, the width of excavation trenches will not exceed 2x the structure or log width, and trench length will not exceed ½ the structure or log length.*

iii. Boulder Placement

- a. Natural/random boulder placement**
- 1) *No more than 1,000 cubic yards of boulders will be placed within the OHW per mile. No more than 100 cubic yards of material will be placed at one site.*
 - 2) *Boulders should be placed in patterns of natural deposition that are found in the area.*
- b. Boulder weirs in bedrock systems**
- 1) *For boulder weirs in bedrock streams, projects are limited to streams <80' bankfull width and <5% slope, and such weirs shall not fill more than 50% of the bankfull cross-sectional area.*
 - 2) *No more than 1,500 cubic yards of boulders will be placed within the OHW per mile, an upper limit that will accommodate severely degraded coastal streams.*
 - 3) *No more than 150 cubic yards of material will be used to construct a single weir.*
 - 4) *Natural boulder placement may be implemented up stream and down stream of a weir.*

- c. *Removal and fill associated with streambank excavation sites to anchor boulder structures into stream banks will be commensurate with structure size. In general, the width of excavation trenches will not exceed 2x the structure or boulder width, and trench length will not exceed 20' on a single side of the stream. Slight amounts of bank armoring (up to 25% of the bankfull width in length up- and downstream of the excavation site) can be used to prevent bank scour.*
- iv. *Gravel Placement: No more than 1,500 cubic yards of material will be placed within the OHW per mile and shall be in association with instream structures. The amount of gravel placed shall be commensurate with stream size and geomorphology and in a manner that does not impede fish passage. Spawning gravel will be comprised of clean, rounded river rock and its size determined by the need of fish species (typically 0.25 - 6 inches). No more than 250 cubic yards of material can be placed at one site.*

2. Reconnection of Existing Side Channels and Alcoves

- a) **Description** – Side channels and alcoves serve as important rearing habitat for listed fish, especially during early and juvenile life-history stages. Functioning side channels have inlet and outlet connections to the main channel and often contain flow only during flood events—bankfull or greater—but can contain stream flow throughout a year. Functioning alcoves are back-water channels that typically contain water during both low and high flows. Many side channels and alcoves have been blocked from main stream channels for flood control and other land management activities or have ceased functioning due to other in-stream sediment imbalances. After side channels were blocked, peak flows were confined to the main stream channel, often resulting in channel incision.

The BLM and Forest Service propose to reconnect and/or restore existing side channels and alcoves *that have been artificially blocked* to increase rearing habitat for juvenile fish and high flow refuge areas for all life stages of fish. This action includes the removal of plugs which block water movement through side channels and alcoves. Further, side channel and alcove improvements can include fill removal within channels and alcoves, LW and/or boulder placement, riparian planting, etc. Boulder placement may be used in the main river to stabilize the channel and to align it with the entrance of a side channel (vertically and horizontally). Construction would involve use of heavy equipment, such as excavators, spiders, backhoes, and dump trucks.

- b) **Long-term Beneficial Effects** – The reconnection of side channels and alcoves increases the amount of this important habitat type, which provides refugia for fish, especially during high flows. This is especially important for coho salmon, which require this type of habitat for over-wintering (NRC 1996). In addition, restored side-channels and alcoves will improve floodwater access to floodplains. Beneficial effects are expected to accrue immediately after project completion.

c) **Short-term Adverse Effects** – Refer to section (5) *Project Impacts and Alternatives* of this application for a list of short-term adverse effects. The *General Conservation Measures Applicable to All Activity Categories* in part A. 1. of this appendix as well as project-specific design criteria and removal & fill thresholds provided below will be applied to minimize adverse effects.

d) **Design Criteria**

- i. Excavated material removed from side-channels or alcoves shall be hauled to an upland site or spread across the adjacent floodplain in a manner that does not restrict floodplain capacity.
- ii. Design and construct side-channels in such a manner as to prevent the capture and relocation of the main channel.
- iii. Design side-channel projects to naturally maintain inlet and outlet connections with the main stream channel (e.g. placement of LW to increase local scour).
- iv. *Design alcove projects as to prevent stranding of fish during low flow periods.*
- v. *If there is water in the project area that contains fish, modify the project to exclude this functional zone to the greatest degree possible. Should fish rescue occur, use fish handling criteria listed under Fish Passage Culvert and Bridge Projects activity category.*
- vi. Excluded Activities – Creation of new side channels; *reconnection of side channels that have been abandoned through natural processes; reconnection of abandoned mainstem-river oxbows; excavation of severely aggraded side channels and alcoves (those completely filled in or where channel or alcove dimensions are undistinguishable).*

e) **Maximum Removal & Fill Estimates**

- i. *Project Extent: One project is equal to one side channel or alcove project. This does not include abandoned river channels.*

If another aquatic restoration activity covered by this GP/RGP is used as a complementary action to increase the biological/ecological uplift within the project area, the combined actions are considered one project, one of the ten projects allowed per 5th field watershed. A complementary action shall follow the associated design criteria and fill and removal limits. Any additional action—beyond the one complementary action—within the project area will be considered a separate project, counting against the 10 projects per 5th field watershed.

- ii. *No more than 400 cubic yards of material will be removed below the existing OHW and from wetlands (within the existing side channel or alcove) from one project. Removal is limited to the inlet, outlet, and other filled portions of a side channel or within an alcove area.*
- iii. *When constructing log or boulder structures in the main channel to restore side channel flow, fill shall not exceed 100 cubic yards for small streams (bankfull <40') and 350 cubic yards for larger streams or mainstem rivers (bankfull >40'). Boulder weir construction will follow project design criteria provided in the Large Wood, Boulder, and Gravel Placement category (part d. ii).*
- iv. *Disposal of excavated material from project sites shall not be placed in wetlands.*

3. Headcut Stabilization and Associated Fish Passage

- a) **Description** – Left uncontrolled, headcuts lead to channel incision, deposition of fine sediments in downstream substrates, and disconnection of a stream from its floodplain (USFWS 2007). Generally, artificial hardening of stream channels is not favored by the BLM, Forest Service, and other restoration planners. However, in the case of headcuts and resultant channel incision, it can take so long (decades to centuries) for stream channels to return to their former elevation, that more aggressive restoration techniques are sometimes necessary. Just as important, this action will prevent further channel incision into healthy stream segments.

The BLM and Forest Service propose to stabilize active or potentially active headcuts with large wood, rock, or weirs to prevent further channel degradation (upstream migration of head-cut) and to promote downstream channel aggradation. In streams currently or historically occupied by fish, fish passage will be provided over the stabilized headcut. Construction would involve use of heavy equipment, such as excavators, graders, backhoes, dump trucks.

- b) **Long-term Beneficial Effects** – Immediate benefits include rapid reduction of headcut activity, spreading the vertical nature of the headcut out over a longer distance, a significant reduction in sediment contributions, and protection of upstream reaches. The long-term beneficial effects from this activity include stabilization of a stream's vertical profile, allowing reaches up- and downstream of the headcut to begin evolving into more functional stream systems, and provision of upstream fish passage over the previously impassible headcut (USFWS 2007).
- c) **Short-term Adverse Effects** – Refer to section (5) *Project Impacts and Alternatives* of this application for a list of short-term adverse effects. The *General Conservation Measures Applicable to All Activity Categories* in part A. 1. of this appendix as well as project-specific design criteria and removal & fill thresholds provided below will be applied to minimize adverse effects.
- d) **Project Design Criteria** – Two design choices are provided below. The design choice will be based on site characteristics and limitations (i.e., channel slope, bed material type), but may also be based on material availability, economics, land use, design competence or familiarity, and/or regulatory restrictions (i.e., jump heights for fish).
- i. **Rock and Organic Material Headcut Armoring** – This method is often used on severe headcuts in meadow areas east of the Cascade Mountains to stop further channel incision. Stream types are typically Rosgen “C” and “E” channel types *with silt, sand, and gravel substrates*.
 - a. *This design option is limited to streams with natural bankfull widths $\leq 20'$ with headcuts $\leq 10'$ in height.*
 - b. Armor head-cut with sufficiently sized and amounts of material to prevent continued up-stream movement of the headcut. Rock material should be sized

as to not be mobile during design floods. Materials can include both rock and organic materials (e.g. juniper, woody debris) which are native to the area and sized appropriately for the system.

- c. Focus stabilization efforts in the plunge pool, head cut, *as well as no more than a 20' distance upstream of the headcut.*
- d. Minimize lateral migration of channel around head cut (“flanking”) by placing rocks and organic material at a lower elevation in the center of the channel cross section to direct flows to the middle of channel.
- e. In streams with current or historic fish presence, provide fish passage over stabilized head-cut through a series of log or rock weir structures as described in section “g” below.
- f. Short-term headcut stabilization (including emergency stabilization projects) may occur without associated fish passage measures. However, fish passage must be incorporated into the final head cut stabilization action and be completed during the first subsequent in-water work period. *(Contact ODFW by phone or email regarding in-water work window extensions)*
- g. In streams with current or historic fish presence, it is recommended to construct a series of downstream log or rock weirs to expedite channel aggradation and promote fish passage in low gradient *streams (generally in streams with a natural gradient less than 2%)*.
 - i. Rock and log weirs (check dams/aggradation structures) are very low channel spanning structures that promote aggradation and provide for fish passage in low gradient streams. Such structures are used in conjunction with armoring of headcuts.
 - ii. Construct *check dams* in a ‘V’ shape, oriented with the apex upstream, and lower in the center to direct flows to the middle of channel.
 - iii. *Design headcut and check dams to withstand 100 year floods.*
 - iv. *For check dam construction, the recommended rock design mix should allow—through time—a natural progression of sediment deposition.*
 - v. Key *check dams* into the stream bed to minimize structure undermining due to scour, preferably at least 2.5x their exposure height. The *check dam* should also be keyed greater than 8 feet into both banks, if feasible, and no greater than 20 feet.
 - vi. If several *check dams* will be used in series, space the *check dams* at the appropriate distances to promote fish passage of all life stages of native fish. Incorporate State fish passage criteria (jump height, pool depth, etc.) in the design of weir structures. This will be accomplished by providing plunges no greater than 6” in height, allowing for juvenile fish passage at all flows. *When streams contain Catostomus and Chasmistes species, the jump height shall be 0”.* Refer to ODFW OAR 635-412-0035 (2) and (7). Recommended *check dam* spacing should be no closer than the net drop divided by the channel slope (for example, a one-foot high weir in a stream with a two-percent gradient will have a minimum spacing of 50-feet [1/0.02]).
- ii. Large Roughness Elements (Wood and Boulder Placements) – This treatment type is preferred for those areas where LW and boulders provide natural grade

control. This technique is applicable to a wide range of stream types, from low gradient meandering streams (less than 1%) to high gradient cascade channels (up to 12%). The goal of using large roughness elements is not to completely halt the incision process, but rather to slow it down and spread the elevation change over a greater length of channel. Because log jams are porous structures, not all of the sediment will be held in place; sediment inputs, however, will be spread out over time and space.

- a. Rock and wood structures will mimic natural colluvial features, such as debris flow or landslide deposits, to provide channel stabilization.
 - b. Rock and wood will be sized so that it is not mobile during the design flood. For guidance, refer to an engineering technical note regarding buoyancy is available through NRCS (<http://www.or.nrcs.usda.gov/technical/engineering/eng-notes.html>).
 - c. To promote or maintain fish passage, ensure that structures contain enough spaces to allow for up and downstream movement of fish.
- iv. Excluded Activities – Any structures that include the use of gabion baskets, sheet pile, concrete, articulated concrete block, and/or cable anchors; straight weirs, which disperse flows and can cause channel widening and thus structure “flanking” (erosion around the ends of the structure).

e) Maximum Removal & Fill Estimates

i. For Rock and Organic Material Headcut Armoring projects

- a. *Project Extent: One project is equal to the stabilization of one headcut project and associated fish passage structures. Project length, from the headcut to the last downstream weir, shall not exceed 400 feet.*

If another aquatic restoration activity covered by this GP/RGP is used as a complementary action to increase the biological/ecological uplift within the project area, the combined actions are considered one project, one of the ten projects allowed per 5th field watershed. A complementary action shall follow the associated design criteria and fill and removal limits. Any additional action—beyond the one complementary action—within the project area will be considered a separate project, counting against the 10 projects per 5th field watershed.

- b. *No more than 1,000 cubic yards of material will be placed within a stream channel with no more than 150 cubic yards to be used for an individual structure, such as a check dam or headcut armor.*
 - c. *Fill to armor a headcut may extend into wetland areas immediately above the headcut.*
 - d. *Removal and fill associated with streambank excavation sites to key-in check dams will be commensurate with structure size. The width of a single excavation trench will not exceed 2x the structure width, and trench length will not exceed 10 feet on either side of a stream.*
- ii. For project under the Large Roughness Elements (Wood and Boulder Placements) category, follow fill guidelines under the Large Wood, Boulder, and Gravel Placement category*

4. Streambank Stabilization

- a) **Description** – Streambanks covered with well-rooted woody vegetation can withstand critical shear stress three times more than that of weakly vegetated streambanks or streambanks covered with shallow rooted grass (Millar and Quick 1998). Highly vegetated streambanks can result in undercut banks, which provide quality habitat for fish of all life stages. Many streambanks on federal lands have been degraded due to past livestock grazing, road construction, and other activities.

The BLM and Forest Service propose to stabilize eroding streambanks using bioengineering methods. Projects will typically occur in meadow stream reaches (e.g. Rosgen “C” and “E” stream types) and to a lesser degree in forested reaches (e.g. Rosgen “B” stream types). Further, projects will not significantly restrict a channel migration zone (natural sinuosity potential) and a channels ability to form and maintain habitat.

- b) **Long-term beneficial effects** – The stabilization of eroding stream banks will result in reductions of fine sediment inputs occurring from chronic bank erosion, reestablishment of riparian vegetation, and expanded floodplain areas (USFWS 2007). As riparian plantings mature, width-to-depth ratios are expected to decrease. Eliminating a sediment source will help increase the diversity and densities of aquatic macroinvertebrates used as a food source by fish species. It will also maintain or increase the amount of interstitial cover available to juveniles and juvenile emergence success. Suffocation of fry and entombment caused by excessive siltation of spawning gravels will also be reduced or eliminated. Light penetration, which, in turn, affects the feeding abilities of fish species and juvenile growth rates, will improve. By limiting bank restoration to bioengineering methods such as placement of large woody debris and riparian plantings, overhead cover for fish will be increased and streambank stability will improve (NOAA 2008).
- c) **Short-term Adverse Effects** – Refer to section (5) *Project Impacts and Alternatives* of this application for a list of short-term adverse effects. The *General Conservation Measures Applicable to All Activity Categories* in part A. 1. of this appendix as well as project-specific design criteria and removal & fill thresholds provided below will be applied to minimize adverse effects.
- d) **Design Criteria**
- i. Work will focus on eroding stream banks, primarily the outside edge of meander bends.
 - ii. Limit bank restoration projects to those sites where existing channel conditions are at or near reference channel conditions—radius of curvature, etc. Use bank stabilizing materials that would naturally occur at that site (such as LW, woody and herbaceous plantings, native sedge/rush mats, and native rock. Rock shall be acquired from an upland, permitted, or commercial source and be of the same size and shape of those found within the project site. If the rock is from an upland source, such rock shall originate from within the watershed. Rock placement

shall not extend above the bankfull elevation, unless such material occurs naturally above that elevation.

- iii. Banks will be reshaped and sloped where the objective is to reduce bank slope angle to provide more favorable planting surfaces. Such work will not change the location of the bank toe.
- iv. Jute matting or other biodegradable material can be used with plantings to help prevent erosion of affected banks.
- v. Sedge or rush mats will be taken from nearby floodplains (above the bankfull elevation), in areas where such vegetation is abundant. Refer to part e. v. below for mat removal process.
- vi. Excluded Activities: Use of dikes, groins, buried groins, drop structures, riprap, rock toes *when such material does not naturally occur in the stream*, and similar structures to stabilize streambanks. *Weirs within three bankfull channel widths from either end of the stream bank stabilization site. Projects that use instream rock to stabilize banks.*

e) Maximum Removal & Fill Estimates

- i. *Project Extent: One project is equal to stabilization of eroding banks along less than 0.5 miles of stream.*

If another aquatic restoration activity covered by this GP/RGP is used as a complementary action to increase the biological/ecological uplift within the project area, the combined actions are considered one project, one of the ten projects allowed per 5th field watershed. A complementary action shall follow the associated design criteria and fill and removal limits. Any additional action—beyond the one complementary action—within the project area will be considered a separate project, counting against the 10 projects per 5th field watershed.

- ii. *No more than 1,500 feet of stream bank will be excavated and sloped per 0.5 miles within a single year.*
- iii. *Individual stream banks to be excavated and sloped shall not exceed 500 feet in length and 8 feet in height.*
- iv. *Banks will be excavated in the following manner: at bankfull elevation excavate horizontally (terrace/bench) followed by sloping (up to 3:1 [h/v] slope); sloping from channel edge up to a 3:1 slope. Excavation can begin from the slope toe (under OHW) to better connect channel and newly constructed streambank.*
- v. *When using sedge or rush mats, no more than 500 mats (3' x 6' x 1') shall be used to stabilize banks. Mat placement can extend below the OHW but most will occur above the OHW. To minimize potential effects to wetlands, harvest of mats shall be distributed across the project area and not from a single location. At harvest sites, no more than 25% of the vegetation shall be removed and mats will be taken in such a manner as to leave undisturbed vegetation of equal size or greater between each excavated mat. Plant sedge or rush plugs and/or seeds throughout excavated area to promote regrowth. Monitor for project related spread of noxious plants and apply eradication measures upon detection of such plants.*

5. Fish Passage Culvert and Bridge Projects

- a) **Description** – Fish passage impediments at road-stream crossings are common throughout federal lands in Oregon, resulting from road construction to access natural resources and provide public access. Passage barriers are typically culverts that are undersized and/or perched, which result in increased stream velocities and jumping heights that prohibit fish access through the culvert and into upstream habitat. Numerous restoration planning efforts have highlighted the need to restore fish passage, particularly when the blockage occurs low in a watershed.

The BLM and Forest Service propose to remove or replace existing road-stream crossing structures—culverts and bridges—that restrict fish passage with stream simulation structures to restore up and downstream passage for all life stages of native fish. This category includes those projects with minor culvert and stream realignment to restore a natural stream course as well as those where temporary bypasses are required. Construction would involve use of heavy equipment, such as excavators, cranes, backhoes, front-end loaders, dump trucks, bull dozers, and on occasion pile-drivers and helicopters.

- b) **Long-term Beneficial Effects** – Long-term beneficial effects of culvert and bridge replacement or removal projects include restoration of fish passage and natural stream channel processes. Removing fish-passage blockages will restore spatial and temporal connectivity of streams within and between watersheds where fish movement is currently obstructed. This, in turn, will permit fish access to areas critical for fulfilling their life history requirements, especially foraging, spawning, and rearing (NOAA 2008).
- c) **Short-term Adverse Effects** – Refer to section (5) *Project Impacts and Alternatives* of this application for a list of short-term adverse effects. The *General Conservation Measures Applicable to All Activity Categories* in part A. 1. of this appendix as well as project-specific design criteria and removal & fill thresholds provided below will be applied to minimize adverse effects.
- d) **Design Criteria**
- i. Fish passage projects will be designed by an experienced engineer with design input from an experienced fisheries biologist and hydrologist. Such personnel shall oversee or review the project during construction to ensure that project design criteria and conservation measures are being properly implemented.
 - ii. Forest Service Design Assistance Teams or the BLM equivalent will provide design review for projects that exceed \$100,000 in cost or will result in structures (excluding road fill) that are greater than 20' in width.
 - iii. Assess sites for a potential to headcut below the natural stream gradient. Along with field surveys, refer to a Castro (2003) article in Appendix III for a guide to assess headcut potential. Projects that lead to headcutting below the natural stream gradient are excluded.

- iv. Design Standards – *The following design standards will meet or exceed ODFW fish passage criteria described in OAR 635-412-0035 (3) and (10).*
- a. Structure Type – Structure types include closed-bottomed culverts, open-bottomed arch culverts, and bridges. Structure material must be concrete or metal.
 - b. Structure Width – The structure width shall never be less than the bankfull channel width, *which will be determined in nearby undisturbed stream reaches above and/or below the existing structure.* (The stream width inside the culvert or between bridge footings shall be equal to or greater than the bankfull width). The minimum structure width and height for a closed bottom culvert shall be 6 feet to allow manual placement of stream simulation material. Structures must accommodate a 100-year flood flow while maintaining sediment continuity (similar particle size distribution) within the culvert as compared to the upstream and downstream reaches. To meet this requirement, unconfined channel types (Rosgen C, E, and B channel types, Rosgen 1996) may require structures wider than bankfull and/or the addition of flood relief culverts or other comparable flood relief methods.
 - c. When possible *and in association with mainstem stream simulation structures,* flood relief culverts will be designed to restore and maintain access to off-channel holding areas for juvenile and adult fish. Therefore, existing floodplain channels should be the first priority for location of flood relief culverts. Flood relief culverts should be installed in a manner that match floodplain gradient and do not lead to scour at the outlet.
 - d. Channel Slope – The structure slope shall approximate the average channel gradient of the natural stream up and downstream of the structure. *Aggraded material above a culvert can be used to embed the new structure and/or restore a degraded stream gradient below the culvert.* The maximum slope for closed-bottomed culverts shall not exceed 6% because of difficulties in retaining substrate in the culvert at higher gradients. Open-bottom arches can be placed in channel gradients that exceed 6%.
 - e. Embedment – If a closed culvert is used, the bottom of the culvert shall be buried into the streambed not less than 20% and not more than 50% of the culvert height. For open-bottomed arches and bridges, the footings or foundation shall be designed to be stable at the largest anticipated scour depth. Substrate and habitat patterns within the culvert should mimic stream patterns that naturally occur above and below the culvert. Coarser material may be incorporated to create velocity breaks during high flows, thereby improving fish passage, and to provide substrate stability.
 - f. Rip Rap – The use of riprap is permissible above bankfull height to protect the inlet or outlet of new culverts or open-bottomed arches. If the use of riprap is required for culvert stability, then an additional analysis may be required to ensure that the structure is not undersized. Riprap may only be placed below bankfull height when necessary for protection of abutments and pilings for bridges. However, the amount and placement of riprap around the abutments and/or pilings should not constrict the bankfull flow.

- g. Grade Control Structures – Grade control structures are permitted to prevent headcutting above or below the culvert or bridge. Grade control typically consists of boulder structures that are keyed into the banks, span the channel, and are buried in the substrate.
- h. Road Dips – Where applicable, incorporate road dips into stream crossing design, to ensure catastrophic flood events will transport overflow back into the stream channel instead of onto the road bed.
- i. Structures containing concrete must be cured or dried before they come into contact with stream flow.
- iv. In cases of structure removal or when removing an existing structure and replacing it with a bridge, restore the stream channel and reconnect the floodplain at the site using applicable restoration categories.
- v. When removing woody debris from the road-crossing inlet, place the debris downstream of the road crossing.
- vi. Monitor structures after high flow events, which occur during the first fall/winter/spring after project completion. Assess the following parameters: headcutting below natural stream gradient, substrate embeddedness in the culvert, scour at the culvert outlet, and erosion from sites associated with project construction. If necessary, apply remedial actions (using project design criteria and conservation measures) if projects do not meet the intended goals. *If GP/RGP standards cannot be met, contact the DSL and ODFW for permitting options.*
- vii. Conservation Measures – Along with the general conservation measures applicable to all activity categories, the following conservation measures will be used to minimize sediment and turbidity and effects of fish handling/transport.
 - a. Isolate Construction Area and Remove Fish from Project Area
 - 1. All fish capture, removal, and handling activities shall be conducted by an experienced fisheries biologist or technician.
 - 2. Isolate Capture Area – Install block nets at up and downstream locations and leave in a secured position to exclude fish from entering the project area. Leave nets secured to the stream channel bed and banks until fish capture and transport activities are complete. If block nets or traps remain in place more than one day, monitor the nets and or traps at least on a daily basis to ensure they are secured to the banks and free of organic accumulation and to minimize fish predation in the trap.
 - b. Fish Capture Alternatives
 - 1. Collect fish by hand or dip nets, as the area is slowly dewatered.
 - 2. Seining – Use a seine with mesh of such a size to ensure entrapment of the residing ESA-listed fish.
 - 3. Minnow traps – Traps will be left in place overnight and in conjunction with seining.
 - 4. Electrofishing – Prior to dewatering, use electrofishing only where other means of fish capture may not be feasible or effective. The protocol for electrofishing includes the following:

- If fish are observed spawning during the in-water work period, electrofishing shall not be conducted in the vicinity of spawning adult fish or active redds.
 - Only Direct Current (DC) or Pulsed Direct Current (PDC) shall be used.
 - Conductivity <100 use voltage ranges from 900 to 1100. Conductivity from 100 to 300 then use voltage ranges from 500 to 800. Conductivity greater than 300 then use voltage to 400.
 - Begin electrofishing with minimum pulse width and recommended voltage and then gradually increase to the point where fish are immobilized and captured. Turn off current once fish are immobilized.
 - Do not allow fish to come into contact with anode. Do not electrofish an area for an extended period of time. Remove fish immediately from water and handle as described below. Dark bands on the fish indicate injury, suggesting a reduction in voltage and pulse width and longer recovery time.
- c. Handling and Release –Fish must be handled with extreme care and kept in water the maximum extent possible during transfer procedures. A healthy environment for the stressed fish shall be provided—large buckets (five-gallon minimum to prevent overcrowding) and minimal handling of fish. Place large fish in buckets separate from smaller prey-sized fish. Monitor water temperature in buckets and well-being of captured fish. As rapidly as possible (especially for temperature-sensitive bull trout), but after fish have recovered, release fish upstream of the isolated reach in a pool or area that provides cover and flow refuge. Document all fish injuries or mortalities and include in annual report.
- d. Dewater Construction Site – Upstream of the isolated construction area, divert flow around the construction site with a coffer dam (built with non-erosive materials such as sand bags, concrete blocks, etc) and an associated pump or a by-pass culvert. Diversions constructed with material mined from the streambed or floodplain is not permitted. Small amounts of in-stream material can be moved to help seal and secure diversion structures. Pumps must have fish screens and be operated in accordance with NMFS fish screen criteria (NMFS 1995). Dissipate flow energy at the bypass outflow to prevent damage to riparian vegetation or stream channel. If diversion allows for downstream fish passage (i.e., is not screened), place diversion outlet in a location to promote safe reentry of fish into the stream channel, preferably into pool habitat with cover. When necessary, pump seepage water from the de-watered work area to a temporary storage and treatment site or into upland areas and allow water to filter through vegetation prior to reentering the stream channel. *A sump hole maybe constructed in the dewatered stream channel to pump seepage water, provided that the depth be the minimum needed and all streambed material is placed back in the created sump.*
- e. Stream Re-watering – Upon project completion, slowly re-water the construction site to prevent loss of surface water downstream as the construction site streambed absorbs water and to prevent a sudden increase in stream

turbidity. Monitor downstream during re-watering to prevent stranding of aquatic organisms below the construction site.

- xi.** Excluded Activities – Use of treated wood for replacement bridges; bridge piers and abutments will not be constructed in the bankfull width; the hydraulic method will not be used (e.g., culverts with constructed metal baffles or weirs); projects that permit exotic fish into isolated bull trout populations or other native fish populations.

e) Maximum Removal & Fill Estimates

- i. Project Extent: One project is equal to the replacement or removal of one road stream crossing structure (culvert or bridge). Project length, including grade control structures, shall not exceed 300'.*

If another aquatic restoration activity covered by this GP/RGP is used as a complementary action to increase the biological/ecological uplift within the project area, the combined actions are considered one project, one of the ten projects allowed per 5th field watershed. A complementary action shall follow the associated design criteria and fill and removal limits. Any additional action—beyond the one complementary action—within the project area will be considered a separate project, counting against the 10 projects per 5th field watershed.

- ii. For culvert replacement projects, both removal and fill will not exceed 700 cubic yards (each) below OHW. (This will accommodate large structures, such as open-bottom arches 30'x100'. These large structures will constitute <25% of the fish passage projects.) Substrate will be imported to embed culverts or open-bottom arches. The majority of projects will fall below this upper limit.*
- iii. For culvert removal and channel restoration projects, removal and fill amounts will be commensurate with that needed to restore floodplain and stream channel dimensions.*
- iv. Bypass roads that use culverts shall be constructed within the isolated work area, and the associated culvert shall be large enough to carry the highest flow reasonably to be expected to occur during construction. Bypass roads constructed from temporary bridges shall occur within or immediately adjacent to the dewatered area. For temporary bridges adjacent to the dewatered area, such bridges shall span the bankfull width and follow wetland guidelines in A. 1. b. i. e. of this appendix. Remove all construction material and restore area to preproject conditions.*

6. Irrigation Screen Installation and Replacement & Weir Removal

- a) **Description** – Unscreened or improperly screened irrigation diversion structures can entrain fish into canals or impinge fish on fish screens, where they become trapped and die (USFWS 2007). If approach velocities are too fast, fish can also be impinged against the screen surface (NOAA 2008).

The BLM and Forest Service propose to install, replace, or upgrade off-channel screens to improve fish passage or prevent fish entrapment at existing irrigation diversions. This action also includes the removal of non-needed existing diversion weirs that are less than six feet high *and* impound less than 15 acre feet of water. Construction would involve use of heavy equipment, such as excavators, backhoes, front-end loaders, dump trucks, and bull dozers.

- b) **Long-term Beneficial Effects** – The primary long-term beneficial effect of properly screening diversions is decreased fish mortality. The removal of unneeded diversion structures improves fish passage and restores natural channel dynamics—bedload movement, sediment transport, transport of wood (USFWS 2007).

- c) **Short-term Adverse Effects** – Refer to section (5) *Project Impacts and Alternatives* of this application for a list of short-term adverse effects. The *General Conservation Measures Applicable to All Activity Categories* in part A. 1. of this appendix as well as project-specific design criteria and removal & fill thresholds provided below will be applied to minimize adverse effects.

d) **Design Criteria**

- i. *Notify nearest ODFW screen specialist and coordinate during the design phase of screen installation projects.*
- ii. All fish screens must be sized to match the landowner's documented or estimated historic water use and legal water right(s) which ever is less.
- iii. Irrigation diversion intake and return points must be designed (to the greatest degree possible) to prevent all native fish life stages from swimming or being entrained into the irrigation system.
- iv. Screens, including screens installed in temporary and permanent pump intakes, must meet ODFW and NMFS (1995) fish screen and passage criteria. NMFS fish screen criteria applies to federally listed salmonid species under their jurisdiction as well as bull trout, Oregon chub, shortnose sucker, Lahontan cutthroat trout, Lost River sucker, and Warner sucker under USFWS jurisdiction.
- v. Size of bypass structure should be big enough to pass kelt steelhead and migratory bull trout back into the stream.
- vi. Abandoned ditches and other similar structures will be plugged or backfilled, as appropriate, to prevent fish from swimming or being entrained into them.
- vii. When making improvements to pressurized irrigation systems, install a totalizing flow meter capable of measuring rate and duty of water use. For

non-pressurized systems, install a staff gage or other measuring device capable of measuring instantaneous rate of water flow.

viii. Diversion Removal

- a.** Construction Actions – Heavy machinery operating from the bank or within the channel may be used to aid in removal of diversion structures. Use *Fish Passage Culvert and Bridge Projects* conservation measures, which include dewatering the construction site, fish capture and release, and rewatering (part B. 5. d] vii.).
 - b.** Construction Impacts – Stream channel substrate will be minimally disturbed with the removal of the diversion dam. Restored stream flow will flush out substrate fines within the formerly dewatered area, resulting in increased but short-lived stream turbidity (usually less than 2 hours).
- ix.** Excluded Activities - Effects from the issuance of Action Agency permit to divert water from Federal lands; large diversions/structures which have substantial accumulations of sediment that may be released and adversely affect downstream fish, critical and or essential fish habitat; consolidation, improvement, and modification of diversions.

e) *Maximum Removal & Fill Estimates*

- i.** *One project is equal to removal of one in-channel weir structure and/or installation or replacement of one irrigation screen.*

If another aquatic restoration activity covered by this GP/RGP is used as a complementary action to increase the biological/ecological uplift within the project area, the combined actions are considered one project, one of the ten projects allowed per 5th field watershed. A complementary action shall follow the associated design criteria and fill and removal limits. Any additional action—beyond the one complementary action—within the project area will be considered a separate project, counting against the 10 projects per 5th field watershed.

- ii.** *No more than 500 cubic yards of material can be removed from the stream channel above the location of an irrigation weir that has been removed. Such material will constitute the weir and channel substrates that have aggraded above the natural stream gradient, which can be placed immediately downstream of the weir location to restore the natural grade of the stream channel.*
- iii.** *No more than 75 cubic yards can be removed below the OHW to accommodate the installation or replacement of fish screen/diversion structures*

7. Floodplain Overburden Removal

- a) **Description** – Levees, berms, and dikes are commonly found along mid- to large-sized rivers for flood control or infrastructure protection and can severely disrupt ecosystem function (Gergel et al. 2002) and fish community structure (Freyer and Healy 2003). Similarly, mine tailings left by dredging for precious metals can have comparable effects on small streams.

The BLM and Forest Service propose to remove anthropogenic overburden and fill, such as dredged mine tailings, railroad beds, dikes, berms, and levees from floodplains to restore natural floodplain functions. Such functions include overland flow during high-water events, dissipation of flood energy, increased water storage to augment low flows, sediment and debris deposition, growth of riparian vegetation, nutrient cycling, and development of side channels and alcoves. Construction would involve use of heavy equipment, such as excavators, earthmovers, scrapers, backhoes, front-end loaders, dump trucks, and bull dozers.

(Of note, this category includes removal of overburden throughout a floodplain and is not restricted solely to the restoration of existing side channels or alcoves. This category maybe implemented where no side channels or alcoves exist. Conversely, the *Reconnection of Existing Side Channels and Alcoves* category covers only those projects that remove overburden to restore side channels and alcoves.)

- b) **Long-term Beneficial Effects** – The removal of floodplain overburden will improve connection between the stream and its floodplain and allow reestablishment of riparian vegetation. Over time, the removal of overburden will also allow for the restoration of natural channel forming processes. Over the course of many decades, degraded and incised channels will be able to regain meanders, aggrade to the proper elevation, and resume natural formation of habitat features. Ultimately, this will result in more functional fish habitat—streams with overhead cover and undercut banks to provide protection for juvenile fish, low width-to-depth ratios that provide cool and deep refugia for migrating juveniles, and healthy riparian plant communities that provide allochthonous nutrient inputs that drive the food base for fish. More immediate beneficial effects will result from the restoration of “flood pulses” that periodically deliver water, nutrients, and sediment to floodplains (NOAA 2008).
- c) **Short-term Adverse Effects** – Refer to section (5) *Project Impacts and Alternatives* of this application for a list of short-term adverse effects. The *General Conservation Measures Applicable to All Activity Categories* in part A. 1. of this appendix as well as project-specific design criteria and removal & fill thresholds provided below will be applied to minimize adverse effects.
- d) **Design Criteria**
- i. Create floodplain characteristics—elevation, width, gradient, length, and roughness— that mimic, to the greatest degree possible, those that would naturally occur at that stream and valley type.

- ii. Overburden or fill comprised of native materials, which originated from the project area, may be used to reshape the floodplain, placed in small mounds on the floodplain, used to fill anthropogenic holes, buried on site, and/or disposed into upland areas.
- iii. To the greatest degree possible, non-native fill material, originating from outside the project area (floodplain), shall be removed from the floodplain to an upland site.
- iv. Where it is not possible to remove all portions of dikes and berms, create openings with culverts and/or breaches. Place culverts through or remove portions of such structures to pass high flows—bankfull or greater— into floodplain areas. The width of a culvert or breach should be equal to or greater than the bankfull width of the stream. Culverts and breaches should be located at a depositional area of the channel. Design proper number and location of culvert and breach sites to help prevent fish stranding as high flows recede.
- v. Conduct a contaminant survey for mine tailing removal projects prior to project implementation. If contaminants are found above levels set by the Environmental Protection Agency, a separate consultation is required.
- vi. When necessary, decompact soils once overburden material is removed.

e) **Maximum Removal & Fill Estimates**

- i. *One project is equal to overburden removal along ½ mile of stream. Includes floodplains on both sides of stream*

If another aquatic restoration activity covered by this GP/RGP is used as a complementary action to increase the biological/ecological uplift within the project area, the combined actions are considered one project, one of the ten projects allowed per 5th field watershed. A complementary action shall follow the associated design criteria and fill and removal limits. Any additional action—beyond the one complementary action—within the project area will be considered a separate project, counting against the 10 projects per 5th field watershed.

- ii. *Overburden material will be removed or redistributed above the OHW and minor amounts can be removed/recontoured below OHW to better connect the stream and reconstructed floodplain. The horizontal extension into the stream channel shall not exceed 1/3 of the bankfull width or 10', whichever is less.*
- iii. *Removal amounts associated with restoration of tributary and/or side channels, which were blocked and covered by overburden material, will be commensurate with natural channel dimensions.*
- iv. *Disposal of excavated material from project sites shall not be placed in wetlands.*

8. Reduction of Recreation Impacts

- a) **Description** – Developed and dispersed campgrounds and other recreational sites are commonly found along streams and within riparian areas on BLM and Forest Service lands. Recreation infrastructure and related use can confine stream channels, disrupt floodplain functions, and degrade riparian vegetation communities.

The BLM and Forest Service propose to close or better control recreation use along streams and within riparian areas. This includes removal of designated campgrounds, dispersed camp sites, and foot trails as well as treatments of off-road vehicle (ORV) roads/trails in riparian areas. Actions that reduce aquatic disturbances within recreation sites to be left open are included. Dispersed and developed campground restoration usually includes some or all of the following: removal of campground fill material and/or structures, such as berms, toilets, fences, picnic tables; ripping or sub-soiling sites to remove compaction; removal of bank armoring and stream confining structures; placement of rock or other barriers such as fences to block vehicle access; gravel surfacing of existing sites to designate access routes and parking; planting shrubs and trees to restore streamside, floodplain, and meadow vegetation; reducing or clearing noxious weeds. Construction would involve use of heavy equipment, such as excavators, earthmovers, scrapers, backhoes, front-end loaders, dump trucks, and bull dozers.

- b) **Long-term Beneficial Effects** – Long-term beneficial effects result primarily from removal of infrastructure and exclusion of people and vehicles from streams and riparian areas. Reduced streambank damage and reduced chronic disturbance of riparian areas will result from implementation of this activity category. Eliminating gravel-clogging sediment sources (e.g., eroding streambanks) will help to increase the diversity and densities of aquatic macroinvertebrates used as a food source by fish species. It will also maintain or increase the amount of interstitial cover available to juvenile fish and juvenile emergence success. Suffocation of fry and entombment caused by excessive siltation of spawning gravels will also be reduced or eliminated. Light penetration, which, in turn, affects the feeding abilities of fish species and juvenile growth rates, will improve (NOAA 2008).
- c) **Short-term Adverse Effects** – Refer to section (5) *Project Impacts and Alternatives* of this application for a list of short-term adverse effects. The *General Conservation Measures Applicable to All Activity Categories* in part A. 1. of this appendix as well as project-specific design criteria and removal & fill thresholds provided below will be applied to minimize adverse effects.
- d) **Design Criteria**
- i. Design and implement remedial actions to restore floodplain characteristics—elevation, width, gradient, length, and roughness—in a manner that closely mimics, to the greatest degree possible, those that would naturally occur at that stream and valley type.

- ii. Overburden or fill comprised native materials, which originated from the project area, can be used to reshape the floodplain, placed in small mounds on the floodplain, used to fill anthropogenic holes, buried on site, and/or disposed into upland areas.
 - iii. To the greatest degree possible, non-native fill material, originating from outside the project area, shall be removed from the floodplain to an upland site.
 - iv. When necessary, decompact soils once overburden material is removed.
 - v. Place barriers—boulders, fences, gates, etc—outside of the bankfull width and wetlands across traffic routes to prevent ORV access into and across streams or wetlands.
- e) **Maximum Removal & Fill Estimates**
- i. *Project Extent: One project is equal to restoration work conducted at one recreation site.*

If another aquatic restoration activity covered by this GP/RGP is used as a complementary action to increase the biological/ecological uplift within the project area, the combined actions are considered one project, one of the ten projects allowed per 5th field watershed. A complementary action shall follow the associated design criteria and fill and removal limits. Any additional action—beyond the one complementary action—within the project area will be considered a separate project, counting against the 10 projects per 5th field watershed.

- ii. *No more than 500 cubic yards of material can be removed or altered below the OHW or in wetlands. Work would involve removal of anthropogenic material along streambanks and in floodplains and wetlands to prepare for stream channel, bank, floodplain, and/or wetland restoration projects.*

9. **Riparian Exclusion Fencing (with water gaps and stream crossings)**

- a) **Description** – Livestock grazing, which has occurred on federal lands since the late 1880s, has degraded riparian habitat in localized areas along streams and riparian areas. Even though grazing practices have drastically improved through reductions in permitted livestock numbers and seasonal restrictions relative to past decades, legacy impacts remain. Fencing sensitive riparian areas is a very effective way of protecting riparian resources, fish habitat and fish populations. Platts (1991) found that in 20 of 21 studies riparian and aquatic habitats improved when grazing was prohibited in the riparian zone. Storch (1979) reported that in Oregon, in a reach of Camp Creek passing through grazed areas, game fish (trout) made up 77% of the population in a fenced enclosure, but only 24% of the population outside the enclosure. Line et al. (2000) found that excluding livestock through fencing and planting trees in the excluded area significantly reduced nutrient inputs from livestock into streams.

The BLM and Forest Service propose to construct and replace fences around selected riparian areas to restrict or eliminate human and livestock use to maintain or restore stream channels, riparian vegetation, and floodplain functions. Fence types may include the following: permanent barbed-wire, high-tension, smooth-wire, let-down,

electric, buck and pole, and other similar types. In association with riparian fence projects, livestock water gaps and crossings will be constructed. Construction may involve use of dump trucks and excavator-type equipment along with all-terrain vehicles, flatbed trucks, and manual/power tools.

- b) Long-term Beneficial Effects** – Long-term beneficial effects include restoration of riparian plant communities, which in turn increases bank stability along with decreases in sediment inputs, width depth ratios, and direct solar radiation to the stream channel. This will improve the survival of yearling and other juvenile salmonids by providing appropriate substrate for fry and an increase in cover from predators and high flows. Beneficial effects to fish also include enhanced fitness through improved conditions for forage species and improved reproductive success for adult fish as a result of increased deep water cover and holding areas (NOAA 2008).
- c) Short-term Adverse Effects** – Refer to section (5) *Project Impacts and Alternatives* of this application for a list of short-term adverse effects. The *General Conservation Measures Applicable to All Activity Categories* in part A. 1. of this appendix as well as project-specific design criteria and removal & fill thresholds provided below will be applied to minimize adverse effects.
- d) Design Criteria**
 - i.** Fence placement should allow for lateral movement of a stream.
 - ii.** Minimize vegetation removal, especially potential LW recruitment sources, when constructing fence lines.
 - iii.** *Design fences to address wildlife concerns as prescribed in BLM/FS fence construction manuals.*
 - iv.** When constructing livestock crossings at streams and/or water gaps, use the following PDCs:
 - a.** Locate crossings and/or water gaps where stream banks are naturally low.
 - b.** When possible, crossings and gaps should not be constructed within known or suspected spawning areas (e.g., pool tail-outs where spawning may occur).
 - c.** Fences at stream crossings and water gaps should not inhibit up or downstream movement of fish and or significantly impede bedload movement. Where appropriate, construct fences at water gaps as to allow passage of LW and other debris.
 - d.** If necessary, the stream bank and approach lanes can be stabilized with native vegetation and/or angular rock to reduce chronic sedimentation. The stream crossing or water gap should be armored with up to cobble-size rock, and use angular rock if natural substrate is not of adequate size.
 - e.** Livestock crossings or water gaps must not be located in areas where compaction or other damage may occur to sensitive soils and vegetation (e.g., wetlands) due to congregating livestock or the placement of angular rock.
 - f.** The maximum width of a water gap or stream crossing should be no less than 10 feet and no more than 20 feet wide in the upstream-downstream direction.

- g. When using pressure treated lumber for fence posts only, complete all cutting/drilling offsite so that treated wood chips and debris does not enter water or flood prone areas.
- v. Excluded Activities – riparian fencing to create livestock handling facilities

e) **Maximum Removal & Fill Estimates**

- i. *One project is equal to one stream crossing or water gap.*

If another aquatic restoration activity covered by this GP/RGP is used as a complementary action to increase the biological/ecological uplift within the project area, the combined actions are considered one project, one of the ten projects allowed per 5th field watershed. A complementary action shall follow the associated design criteria and fill and removal limits. Any additional action—beyond the one complementary action—within the project area will be considered a separate project, counting against the 10 projects per 5th field watershed.

- ii. *No more than 40 cubic yards of material shall be placed within the OHW to construct a water gap. Minimal channel scraping, smoothing, and removal may occur to prepare foundation for rock placement.*
- iii. *No more than 20 cubic yards shall be removed above OHW to slope water gap entrance/exit.*

10. **Riparian Planting**

- a) **Description** – Past management activities, such as grazing, road construction, recreation, and more, have removed riparian vegetation along streams in localized areas. Even though forest and range management practices have been improved to prevent or minimize removal of riparian vegetation, legacy impacts remain. Many authors have discussed the importance of riparian vegetation to stream ecosystems (Hicks et al. 1991; Murphy and Meehan 1991; Swanston 1991; Spence et al. 1996). Streambanks covered with well-rooted woody vegetation can withstand a critical shear stress three times that of weakly vegetated streambanks or streambanks covered with shallow-rooted grass (Millar and Quick 1998). Planting of native riparian vegetation is one of the most important actions that can be taken to restore natural processes to stream ecosystems.

The BLM and Forest Service propose to conduct riparian vegetation planting as a means to help restore plant species composition and structure (ecological diversity) that would occur under natural disturbance regimes. The resulting benefits to the aquatic system can include desired levels of stream shade, bank stability, stream nutrients, LW inputs, increased grasses, forbs, and shrubs, and reduced soil erosion. Activities may include the following: planting conifers, deciduous trees and shrubs; placement of sedge and or rush mats; gathering and planting willow cuttings. Equipment may include excavators, backhoes, dump trucks, power augers, chainsaws, and manual tools.

- b) Long-term Beneficial Effects** – Long-term beneficial effects include restoration of riparian plant communities, which in turn increases bank stability along with decreases in sediment inputs, width depth ratios, and direct solar radiation to the stream channel. This will improve the survival of yearling and other juvenile salmonids by providing appropriate substrate for fry and an increase in cover from predators and high flows. Beneficial effects to fish also include enhanced fitness through improved conditions for forage species and improved reproductive success for adult salmonids as a result of increased deep water cover and holding areas. As plantings mature, width-to-depth ratios of disturbed channels and fine sediment delivery will decrease (NOAA 2008).
- c) Short-term Adverse Effects** – Refer to section (5) *Project Impacts and Alternatives* of this application for a list of short-term adverse effects. The *General Conservation Measures Applicable to All Activity Categories* in part A. 1. of this appendix as well as project-specific design criteria and removal & fill thresholds provided below will be applied to minimize adverse effects.
- d) Design Criteria**
- i. An experienced silviculturist, botanist, ecologist, or associated technician shall be involved in designing vegetation treatments.
 - ii. No roads or landings will be constructed.
 - iii. Tree and shrub species as well as sedge and rush mats to be used as transplant material shall come from outside the bankfull width, typically in abandoned flood plains, and where such plants are abundant.
 - iv. Sedge and rush mats should be sized as to prevent their movement during high flow events.
 - v. Concentrate plantings above the bankfull elevation.
- e) Maximum Removal & Fill Estimates**
- i. *Project Extent: One project equals an action that uses heavy machinery to cross a stream or conduct work activities in one mile of stream below the OHW.*
- If another aquatic restoration activity covered by this GP/RGP is used as a complementary action to increase the biological/ecological uplift within the project area, the combined actions are considered one project, one of the ten projects allowed per 5th field watershed. A complementary action shall follow the associated design criteria and fill and removal limits. Any additional action—beyond the one complementary action—within the project area will be considered a separate project, counting against the 10 projects per 5th field watershed.*
- ii. *For the planting of mature willow along with sapling cottonwood, alder, and other riparian deciduous vegetation, no more than 500 cubic yards will be removed and subsequently refilled for each project. Such material will be a result of excavation and re-filling of transplant holes or trenches.*
 - iii. *When using sedge or rush mats, no more than 500 mats (3' x 6' x 1') shall be used to stabilize banks. Mat placement can extend below the OHW but most will occur above the OHW. To minimize potential effects to wetlands, harvest of mats shall*

be distributed across the project area and not from a single location. At harvest sites, no more than 25% of the vegetation shall be removed and mats will be taken in such a manner as to leave undisturbed vegetation of equal size or greater between each excavated mat. Plant sedge or rush plugs and/or seeds throughout excavated area to promote regrowth. Monitor for project related spread of noxious plants and apply eradication measures upon detection of such plants.

11. Road Treatments

- a) Description** – Over the past century, roads have been constructed throughout Federal lands in Oregon and Washington to access timber and to mine, facilitate fire suppression, and access recreation areas. The effects of road building and maintenance on fish habitat and watershed function are summarized in Furniss et al. (1991). Roads and associated ditch systems increase watershed drainage networks, intercept overland flow, and shift timing of peak flows. Improperly constructed road-stream crossings, particularly culverts, can impede fish passage. During precipitation events, fine sediments can be washed from the road surface into streams. This is especially true for poorly maintained roads. Roads constructed in close proximity to streams constrain the stream channel and eliminate the stream’s access to its floodplain (NOAA 2008).

The BLM and Forest Service propose to implement road treatments, from simple closures to more complex road obliteration and removal, with an overall goal of restoring hydrologic functions and associated fish habitat. This category includes stormproofing roads intended to remain open, thereby hydrologically disconnecting such roads from watershed streams. Actions such as bridge and culvert removal, removal of asphalt and gravel, installing drainage culverts, constructing road dips, subsoiling or ripping of road surfaces, outsloping, waterbarring, fill removal, sidecast pullback, re-vegetating with native species and placement of LW and/or boulders are included. Roadway barricading to exclude vehicular traffic is covered only if the overall road remediation project substantively addresses restoration of hydrologic function. For culvert removals on closed roads, limited cutting or removal of vegetation on the closed road-bed to access the culvert may be required. Construction would involve use of heavy equipment, such as excavators, backhoes, front-end loaders, dump trucks, and bull dozers.

- b) Long-term Beneficial Effects** – The proposed road activities will decrease watershed drainage networks, eliminate stream-road crossings, and reduce areas of soil compaction. These beneficial impacts to the landscape will reduce scour-related mortality (and increase survival) of eggs and alevins, reduce involuntary downstream movement of juveniles during freshets, increase substrate interstitial spaces used for refuge by fry, restore the timing of discharge-related life cycle cues (e.g., migrations), and increase spatial structure. Obliterating roads within a stream’s floodplain will decrease channel constriction and allow establishment of riparian functions (NOAA 2008)

c) **Short-term Adverse Effects** – Refer to section (5) *Project Impacts and Alternatives* of this application for a list of short-term adverse effects. The *General Conservation Measures Applicable to All Activity Categories* in part A. 1. of this appendix as well as project-specific design criteria and removal & fill thresholds provided below will be applied to minimize adverse effects.

d) **Design Criteria**

- i. For road removal projects within riparian areas, recontour the affected area to mimic natural floodplain contours and gradient to the greatest degree possible.
- ii. When obliterating or removing segments immediately adjacent to a stream or wetland, use sediment control barriers, to the extent practicable or as described in an Oregon Department of Environmental Quality 401 certification, between the project and the stream or wetland.
- iii. Drainage features used for stormproofing and treatment projects should be spaced as to hydrologically disconnect road surface runoff from stream channels.
- iv. *Dispose of side-cast and waste material (asphalt, concrete, etc) in stable sites out of the flood prone area. Native soils and rock used to construct the road may be used to restore natural or near-natural floodplain and bankfull contours, which were altered by the road and associated ditches and structures.*
- v. Minimize disturbance of existing vegetation in ditches and at stream crossings to the greatest extent possible.
- vi. Conduct activities during dry-field conditions—low to moderate soil moisture levels.
- vii. Culvert removal on fish bearing streams shall adhere to project design criteria and removal and fill estimates listed under the *Fish Passage Culvert and Bridge Projects* category (Appendix II, B. 5.). When removing a culvert from a first or second order, non-fishing bearing stream, project specialists shall determine if culvert removal should follow conservation measures listed under Fish Passage Culvert and Bridge Projects project design criteria. *If these measures are not used, the use of temporary sediment retention devices—such as biobags, straw bales, burlap—shall be used to contain the initial surge of sediment.*
- viii. For culvert removal projects, restore natural drainage patterns (floodplain and bankfull) and when possible promote passage of all fish species and life stages present in the area. Evaluate channel incision risk and construct in-channel grade control structures when necessary. Refer to Appendix III.
- ix. Excluded Activities –new road construction and routine road maintenance.

e) **Maximum Removal & Fill Estimates**

- i. *One project is up to one mile of road treatments where the road-bed is altered with heavy equipment within the OHW, wetlands, or above OHW when high degree of connectivity occurs between road and listed fish stream.*

If another aquatic restoration activity covered by this GP/RGP is used as a complementary action to increase the biological/ecological uplift within the project area, the combined actions are considered one project, one of the ten projects allowed per 5th field watershed. A complementary action shall follow the

associated design criteria and fill and removal limits. Any additional action—beyond the one complementary action—within the project area will be considered a separate project, counting against the 10 projects per 5th field watershed.

- ii. No more than 2,500 cubic yards of material can be removed below the OHW. Material for removal would include road fill (bed and/or fill slopes) and bank-hardening structures, such as rock gabions and rip rap. Such removal would be conducted to prepare for implementation of one or more GP restoration actions (e.g. Large Wood, Boulder, and Gravel placement, Streambank Stabilization, Riparian Planting) to restore stream channels, banks, and associate floodplains impacted by the road.*
- iii. Disposal of excavated material from project sites shall not be placed in wetlands.*
- iv. For culvert projects, follow removal & fill estimates described in the Fish Passage Culvert and Bridge Projects category.*

12. Removal of Legacy Structures

- a) **Description** – During the 1980s and early 1990s, many habitat-forming structures, such as log weirs, boulder weirs, and gabions, were placed in streams and other water bodies in an effort to improve fish habitat. Many of these structures were placed in a manner that interfered with natural stream function and have been continually degrading stream habitat since their installation (USFWS 2007). These legacy structures typically resulted in widened stream channels, increased width/depth ratios, decreased sinuosity, and increased stream exposure to solar radiation.

The BLM and Forest Service propose to remove large wood, boulders, rock gabions, and other in-channel structures that were constructed to improve fish habitat but were installed in a manner that was and continues to be inappropriate for the given stream type. Removal of legacy structures would include the use of excavator-type machinery, spidders, backhoes, and dump trucks.

- b) **Long-term Beneficial Effects** – Long-term beneficial effects of removing these structures include decreased streambank erosion, decreased stream width-to-depth ratios, and restoration of natural stream processes. Decreasing erosion will increase the survival of eggs and alevins and reduce interference with feeding, behavioral avoidance and the breakdown of social organization. Decreasing the stream width-to-depth ratios will increase adult fish holding areas and improve rearing sites for yearling and older juvenile fish (NOAA 2008)
- c) **Short-term Adverse Effects** – Refer to section (5) *Project Impacts and Alternatives* of this application for a list of short-term adverse effects. The *General Conservation Measures Applicable to All Activity Categories* in part A. 1. of this appendix as well as project-specific design criteria and removal & fill thresholds provided below will be applied to minimize adverse effects.

d) Design Criteria

- i.** If the structure being removed contains material (i.e., LW, boulders, etc) not typically found within the stream or floodplain at that site, remove material from the 100-year floodplain.
- ii.** If the structure being removed contains material (i.e., LW, boulders, etc) that is typically found within the stream or floodplain at that site, the material can be reused to implement habitat improvements described under *Large Wood, Boulder, and Gravel Placement* activity category in this GP.
- iii.** If the structure being removed is keyed into the bank, fill in “key” holes with native materials as to restore contours of streambank and floodplain. Compact the fill material adequately to prevent washing out of the soil during over bank flooding. Do not mine material from the stream channel to fill in “key” holes.
- iv.** When removal of buried (keyed) structures may result in significant disruption to riparian vegetation and/or the floodplain, consider using a chainsaw to extract the portion of log within the channel and leaving the buried sections within the streambank.
- v.** Assess sites for a potential to headcut below the natural stream gradient. Along with field surveys, refer to Appendix III for a guide to assess headcut potential.
- vi.** If headcutting and channel incision are likely to occur due to structure removal, additional measures must be taken to reduce these impacts (see grade control options described under *Headcut Stabilization* activity category (part d. ii or iii).
- vii.** If the structure is being removed because it has caused an over-widening of the channel, consider implementing other GP restoration categories to decrease the width to depth ratio of the stream at that location to a level commensurate with upstream and downstream (within the same channel type)
- viii.** Protect riparian vegetation that has grown around legacy structures to the greatest degree possible.
- ix.** Excluded Activities – removal of dams and diversions.

e) Maximum Removal & Fill Estimates

- i.** *Project Extent: One project is equal to one stream mile of legacy structure removal. A site is defined as a single location within the project length.*

If another aquatic restoration activity covered by this GP/RGP is used as a complementary action to increase the biological/ecological uplift within the project area, the combined actions are considered one project, one of the ten projects allowed per 5th field watershed. A complementary action shall follow the associated design criteria and fill and removal limits. Any additional action—beyond the one complementary action—within the project area will be considered a separate project, counting against the 10 projects per 5th field watershed.

- ii.** *For large wood legacy structures, up to 350 logs may be removed or altered with no more than 50 logs at any given site.*
- iii.** *For boulder and gabion projects, removal will not exceed 2,500 cubic yards with no more than 250 cubic yards at any given site, such as a single weir or a 100’ stream section that was treated with integrated boulders. Legacy boulder structures may be altered to better accommodate natural conditions.*

- iv. *Stream channel substrate that has accumulated above removed legacy structures can be used to fill associated scour holes to help restore stream gradient.*

13. Riparian Juniper Treatment (non- commercial)

- a) **Description** – Western junipers have expanded rapidly into neighboring plant communities in the past 130 years, primarily due to climatic influences, livestock grazing, and fire suppression (Miller et al. 2005). Displaced plant communities include those in riparian areas, such as aspen, willow, cottonwood, alder, sedge, and rush. Some authors have concluded that the unnaturally large number of juniper trees currently present in some areas may cause decreased stream flow due to evapo-transpiration and increased soil erosion (Miller et al. 2005).

In response, the BLM and Forest Service propose to fell juniper trees occurring in riparian and associated uplands to help restore natural plant species composition and structure that would occur under natural fire regimes. The associated benefits to aquatic and riparian environments include the following: reduction of soil erosion into stream channels; increased frequencies and diversity of herbaceous, shrub, and tree species; increased bank stability and stream nutrients. Associated uplands include those areas where juniper stands are or will create conditions that result in lost ground cover and increased sedimentation into stream channels. Upland treatments would only be covered if those treatments directly benefit the aquatic environment. Treatments will emphasize the removal of junipers above natural stocking levels. Equipment may include the use of feller-buncher type equipment, slashbuster, chainsaws, winch machinery, and/or prescribed fire.

- b) **Long-term Beneficial Effects** – Long-term beneficial effects from juniper treatments include improved hydrologic conditions, restoration of native grasses and forbs, which will reduce surface erosion, and reestablishment of riparian species such as willow, alder, and aspen. These native species will create better thermal shading and improved bank stability (USFWS 2007).
- c) **Short-term Adverse Effects** – Refer to section (5) *Project Impacts and Alternatives* of this application for a list of short-term adverse effects. The *General Conservation Measures Applicable to All Activity Categories* in part A. 1. of this appendix as well as project-specific design criteria and removal & fill thresholds provided below will be applied to minimize adverse effects.
- d) **Design Criteria**
 - i. Do not cut old-growth juniper, which typically has several of the following features: sparse limbs, dead limbed or spiked-tops, deeply furrowed and fibrous bark, branches covered with bright-green arboreal lichens, noticeable decay of cambium layer at base of tree, and limited terminal leader growth in upper branches (Miller et al. 2005).

- ii. Where ground vegetation is sparse, leave felled juniper in sufficient quantities to promote reestablishment of vegetation and prevent erosion.
- iii. If seeding is a part of the action, consider whether seeding would be most appropriate before or after juniper treatment.
- iv. Where appropriate, move cut juniper stems into the stream channel and floodplain to provide aquatic benefits. Juniper can be felled or placed into the stream to promote channel aggradation as long as such actions do not obstruct fish movement, cover spawning gravels of fish or increase width to depth ratios.
- v. When using feller-buncher and slash-buster equipment, operate equipment in a manner that minimizes soil compaction and disturbance to soils and desired native vegetation to the greatest degree possible. Equipment exclusion areas (buffer area along stream channels) should be as wide as the feller-buncher or slash-buster arm.
- vi. Excluded Activities – Placement of juniper in streams where the action will preclude the stream from attaining its natural sinuosity.

e) *Maximum Removal & Fill Estimates*

- i. *Project Extent: One project is equal to juniper thinning along ½ mile of stream where felled junipers are placed in the stream channel and floodplain associated wetlands.*

If another aquatic restoration activity covered by this GP/RGP is used as a complementary action to increase the biological/ecological uplift within the project area, the combined actions are considered one project, one of the ten projects allowed per 5th field watershed. A complementary action shall follow the associated design criteria and fill and removal limits. Any additional action—beyond the one complementary action—within the project area will be considered a separate project, counting against the 10 projects per 5th field watershed.

- ii. *No more than 300 trees shall be placed below OHW or in wetlands.*

C. References

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Umatilla Tribe

Primary point of contact (cultural resources)

Carey Miller
Tribal Historic Preservation Officer
541-276-3629
P.O. Box 638
Pendleton, OR 97801
CareyMiller@ctuir.com

Secondary point of contact (cultural resources)

Teara Farrow
Program Manager, Cultural Resources Protection Program
541-276-3629
P.O. Box 638
Pendleton, OR 97801
tearafarrow@ctuir.com

Primary point of contact (natural resources, traditional cultural properties)

Eric Quaempts
Director, Department of Natural Resources
541-276-3447
P.O. Box 638
Pendleton, OR 97801
ericquaempts@ctuir.com

Preferred contact procedures

Email or phone. Email permit applications with location and project maps.

Areas of concern for Portland District

-Main-stem Columbia River
-John Day River
-Sherman, Gilliam, Jefferson, Wheeler, Grant, Malheur, Harney, Baker, Union, Wallowa, Umatilla, & Morrow Counties.

TRIBAL CONTACTS
ATTACHMENT 2

Burns Paiute Tribe

Primary Point of Contact

Don Munkers
General Manager
100 Pasigo Street
Burns, OR 97720
541-573-2088 ext 262
Don.munkers@burnspaiute-nsn.gov

Preferred contact procedures

Email, phone, or fax permit application with location and project maps.

Areas of concern for Portland District

-Eastern Oregon

-Primarily Malheur, Harney, Lake, Klamath, Deschutes, Crook, Jefferson, Wasco, Wheeler, Sherman, Gilliam, Morrow, and Grant Counties.

Cow Creek Band of Umpqua Tribe of Indians

Primary point of contact

Jessie Plueard
Archeologist
2371 Stephens Street, Suite 100
Roseburg, OR 97470
541-677-5575 ext. 5577
jplueard@cowcreek.com

Preferred contact procedures

Email or phone calls. Email permit application with location and project maps. Mr. Rondeau has agreed to respond to our requests within 30 days. Additionally, he will only respond to actions he has concerns on.

Areas of concern for Portland District

-Primarily Douglas County, but also portions of the following Counties (Curry, Josephine, Coos, Lane, Deschutes, Klamath).

Coquille Indian Tribe

Primary point of contact

Nicole Norris
Archaeologist
541-756-0904
3050 Tremont Street
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North Bend, OR 97459
nicolenorris@coquilletribe.org

Preferred contact procedures

Email or phone calls. Email permit applications with location and project maps.

Areas of concern for Portland District

-All proposed projects in Curry County, as well as Camas Valley (Douglas County).

Klamath Tribe

Primary point of contact

Perry Chocktoot
Cultural Resource Protection Specialist
P.O. Box 436
Chiloquin, OR 97624
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Perry.Chocktoot@klamathtribes.com

Preferred contact procedures

Email or phone calls. Email permit application with location and project maps.

Areas of concern for Portland District

-All projects East of the Cascades (Malheur, Harney, Lake, Crook, Deschutes, Klamath) Counties.

Confederated Tribes of Coos, Lower Umpqua & Siuslaw

Primary point of contact

Arrow Coyote
Archeologist-Cultural Resource Protection Coordinator
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Secondary point of contact

Howard Crombie
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Preferred contact procedures

Email or phone calls. Email permit application with location and project maps.

Areas of concern for Portland District

-Portions of the following Counties (Coos, Douglas, Lane, & Benton).

-Ancestral Territory of the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians extends from the mouth of Tenmile Creek (Lane County) in the North, South to a point halfway between the mouths of Whiskey Run Creek and Cut Creek (coinciding with the border between Sections 30 and 31, Township 27 South, Range 14 West, Coos County), and East to the crest of the Coast Range (to Weatherly Creek in the Umpqua Basin).

Fort Bidwell Indian Community of the Fort Bidwell Reservation

Primary point of contact

Denise Pollard
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Secondary point of contact

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Preferred contact procedures

Email or phone calls. Email permit application with location and project maps.

Areas of concern for Portland District

Klamath, Lake, Harney, & Malheur Counties.

Smith River Rancheria, California Tribe

Primary point of contact

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NAGRA/THPO Officer
Phone - 707-487-9255, ext 3180
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Sunsteinruck@tolowa.com

Information they would like to see from us via email in order to determine if there are Tribal concerns with any given permit action (permit applications with location and project maps)

Areas of concern for Portland District

-Coos, Curry, and Jackson Counties.

Yakama Indian Nation

Primary point of contact

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Point of contact regarding TCP's, treaty fishing sites, & usual & accustomed areas.

Phil Rigdon
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prigdon@yakama.com

Preferred contact procedures

Email or phone calls. Email permit application with location and project maps (they would prefer to get everything electronically if possible).

Areas of concern for Portland District

- Umatilla, Morrow, Gilliam, Sherman, and Hood River Counties adjacent to the Columbia River.
- Primarily Main-stem Columbia River
- Also confluence areas with the following rivers.
- Willamette River
- Deschutes River
- Hood River

- Burns/Piute area

Confederated Tribes of the Siletz Indians

Primary point of contact

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Cultural Resources Director
541-351-0148
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Preferred contact procedures

Email or phone calls. Email permit applications with location and project maps.

Areas of concern for Portland District

- Western third of Oregon from Washington to California.
- Wasco, Hood River, Multnomah, Columbia & Clatsop Counties adjacent to the Columbia River.
- Washington, Clackamas, Tillamook, Yamhill, Marion, Polk, Lincoln, Benton, Linn, Lane, Douglas, Coos, Jackson, Josephine & Curry Counties.

Warm Springs Tribe

Primary point of contact

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Cultural Resources
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Secondary points of contact

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Preferred contact procedures

Email or phone calls. Email permit application with location and project maps.

Areas of concern for Portland District

-Multnomah County south to Lane; Hood River, Sherman, Gilliam, and Wasco Counties south to Deschutes with portions of Lake and Klamath Counties; Crook County; Wheeler, Morrow, Umatilla, Grant, parts of Harney, Malheur, Baker and Union Counties; portions of Benton, Polk, Washington, and Columbia Counties

Nez Perce Tribe

Primary point of contact

Vera Sonneck
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Secondary point of contact

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Preferred contact procedures

Emails or phone calls. Email a copy of the permit application with location and project maps to Vera (she would prefer to receive everything electronically).

Areas of concern for Portland District

- Primarily main-stem Columbia River. See Columbia River Gorge National Scenic Area (**CRGNSA**) map.
- Sandy River confluence with the Columbia River eastward to the confluence with the Deschutes River and the Columbia River.
- Portions of the Counties directly abutting the Columbia River including the following; Multnomah, Hood River, Wasco, Sherman, Gilliam, Morrow, & Umatilla Counties.

Grand Ronde Tribe

Primary Point of Contact

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Secondary Point of Contact

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Point of contact for TCP's, treaty fishing sites, and usual & accustomed areas.

Michael Karnosh
Director, Natural Resources
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Same address as above
Michael.Karnosh@grandronde.org

Preferred contact procedures

Via email with a pdf copy of the project description and drawing.

Areas of concern for Portland District

-All areas west of the Cascade Mountains including Clatsop, Columbia, Washington, Tillamook Yamhill, Polk, Lincoln, Benton, Lane Douglas, & Josephine Counties. (except for Curry and Coos Counties).

Types of actions they want to see

-Any projects with ground-disturbing activities in Western Oregon. Ground disturbing activities can include excavation, dredging, piling installation, etc (please try and include information regarding the past and current land uses for the areas being evaluated).

-New replacement projects where the structure was installed before 1979 and left unaltered until present day.

-*Coordination is not requested for replacement of existing structures (i.e. culverts, pilings, etc) where the impact will be limited to the original disturbance footprint.*

Cowlitz Tribe

Primary point of contact

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Tribal Historic Preservation Officer
360-508-6369
P.O. Box 2547
Longview, WA 98632-8594
earthur@cowlitz.org

Preferred contact procedures

Dave would like to be contacted in as many ways as possible (phone, email, fax). He indicated he would like to be contacted using multiple methods in order to ensure he responds (his quote). You may try calling him first, followed up by an email.

Information they would like to see from us in order to determine if the Cowlitz Tribe has any concerns with a given action (permit applications with location and project maps). They would like all of this electronically if possible.

Areas of concern for Portland District

- Main-stem Columbia River from (Clatsop County to Sherman County).
- Riverward portions of the following Counties adjacent to the Columbia River (Clatsop, Columbia, Washington, Multnomah, Hood River, Wasco, and Sherman Counties).
- Lower portion of the Willamette River in Multnomah County.

General Conditions

In addition to all USACE permit conditions, the following 401 WQC conditions apply to all NWP categories certified or partially certified by this 401 WQC, unless specified in the condition. Additional 401 WQC Category Specific Conditions follow, which must also be complied with as applicable.

- 1) **Turbidity:** All practical Best Management Practices (BMPs) on disturbed banks and within the stream shall be implemented to minimize turbidity during in-water work. OAR 340-041-0036 states that turbidity shall not exceed 10% above natural stream turbidities, except where allowed by the rule. This rule also states that limited duration activities necessary to accommodate essential dredging, construction or other legitimate activities and which cause the turbidity standard to be exceeded may be authorized provided all practical turbidity control techniques have been applied and a section 401 water quality certificate has been granted.
 - a. **Monitoring:** Turbidity monitoring shall be conducted and recorded as described below. Monitoring shall occur each day during daylight hours when in-water work is being conducted. A properly and regularly calibrated turbidimeter is recommended, however, visual gauging is acceptable.
 - i. **Representative Background Point:** a sample or observation must be taken every four hours at a relatively undisturbed area approximately 100 feet upcurrent from in-water disturbance to establish background turbidity levels for each monitoring cycle. Background turbidity, location, and time must be recorded prior to monitoring downcurrent.
 - ii. **Compliance Point:** Monitoring shall occur every four hours approximately 100 feet down current from the point of discharge and be compared against the background measurement or observation. The turbidity, location, and time must be recorded for each sample.
 - b. **Compliance:** Results from the compliance points should be compared to the background levels taken during each monitoring interval. Exceedances are allowed as follows:

MONITORING WITH A TURBIDIMETER		
ALLOWABLE EXCEEDANCE TURBIDITY LEVEL	ACTION REQUIRED AT 1 ST MONITORING INTERVAL	ACTION REQUIRED AT 2 ND MONITORING INTERVAL
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 BMPs & continue to monitor every 4 hours	Stop work after 8 hours at 5-29 NTU above background
30 to 49 NTU above background	Modify BMPs & continue to monitor every 2 hours	Stop work after 2 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	Modify BMPs & continue to monitor every 4 hours	Stop work after 8 hours with an observed plume

When monitoring visually, turbidity that is visible over background is considered an exceedance of the standard.

If an exceedance over the background level occurs, the applicant must modify the activity and continue to monitor every four hours or as appropriate (above). If an exceedance over the background level continues after the second monitoring interval, the activity must stop until the turbidity levels return to background. If, however, turbidity levels return to background at second monitoring level due to implementation of BMPs or natural attenuation, work may continue with appropriate monitoring as above.

If an exceedance occurs at: 50 NTU or more over background; 30 NTU over background for 2 hours; or 5-29 NTU over background for 8 hours, the activity must stop immediately for the remainder of that 24-hour period.

- c. **Reporting:** Copies of daily logs for turbidity monitoring shall be available to DEQ, USACE, NMFS, USFWS, and ODFW upon request. The log must include: background NTUs, compliance point NTUs, comparison of the points in NTUs, and location, time, and tidal stage (if applicable) for each reading. Additionally, a narrative must be prepared discussing all exceedances with subsequent monitoring, actions taken, and the effectiveness of the actions.
- d. **BMPs to Minimize In-stream Turbidity:**
- i. Sequence/Phasing of work – The applicant will schedule work activities so as to minimize in-water disturbance and duration of in-water disturbances;
 - ii. Bucket control - All in-stream digging passes by excavation machinery and placement of fill in-stream using a bucket shall be completed so as to minimize turbidity. All practicable techniques such as 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 the load, or by using a closed-lipped environmental bucket shall be implemented;
 - iii. Limit the number and location of stream crossing events. Establish temporary crossing sites as necessary at the least impacting areas and supplement with clean gravel or other temporary methods as appropriate;
 - iv. Machinery will not drive into the flowing channel;
 - v. Excavated material will be placed so that it is isolated from the water edge or wetlands and not placed where it could re-enter waters of the state uncontrolled; and,
 - vi. Use of containment measures such as silt curtains, geotextile fabric, and silt fence will be implemented and properly maintained in order to minimize in-stream sediment suspension and resulting turbidity.

- 2) **Erosion Control:** The applicant is referred to DEQ's *Oregon Sediment and Erosion Control Manual*, April 2005. The following erosion control measures (and others as appropriate) or comparable measures as specified in an NPDES 1200-C permit (if required) shall be implemented during construction/project activities:

- a. Filter bags, sediment traps or catch basins, vegetative strips, berms, Jersey barriers, fiber blankets, bonded fiber matrices, geotextiles, mulches, wattles, sediment fences, or other measures used in combination shall be used to prevent movement of soil from uplands into waterways or wetlands;
- b. An adequate supply of materials needed to control erosion must be maintained at the project construction site;
- c. To prevent stockpile erosion, use compost berms, impervious materials or other equally effective methods, during rain events or when the stockpile site is not moved or reshaped for more than 48 hours;
- d. Erosion control measures shall be inspected and maintained daily, or more frequently as necessary, to ensure their continued effectiveness and shall remain in place until all exposed soil is stabilized;
 - i. If monitoring or inspection shows that the erosion and sediment controls are ineffective, mobilize work crews immediately to make repairs, install replacements, or install additional controls as necessary.
 - ii. Remove sediment from erosion and sediment controls once it has reached 1/3 of the exposed height of the control.
- e. Unless part of the authorized permanent fill, all construction access points through, and staging areas in, riparian or wetland areas shall use removable pads, mats, or other methods as necessary to prevent soil compaction, unless doing so would be more impactful to these or surrounding resources.
- f. Flag or fence off avoided wetlands and newly planted areas to protect from disturbance and/or erosion.
- g. Dredged or other excavated material shall be placed on upland areas with stable slopes to prevent materials from eroding back into waterways or wetlands;
- h. Sediment from disturbed areas or in any way able to be tracked by vehicles onto pavement shall not be allowed to leave the site in amounts that would reasonably be expected to enter waters of the state and impair water quality. Placement of clean aggregate at all construction entrances, and other BMPs such as truck or wheel washes if needed, will be used when earthmoving equipment will be leaving the site and traveling on paved surfaces; and,
- i. Projects which disturb one acre or more require an NPDES 1200C Storm Water Discharge Permit. Contact the appropriate DEQ regional office for more information (Contact information can be found at: <http://www.deq.state.or.us/wq/>).

3) **Post-Construction Stormwater Management for NWP activities involving impervious surfaces (NWPs 3, 14, 15, 29, 36, 39, 42)**

Stormwater discharges to waters of the state must not violate state water quality standards, including Oregon Administrative Rule (OAR) 340-041-0004, the Antidegradation Policy for Surface Water. There is a reasonable expectation that runoff from impervious surfaces will carry pollutants toward the lowest point in the landscape, which is generally a water of the state. Low Impact Development (LID) techniques to reduce amounts and concentrations of runoff leaving the project area and Best Management Practices (BMPs) targeting removal of reasonably expected pollutants (sediment, metals, hydrocarbons, nutrients, pesticides, etc.) prior to discharge of stormwater must be incorporated into project designs. A narrative and site sketch describing these LID techniques, BMPs and other stormwater

treatment options commensurate with the scale of the project will constitute a post-construction stormwater management plan which must be submitted by the applicant to DEQ for review and approval prior to construction. DEQ's *Stormwater Management Plan Submission Guidelines for Removal/Fill Permit Applications Which Involve Impervious Surfaces* (located under "Removal/Fill" at: <http://www.deq.state.or.us/wq/sec401cert/sec401cert.htm>) 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. Submission of the plan must include:

- a. A site sketch or plan view drawing indicating: the drainage flow directions; discharge locations; contours and spot elevations; location and size of impervious features (e.g., parking lots, driveways, buildings, or roads); nearest downgradient waterbody with direction of stream and surface flow, other physical features of the site, and the location and type of post-construction BMPs;
- b. A narrative description of proposed BMPs and a summary of their anticipated operation to insure adequate capacity, proper function, and appropriate design for the site such that quality, quantity, and seasonality of pre-construction hydrologic conditions are mimicked to the maximum extent practicable, based on stormwater anticipated to be generated due to project-related impervious surfaces and delivered to waters of the state. See local jurisdiction regulations and accepted stormwater manuals for detention and capacity requirements;
- c. Implementation of the plan must be concurrent with installation of impervious surfaces and include an adequate operation and maintenance plan with documentation of responsibility for maintenance by a qualified entity;
- d. If engineered structural BMPs are incorporated into the post construction stormwater management plan they must be prepared and stamped by an Oregon registered Professional Engineer (PE), and specification drawings must be submitted; or
- e. In lieu of a complete 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.

4) **Deleterious Materials:** The following conditions relating to control of hazardous, toxic and waste materials shall be observed:

- a. **Treated Wood: Ineligibility-** Projects which propose installation of chemically treated wood that will contact surface or ground water or that will be placed over water where it will be exposed to abrasion require individual, site specific review and are, therefore, **not certified by this 401 WQC.**
- b. Projects that require removal of chemically treated wood must:
 - i. Ensure that no treated wood debris falls into waters of the State. If treated wood debris falls into waters of the State, it must be removed immediately and disposed of properly.

- ii. Dispose of all treated wood debris removed during a project, including treated wood pilings, at an upland facility approved for hazardous materials of this classification. Do not leave treated wood pile(s) in the water or stacked on the streambank.
 - iii. Immediately place removed piling onto an appropriate dry storage site.
 - iv. Attempt to remove the entire temporary or permanent piling.
 - v. If complete removal is not possible, ensure that any treated wood piling to remain submerged is broken, cut, or pushed at least 3 feet below the sediment surface.
 - vi. Fill and cover holes left by each treated timber piling removed with clean, native substrates that match surrounding streambed materials. If chemically treated wood piles are removed using a vibratory hammer, ensure that holes are capped with clean fill as the pile is removed. Surrounding the pile with clean material prior to removal will allow the hole to fill in upon extraction in order to contain any undecomposed chemicals which have pooled beneath the substrate and may tend to escape upon extraction of the pile as they are less dense than the surrounding water. Clean fill must be accounted for in project description and threshold limits.
- c. Biologically harmful materials and construction debris including, but not limited to: 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 shall not be placed in waterways or wetlands. Authorized fill material must be free of these materials. The applicant must remove all foreign materials, refuse, and waste from the project area.
 - d. An adequate supply of materials needed to contain deleterious materials during a weather event must be maintained at the project site and deployed as necessary.
 - e. Machinery refueling shall not occur in waterways, wetlands, or riparian areas.

5)

Spill Prevention: Fuel, operate, maintain, and store vehicles and construction materials in areas that minimize disturbance to habitat and prevent adverse effects from potential fuel spills.

- a. Complete vehicle staging, cleaning, maintenance, refueling, and fuel storage in a vehicle staging area placed 150 feet or more from any waters of the state. An exception to this distance can be made if all practicable prevention and containment measures [as in 5) b through e below, or others] are employed and this distance is not possible because of any of the following site conditions:
 - i. Physical constraints that make this distance not feasible (e.g., steep slopes, rock outcroppings);
 - ii. Natural resource features would be degraded as a result of this setback, or,
 - iii. Either no contaminants are present or full containment of potential contaminants to prevent soil and water contamination is provided;
- b. Inspect all vehicles operated within 150 feet of any waters of the State daily for fluid leaks before leaving the vehicle staging area. Repair any leaks detected in the vehicle staging area before the vehicle resumes operation;
- c. Before operations begin and as often as necessary during operation, steam

clean (or an approved equal) all equipment that will be used below bankfull elevation until all visible external oil, grease, mud, and other visible contaminants are removed;

- d. Diaper all stationary power equipment (e.g., generators, cranes, stationary drilling equipment) operated within 150 feet of any waters of the state to prevent leaks, unless other suitable containment is provided to prevent potential spills from entering any waters of the state; and,
- e. An adequate supply of materials (such as straw matting/bales, geotextiles, booms, diapers, and other absorbent materials) needed contain spills must be maintained at the project construction site and deployed as necessary.

6) **Spill & Incident Reporting:**

- a. In the event that petroleum products, chemicals, or any other deleterious materials are discharged into state waters, or onto land with a potential to enter state waters, the discharge shall be promptly reported to the Oregon Emergency Response Service (OERS, 1-800-452-0311). Containment and cleanup must begin immediately and be completed as soon as possible.
- b. If the project operations causes a water quality problem which results in distressed or dying fish, the operator shall immediately: cease operations; take appropriate corrective measures to prevent further environmental damage; collect fish specimens and water samples; and notify DEQ, ODFW, NMFS and USFWS as appropriate.

7) **Vegetation Protection and Restoration:** Riparian, wetland, and shoreline vegetation in the authorized project area shall be protected from unnecessary disturbance to the maximum extent practicable through:

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

If authorized work results in unavoidable vegetative disturbance; riparian, wetland, and shoreline vegetation shall be successfully reestablished to function for water quality benefit at pre-project levels or improved, at the completion of the authorized work.

8) **Project Thresholds:**

- a. Project applications must be complete and account for total impacts at build-out regardless of construction phasing. Projects may not be phased to avoid exceeding USACE or DEQ imposed threshold limitations of wetland impact or cubic yards of material removal or fill; and,
- b. Impacts to wetlands and waters of the state for a project are additive relative to the thresholds for eligibility.

9) DEQ is to have site access upon reasonable request.

10) This WQC is invalid if the project is operated in a manner not consistent with the project description contained in the permit application materials.

- 11) A copy of this WQC letter shall be kept on the job site and readily available for reference by the USACE, DEQ personnel, the contractor, and other appropriate state and local government inspectors.
- 12) DEQ reserves the option to modify, amend or revoke this WQC, as necessary, in the event new information indicates that the project activities are having a significant adverse impact on State water quality or critical fish resources.

Activity Specific Conditions

In addition to all conditions of the USACE permit and the 401 WQC General Conditions above, the following conditions apply to specific categories of authorized activities.

~~**NWP 12 – Utility Lines:** This WQC does not authorize the construction of substations or permanent access roads for utility lines in waters of the state including wetlands.~~

- ~~1. All stream permanent or temporary crossings must be made perpendicular to the bankline, or nearly so, and at the narrowest, or least sensitive, portion of the wetland or riparian corridor.~~
- ~~2. Directionally bored stream crossings:
 - ~~a. Drilling Discharge- All drilling equipment, drill recovery and recycling pits, and any waste or spoil produced, will 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 unavoidably 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. Prior to cleanup, plans must be submitted and approved by the regulatory agencies;~~
 - ~~c. When drilling is completed, attempts will be made to remove the remaining drilling fluid from the sleeve (e.g., by pumping) to reduce turbidity when the sleeve is removed; and,~~
 - ~~d. An adequate supply of materials needed to control erosion and/or to contain drilling fluids must be maintained at the project construction site and deployed as necessary.~~~~
- ~~3. Utility lines through wetlands must be fitted with trench plugs to avoid dewatering wetlands.~~

~~**NWP 13 – Bank Stabilization:**~~

- ~~1. **Ineligibility:** The following streambank stabilization activities require individual 401 WQC or additional conditions approved by DEQ.
 - ~~a. Bank stabilization projects in excess of 500 feet.~~
 - ~~b. Permanent placement of material in wetlands adjacent to a stabilization project.~~
 - ~~c. Placement of new vertical structures such as retaining walls, bulkheads, gabions or similar structures; or placement of rock in constructed stream channel trenches where bioengineering is not a feature of the project, with the following exceptions:~~~~

- i. Rock as ballast to anchor or stabilize large woody debris components of an approved bank treatment.
- ii. Rock to fill scour holes, as necessary to protect the integrity of the stabilization project, if the rock is limited to the depth of the scour hole and does not extend above the channel bed.
- iii. Rock to construct a footing, facing, head wall, or other protection necessary to prevent scouring or downcutting of, or slope erosion or failure at, an existing structure (e.g., culvert, utility line, roadway or bridge support) to be repaired.
- iv. Rock or vertical structures in projects maintaining existing transportation related structures when a registered professional engineer identifies these as the only effective method due to site specific geotechnical or hydraulic concerns.

For projects meeting eligibility or an exception as listed above (in 1. i. through iv.), the applicant shall:

2. Identify potential adverse impacts of bank stabilization on water quality parameters and beneficial uses both upstream and downstream of the activity site, and show how these have been avoided, minimized or mitigated.
3. Provide site design and construction features that avoid, then minimize, then mitigate for the adverse impacts of bank stabilization. Appropriate design features include use of biodegradable project materials, riparian vegetation, and woody debris.
4. When rock is necessary, it must be appropriately sized for stability, clean, durable, angular, and include interstitial plantings unless the permittee can demonstrate that such plantings are not practicable.
5. Provide mitigation approved by DEQ for lost or reduced water quality function.

~~**NWP 16 – Return Water from Contained Upland Disposal Areas:** Return water from material known to contain contaminants in dissolved form at levels which exceed chronic water quality criteria (OAR 340-041-0033, Tables 20, 33A, and 33B, see: <http://www.deq.state.or.us/regulations/rules.htm>) are **not certified under this 401 WQC.**~~

- ~~1. For all materials removed from wetlands and waterways during authorized activities which has been determined to be suitable for in-water disposal, all practicable efforts to return to waters or beneficially reuse all excess material shall be undertaken prior to disposing in upland areas.~~
- ~~2. Upland disposal of materials must conform to existing DEQ solid waste and contaminant requirements which include an appropriately located and designed confined disposal facility and implementation of all practicable measures to prevent material discharge and uncontrolled return water discharge to waterways and wetlands.~~
- ~~3. Upland disposal facilities must receive a DEQ Solid Waste Letter of Authorization or written notice of exemption prior to disposal taking place there. Contact DEQ Land Quality in the regional office covering project area (800-452-4011).~~

NWP 33 – Temporary Construction, Access, and Dewatering: Refer to Appendix D of DEQ's *Oregon Sediment and Erosion Control Manual*, April 2005, for proper dewatering and work area isolation techniques. Minimize general disturbance to existing vegetation and water quality by:

1. Using low impact equipment (e.g., spider hoe, crane);

2. Using existing roadways, travel paths, and drilling pads;
3. Clearing vegetation which must be removed only to ground level (no grubbing);
4. Placing clean gravel over geotextile fabric for access ways;
5. Minimizing the number of temporary stream crossings and locating them in the least impactful areas;
6. Constructing temporary crossings of riparian areas and streams at right angles to the main channel;
7. Obliterating all temporary access roads that will not be incorporated into the permanent structure and restoring those areas;
8. Stabilizing any exposed soil; and,
9. Revegetating the site.

~~NWP 38 – Cleanup of Hazardous and Toxic Waste:~~

- ~~1. Dewatering of toxic material dredged from in-stream shall not occur over un-isolated waters of the state. Containment of toxics laden return water must be provided such that proper disposal or adequate treatment prior to controlled release back to waters of the state may be accomplished.~~
- ~~2. Upland disposal facilities must receive a DEQ Solid Waste Letter of Authorization or written notice of exemption prior to disposal taking place there. Contact DEQ Land Quality in the regional office covering project area (800-452-4011).~~

~~NWP 41 - Reshaping Existing Drainage Ditches:~~ The linear threshold for reshaping drainage ditches under any NWP is 500 feet. **~~All projects exceeding the 500 feet threshold require individual 401 WQC or additional conditions approved by DEQ.~~** For projects within the 500 feet threshold, the applicant shall:

- ~~1. Work from only one bank in order to minimize disturbance to existing vegetation, preferably the bank with the least existing vegetation;~~
- ~~2. Preserve the existing vegetation to the maximum extent practicable;~~
- ~~3. Establish in-stream and riparian vegetation on reshaped channels and side channels wherever practicable. Such plantings shall be targeted to address water quality parameters (e.g., provide shade to water to reduce temperature or provide bank stability through root systems to limit sediment inputs). Planting options include clustering or vegetating only one side of a channel, preferably the side which provides maximum shade.~~



Oregon

Theodore R. Kulongoski, Governor

Ocean and Coastal Management Program

Department of Land Conservation and Development

635 Capitol Street, Suite 150

Salem, Oregon 97301-2540

Phone (503) 373-0050

FAX (503) 378-6033

www.oregon.gov/LCD/OCMP

June 9, 2009

Mr. Al Doelker
Bureau of Land Management
333 SW First Avenue
PO Box 2965
Portland, OR 97208

Mr. Scott Peets
US Forest Service
333 SW First Avenue
PO Box 3623
Portland, OR 97208

Action: Projects authorized under NWP-2007-999
Agency: US Forest Service (USFS) and Bureau of Land Management (BLM)
Location: Federal and non-Federal lands in Oregon
Description: Aquatic restoration projects, as defined by NWP-2007-999

Dear Mr. Doelker and Mr. Peets:

The Department of Land Conservation and Development (DLCD) has considered your consistency determination (ref 15 CFR 930.34) for the above referenced proposed activities with respect to the Oregon Coastal Management Program (OCMP). To be consistent with the OCMP, the proposed activities must be consistent to the maximum extent practicable with: 1) the statewide planning goals; 2) the applicable acknowledged city or county comprehensive plan; and 3) selected state authorities (e.g. those governing removal-fill, water quality, and fish & wildlife protections).

Findings

- The BLM and the USFS have not submitted a formal consistency determination. This action has been discussed in conference calls between the USFS, BLM, Corps of Engineers, and the OCMP.
- The BLM and the USFS are not asserting any provision of federal law which would prohibit full consistency with the OCMP. (ref 15 CFR 930.32(a)(2))
- The USFS and BLM intend all project completed under this Regional General Permit to be beneficial to the aquatic and terrestrial environments.

*OCMP CONDITIONS
ATTACHMENT 4*

- Projects completed under this Regional General Permit will occur on and off USFS and BLM land. Projects occurring on USFS and BLM lands are not in the Oregon Coastal Zone. (ref 15 CFR 930.11(e))
- Projects completed under this Regional General Permit may or may not have reasonably foreseeable direct and indirect effects on any coastal use or resource. (ref 15 CFR 930.33(a)(1))
- The DLCD has accepted the Joint Permit Application for NWP-2007-999 as a complete description of the proposed activities for the purposes of a consistency certification under 15 CFR 930.34.
- The statewide planning goals do not apply directly in this case. The goals are implemented through the applicable local comprehensive plans and ordinances.
- The Department of State Lands has issued permit 42104 for the proposed activities.
- Qualifying projects will use an already issued Department of the Army general permit that includes Endangered Species Act (ESA) and Essential Fish Habitat (EFH) consultation, and State clean water certification.

The authorization by the Corps of Engineers, permit NWP-2007-999, is not subject to consistency review (15 CFR 930.52). This consistency decision has been made pursuant to 15 CFR 930, Subpart C, and shall apply to work performed by or on behalf of the US Forest Service or the Bureau of Land Management. (ref 15 CFR 930.31(a)) For the purposes of Subpart C, authorized activities, including projects funded through the Wyden Amendment, are considered federal “development projects.” (ref 15 CFR 930.31(b))

Situations for the Regional General Permit

From the perspective of the Oregon Coastal Management Program (OCMP), the projects contemplated by the USFS and BLM may occur in four distinct situations. First, the project may occur on federal lands and have no reasonably foreseeable direct and indirect effects on any coastal use or resource. Second, projects may occur on federal lands but include reasonably foreseeable direct and indirect effects on a coastal use or resource. Finally, projects may occur within the Oregon Coastal Zone. Those projects may be conducted by federal or non-federal actors.

Projects occurring on federal lands that *do not* have reasonably foreseeable direct and indirect effects on any coastal use or resource in the coastal zone *do not* fall under the authority of the OCMP. (15 CFR 930.33(a)(2))

Projects which occur on federal lands that *do* have reasonably foreseeable direct and indirect effects on a coastal use or resource in the coastal zone “shall consider the enforceable policies of [the OCMP] as requirements to be adhered to....” (15 CFR 930.32(a)(2))

///

Finally, projects which occur off federal lands are presumed to have reasonably foreseeable direct and indirect effects on coastal uses or resources in the coastal zone. Projects in the coastal zone which are conducted by federal agencies are distinct from projects conducted by non-federal actors using federal funds.

To summarize, the four cases are:

1. Projects on federal lands with no reasonably foreseeable direct and indirect effects.
2. Projects on federal lands with reasonably foreseeable direct and indirect effects.
3. Projects off federal land conducted by federal agencies.
4. Projects off federal lands conducted by non-federal actors.

Consistency with the OCMP

In the second, third and fourth instances above, each project shall, to be consistent with the “maximum extent practicable” standard of 15 CFR 930.32, demonstrate its consistency with the OCMP by fulfilling each of the seven (7) conditions given in Appendix A of this letter. The determination of reasonably foreseeable direct and indirect effects on any coastal use or resource is the responsibility of the individual federal agencies. In Appendix B, the OCMP provides some suggestions regarding which of the proposed classes of activity are most likely to have an impact beyond federal lands. To avoid confusion over the interpretation of “reasonably foreseeable direct and indirect effects on any coastal use or resource,” the DLCD recommends that all projects undertaken under this RGP satisfy the conditions given in Appendix A.

Pursuant to the applicant’s compliance with the conditions given in Appendix A of this letter, DLCD concurs with the USFS and BLM’s certification that the proposed activities are consistent with the Oregon Coastal Management Program. *Failure to obtain and abide by required local, state, or federal permits may compromise this consistency finding.*

RIGHT OF APPEAL (TO OBJECTION OR SPECIAL CONDITIONS)

Pursuant to 15 CFR 930, Subpart H, and within 30 days from receipt of this letter, the applicants, collectively or individually, may request that the Secretary of Commerce override our objection/special condition. In order to grant an override request, the Secretary must find that the activity is consistent with the objectives or purposes of the Coastal Zone Management Act, or is necessary in the interest of national security. A copy of the request and supporting information must be sent to the Oregon coastal management program and the federal permitting or licensing agency. The Secretary may collect fees from the applicant for administering and processing their request. (15 CFR 930.63)

///

If you have any questions or comments regarding this coastal zone management consistency finding, the consistency review process, or the Oregon Coastal Management Program, please contact me at 503-373-0050 ext. 253 or by e-mail at: jay.charland@state.or.us

Sincerely,

Jay Charland
Coastal Permits Coordinator

cc: Ms. Alex Cyril, DEQ, 811 SW 6th Ave, Portland, OR 97204-1390
Mr. Kevin Herkamp, DSL, 775 Summer St NE, Salem, OR 97301
Ms. Judy Linton, US Army Corps of Engineers, PO Box 2946, Portland, OR 97208-2946
OCMP File

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Appendix A

CZM Conditions for projects conducted under NWP-2007-999

CZ Condition 1. Consistency with Local Comprehensive Plans.

(1) Authorization for projects in or affecting Oregon's coastal zone under this permit is valid only if the proposed project is consistent with or not subject to the applicable local comprehensive plan and implementing land use regulations, or to the statewide land use planning goals where applicable. Permits or other authorizations must be obtained, when required, from the applicable local government before work is initiated under this permit. Verification of the local jurisdiction's decision must be given to the Corps of Engineers. All appeals of the local jurisdiction's decision(s) must be resolved before any regulated work may begin.

(2) All conditions placed on an authorization or permit by the local government are incorporated by reference into the conditions for consistency concurrence by the Oregon Coastal Management Program.

CZ Condition 2. Consistency with Removal-Fill Law.

(1) Authorization for projects in Oregon's coastal zone under this permit is valid only if the proposed project is consistent with or not subject to the state statutes for state lands and removal-fill in waters of the state. Unless the project is exempt under state law, permits or other authorizations must be obtained from the Oregon Department of State Lands (DSL) before any regulated work may begin.

(2) For projects found not subject to the Removal/Fill Law by DSL, any changes in project design or implementation which may reasonably be expected to require application of the Removal/Fill Law shall be submitted to DSL for review.

(3) All conditions placed on a Removal-Fill permit by the Oregon Department of State Lands are incorporated by reference into the conditions for consistency concurrence by the Oregon Coastal Management Program.

CZ Condition 2a. Leases of State Lands.

(1) Authorization for projects in Oregon's coastal zone under this permit is valid only if the proposed project has obtained any required lease or other license required for the use of state lands or waters. Permits or other authorizations must be obtained when required from the Oregon Department of State Lands (DSL) before any regulated work may begin.

(2) All conditions placed on a lease, license, or authorization by the Oregon Department of State Lands are incorporated by reference into the conditions for consistency concurrence by the Oregon Coastal Management Program.

CZ Condition 3. Department of Environmental Quality.

- (1) Authorization for a project in or affecting Oregon's coastal zone under this permit is valid only if the proposed project has been certified or does not require certification by the Oregon Department of Environmental Quality (DEQ) through its 401 Water Quality Certification process.
- (2) All conditions placed on a DA license, permit, or authorization by the Oregon Department of Environmental Quality are incorporated by reference into the conditions for consistency concurrence by the Oregon Coastal Management Program.
- (3) If the Corps of Engineers determines that a project is covered by an existing Nationwide Permit which has been certified by the DEQ, that certification is valid for the purposes of federal consistency.

CZ Condition 4. In-Water Work.

- (1) All in-water work, including temporary fills or structures, shall occur within the ODFW recommended period for in-water work for the affected water body. Exceptions to the recommended time periods require specific approval from the Corps, and:
 - (i) The US Forest Service and/or BLM shall coordinate exceptions to work windows with ODFW and NMFS (NOAA Fisheries), as necessary. Decisions to not apply ODFW or NMFS work windows shall be accompanied by written approval from ODFW;
 - (ii) On tribal lands, the US Forest Service and/or BLM shall coordinate exceptions with the EPA.
- (2) Condition #10 of Attachment A of DSL permit number 42104, as issued on May 21, 2009 is hereby incorporated by reference.

CZ Condition 5. Fish and Aquatic Life Passage.

- (1) Where applicable, all authorized projects shall be in conformance with ODFW standards for fish passage (<http://www.dfw.state.or.us/fish/passage/>). Decisions to abrogate ODFW fish passage standards shall be accompanied by written approval from ODFW.
- (2) No work shall be authorized that does not provide for adequate passage of "aquatic life." Aquatic life shall be interpreted to include amphibians, reptiles, and mammals whose natural habitat includes waters of this state and which are generally present in or around, or pass through the project site.
- (3) This condition is effective only where ODFW regulations apply.

CZ Condition 6. Heavy Equipment Use

- (1) Heavy equipment shall be operated from the bank, and not placed in a stream or wetland unless specifically authorized. In-stream work may be authorized by the Project Specialist (as defined in Appendix II to the JPA) if necessary in the interest of safety or due to site conditions

prohibiting work from the bank.

(2) This condition is effective only in situations where the Removal-Fill Law applies.

CZ Condition 7. Collateral Damage

(1) Permittees shall be required to repair, restore, or mitigate for any and all impacts within or impacting waters of the state which occur in the course of the work, including those beyond the scope of the permitted work, whether intentional or unintentional, including those impacts due to accident, misinterpretation, or misunderstanding.

(2) This condition is effective only in situations where the Removal-Fill Law applies.

Appendix B

15 CFR 930.33 Guidance for projects conducted under NWP-2007-999

The Oregon Coastal Management Program (OCMP) has previously identified classes of activities outside the coastal zone considered to have a direct impact on the coastal zone (OCMP 1987, p 54). These activities include:

- Road construction and maintenance;
- Activities affecting or altering surface water runoff quantity or quality;
- Dredge, fill, or development in coastal waters and wetlands;
- Alteration of scenic qualities visible from outside federal property;
- Management of fish and wildlife which passes through federal lands.

For each of the project types listed in the JPA, specific considerations a Project Specialist might take into account when considering whether the project is likely to have impacts to the coastal zone are given below. This information is offered as guidance only. DLCD expects the Federal agency to follow 15 CFR 930.33 *et seq* in making its determinations and contacting the relevant state and local regulatory agencies (e.g., the county planning office, the Department of Fish and Wildlife, the Department of State Lands) before commencing any action expected to impact the coastal zone.

Large Wood, Boulder, and Gravel Placement

Considerations: Local flooding; release of debris downstream, changes to hydrology

Reconnection of Existing Side Channels and Alcoves

No specific guidance

Headcut Stabilization and Associated Fish Passage

No specific guidance

Streambank Stabilization

Considerations: Increased erosion or deposition up or down stream from project site; impairment of fishing spot.

Fish Passage Culvert and Bridge Projects

No specific guidance

Irrigation Screen Installation and Replacement & Weir Removal

No specific guidance

Floodplain Overburden Removal

No specific guidance

Reduction of Recreation Impacts

Considerations: Complete loss of recreational opportunities (off Federal lands)

Riparian Exclusion Fencing that include Stream Crossings and Water Gaps

No specific guidance

Riparian Planting

No specific guidance

Road Treatments

Considerations: Loss of recreational opportunities (off Federal land)

Removal of Legacy Structures

Considerations: Loss of historic/cultural resources

Riparian Juniper Treatment

No specific guidance