

MEMORANDUM FOR RECORD

SUBJECT: Department of the Army Environmental Assessment and Statement of Findings for the Above-Referenced Regional General Permit

This document constitutes the Environmental Assessment, 404(b)(1) Guidelines Evaluation, as applicable, Public Interest Review, and Statement of Findings for the subject permit.

1.0 Introduction and Overview: Information about the proposal subject to one or more of the U.S. Army Corps of Engineers' (Corps) regulatory authorities is provided in Section 1, detailed evaluation of the activity is found in Sections 2 through 11 and findings are documented in Section 12 of this memorandum. Further, summary information about the activity including administrative history of actions taken during project evaluation is attached (ORM2 Summary) and incorporated in this memorandum.

1.1 Applicant: The applicant will be the individual project proponent for each project.

1.2 Activity location: Projects will occur within the boundary of the Columbia River Basin within the state of Oregon. The boundary is shown in Attachment 3 of the permit instrument.

1.3 Description of activity requiring permit: The BPA is requesting reauthorization of a modified RGP-6. Under a reauthorized RGP-6, the BPA proposes to fund projects under nine habitat restoration 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 predictable as to their effects and consistent with broad scale aquatic conservation strategies and the best available science.

The initial version of RGP-6 (issued October 2011) authorized five habitat restoration categories. The categories were reorganized and expanded into the current list of nine proposed categories.

The program administration requirements and general aquatic conservation measures that apply to all nine activity categories, as well as the project-specific project conservation measures are provided as Attachment 1 of the permit instrument. A general discussion of each activity category is provided below.

1. Fish Passage Restoration.

(a) Dams, Water Control Structures, or Legacy Structures Removal. BPA

proposes to fund and review fish passage projects, and restore more natural channel and flow conditions by removing small dams, channel-spanning weirs, earthen embankments, subsurface drainage features, spillway systems, tide gates, outfalls, pipes, instream flow redirection structures (e.g., drop structure, gabion, groin), or similar devices used to control, discharge, or maintain water levels.

Small dams include instream structures (i) up to 15 feet in height for streams with a slope less than 4%, or (ii) up to 16.4 feet in height for streams with a slope greater than 4%.

If the structure being removed contains material (i.e. large wood, boulders, etc.) that is typically found within the stream or floodplain at that site, the material can be reused to implement habitat improvements.

(b) Consolidate or Replace Existing Irrigation Diversions. BPA proposes to fund and review the consolidation or replacement of existing diversions with pump stations or engineered riffles (including cross vanes, "W" weirs, or "A" frame weirs) to reduce the number of diversions on streams and thereby conserve water and improve habitat for fish, improve the design of diversions to allow for fish passage and adequate screening, or reduce the annual instream construction of push-up dams and instream structures.

The RGP will only cover irrigation efficiency actions within this activity category that use state approved regulatory mechanisms (e.g. Oregon ORS 537.455-.500) for ensuring that water savings will be protected as instream water rights, or in cases where project implementers identify how the water conserved will remain instream to benefit fish without any significant loss of the instream flows to downstream diversions.

Unneeded or abandoned irrigation diversion structures will be removed where they are barriers to fish passage, have created wide shallow channels or simplified habitat, or are causing sediment concerns through deposition behind the structure or downstream scour.

(c) Headcut and Grade Stabilization. BPA proposes to fund and review the restoration of fish passage and grade control (i.e. headcut stabilization) with geomorphically appropriate structures constructed from rock or large wood (LW). Boulder weirs and roughened channels may be installed for grade control at culverts to mitigate headcuts, and to provide passage at small dams or other channel obstructions that cannot otherwise be removed. For wood dominated systems, grade control engineered log jams (ELJ)'s should be considered as an alternative.

Grade control ELJs are designed to arrest channel downcutting or incision and retain sediment, lower stream energy, and increase water elevations to reconnect floodplain habitat and diffuse downstream flood peaks. Grade control ELJs also serve to protect infrastructure that is exposed by channel incision and to stabilize over-steepened banks. Unlike hard weirs or rock grade control structures, a grade control ELJ is a complex broadcrested structure that dissipates energy more gradually.

If geomorphic conditions are appropriate, consideration should be given towards use of a roughened channel or constructed riffle to minimize the potential for future development of passage (jump height) barrier. Construction of passage structures is limited to facilitate passage at existing diversion dams of less than seven feet in height, not in combination with new dams.

(d) Low Flow Consolidation. BPA proposes to fund and review projects that (i) modify diffused or braided flow conditions that impede fish passage; (ii) modify dam aprons with shallow depth (less than 10 inches); or (iii) utilize temporary placement of sandbags, hay bales, and ecology blocks to provide depths and velocities passable to upstream migrants.

(e) Provide Fish Passage at an Existing Facility. BPA proposes to fund and review projects that (i) re-engineer fish passage or fish collection facilities that are improperly designed; (ii) conduct periodic maintenance of fish passage or fish collection facilities to ensure proper functioning, e.g., cleaning debris buildup, replacement of parts; and (iii) involve installation of a fish ladder at an existing facility.

(f) Bridge and Culvert Removal or Replacement. Removing or replacing existing culverts and bridges. When replacing an existing culvert with a new crossing the preferred methods of replacement are:

- i) Bridge
- ii) Open bottom culvert (streambed simulation)
- iii) Closed bottom culvert

New culverts can only be built when an existing crossing was present.

(g) Bridge and Culvert Maintenance. BPA proposes to fund the redress or return of a bridge or culvert to its as-built conditions within its original footprint.

(h) Installation of Fords. In many streams, crossings have degraded riparian corridors and in-stream habitat resulting in increased and chronic sedimentation and reduced riparian functions including shading and recruitment of LW. Fords will be installed to allow improved stream crossing conditions only. New fords shall not be installed when there was not a previously existing stream crossing and no new fords will be constructed in salmonid spawning areas (including spawning and rearing habitat for bull trout). For the purposes of this proposed action, fords are defined as crossings for vehicles, off-highway vehicles (OHVs), bikes, pack animals, and livestock.

2. River, Stream, Floodplain, and Wetland Restoration.

(a) Improve Secondary Channel and Floodplain Interactions. BPA proposes to review and fund projects that reconnect historical stream channels within floodplains; restore or modify hydrologic and other essential habitat features of historical river floodplain swales, abandoned side channels, spring-flow channels, wetlands, and historical floodplain channels; and create new self-sustaining side channel habitats which are maintained through natural processes.

(b) Set-back or Removal of Existing Berms, Dikes, and Levees. BPA proposes to review and fund projects that reconnect estuary, stream and river channels with floodplains, increase habitat diversity and complexity, moderate flow disturbances, and provide refuge for fish during high flows by either removing existing berms, dikes or levees or increasing the distance that they are set back from active streams or wetlands. This action includes the removal of fill, such as dredge spoils from past channelization projects, road, trail, and railroad beds, dikes, berms, and levees to restore natural estuary and fresh-water floodplain functions.

Techniques that are covered by this programmatic need to have the sole purpose of restoring floodplain and estuary functions or to enhance fish habitat. Covered actions in freshwater, estuarine, and marine areas include: i) full and partial removal of levees, dikes, berms, and jetties; ii) breaching of levees, dikes, and berms; iii) lowering of levees, dikes, and berms; iv) setback of levees, dikes, and berms; and v) removal of spoils piles from the floodplain.

(c) Protect Streambanks Using Bioengineering Methods. BPA proposes to review and fund projects that restore eroding streambanks by bank shaping and installation of coir logs or other soil reinforcements and include bioengineering techniques as necessary to support development of riparian vegetation and/or planting or installing large wood, trees, shrubs, and herbaceous cover as necessary to restore ecological function in riparian and floodplain habitats.

As techniques that are covered by this programmatic need to have the primary purpose of restoring floodplain and estuary functions or to enhance fish habitat, streambank stabilization shall only be proposed when there are additional interrelated and interdependent habitat restoration actions.

The primary proposed structural streambank stabilization action is the use of large wood and vegetation to increase bank strength and resistance to erosion in an ecological approach to engineering streambank stabilization.

(d) Install Habitat-Forming Natural Material Instream Structures. BPA proposes to review and fund projects that include placement of natural habitat forming structures to provide instream spawning, rearing and resting habitat for salmonids and other aquatic species. Projects will provide high flow refugia; increase interstitial spaces for benthic organisms; increase instream structural complexity and diversity including

rearing habitat and pool formation; promote natural vegetation composition and diversity; reduce embeddedness in spawning gravels and promote spawning gravel deposition; reduce siltation in pools; reduce the width/depth ratio of the stream; mimic natural input of LW (e.g., whole conifer and hardwood trees, logs, root wads); decrease flow velocities; and deflect flows into adjoining floodplain areas to increase channel and floodplain function. In areas where natural gravel supplies are low (immediately below reservoirs, for instance), gravel placement can be used to improve spawning habitat.

(e) Riparian and Wetland Vegetation Planting. BPA proposes to fund vegetation planting to recover watershed processes and functions associated with native plant communities and that will help restore natural plant species composition and structure. Under this activity category, project proponents would plant trees, shrubs, herbaceous plants, and aquatic macrophytes to help stabilize soils. Large trees such as cottonwoods and conifers will be planted in areas where they historically occurred but are currently either scarce or absent. Native plant species and seeds will be obtained from local sources to ensure plants are adapted to local climate and soil chemistry.

Vegetation management strategies will be utilized that are consistent with local native succession and disturbance regimes and specify seed/plant source, seed/plant mixes, and soil preparation. Planting will address the abiotic factors contributing to the sites' succession, i.e., weather and disturbance patterns, nutrient cycling, and hydrologic condition. Only certified noxious weed-free seed (99.9%), hay, straw, mulch, or other vegetation material for site stability and revegetation projects will be utilized.

(f) Channel Reconstruction. BPA proposes to review and fund channel reconstruction projects to improve aquatic and riparian habitat diversity and complexity, reconnect stream channels to floodplains, reduce bed and bank erosion, increase hyporheic exchange, provide long-term nutrient storage, provide substrate for macroinvertebrates, moderate flow disturbance, increase retention of organic material, and provide refuge for fish and other aquatic species by reconstructing stream channels and floodplains that are compatible within the appropriate watershed context and geomorphic setting.

The reconstructed stream system shall be composed of a naturally sustainable and dynamic planform, cross-section, and longitudinal profile that incorporates unimpeded passage and temporary storage of water, sediment, organic material, and species. Stream channel adjustment over time is to be expected in naturally dynamic systems and is a necessary component to restore a wide array of stream functions. It is expected that for most projects that there will be a primary channel with secondary channels that are activated at various flow levels to increase floodplain connectivity and to improve aquatic habitat through a range of flows. This proposed action is not intended to artificially stabilize streams into a single location or into a single channel for the purposes of protecting infrastructure or property.

Channel reconstruction consists of re-meandering or movement of the primary active channel, and may include structural elements such as streambed simulation materials,

streambank restoration, and hydraulic roughness elements. For bed stabilization and hydraulic control structures, constructed riffles shall be preferentially used in pool-riffle stream types, while roughened channels and boulder weirs shall be preferentially used in step-pool and cascade stream types. Material selection (large wood, rock, gravel) shall also mimic natural stream system materials.

(g) Beaver Habitat Restoration. Includes installation of in-channel structures to mimic beaver dams (Beaver Dam Analogues (BDA)). The structures are intended to entrain substrate, aggrade the channel, reconnect the stream to the floodplain, and increase riparian vegetation. BDAs shall include a Monitoring and Adaptive Management Plan. Beaver dam support structures will be placed in areas conducive to dam construction as determined by stream gradient or historical beaver use. Planting of native riparian hardwoods as described under the Riparian and Wetland Vegetation Planting activity may be done to more quickly provide food sources that will further encourage beaver occupancy.

There are three types of BDAs currently used in restoration projects:

Reinforced Existing/ Abandoned Dams: This is the simplest type of BDA, intended to elongate the effectiveness of an existing beaver dam, or prevent abandoned dams from falling apart and clogging downstream infrastructure (i.e. culverts). Reinforced dams are created by pounding posts vertically into the dam on the downstream side, 0.5 to 1 meter apart, as deeply as possible—preferably 1 meter or more.

Starter Dams: These BDAs are designed for the immediate creation of an upstream pool, either to attract local beavers or rapidly create habitat for the release of translocated beavers. Starter dams are constructed with vertical wooden posts that are pounded into the stream bed, usually with a hydraulic post pounder, 0.5 meters apart across the width of the channel. Posts are then interwoven with fresh branches and twigs (usually willow) to create a highly permeable dam. Permeability is reduced to create pools through the natural recruitment of sediment and vegetation to the upstream surface of the dam, which also may prevent mobilization of the upstream bed and related scour failures. A well-constructed starter dam will distribute flow evenly across its width.

Post Lines with Wicker Weaves (PLWW): Constructed similarly to starter dams, PLWW are complete in the highly permeable stage of posts and branches. These BDAs are most effective in streams with high loads of fine sediment, which are expected to deliver enough sediment and organic matter to 'self-seal' over time. PLWWs require significantly less effort than traditional starter dams, which allows for cost-effective placement of multiple structures.

3. Invasive Plant Control.

(a) Manage Vegetation Using Physical Control. BPA proposes to use two mechanisms for vegetation management by physical control: (a) Manual control

includes hand pulling and grubbing with hand tools; bagging plant residue for burning or other proper disposal; mulching with organic materials; shading or covering unwanted vegetation; controlling brush and pruning using hand and power tools such as chain saws and machetes; using grazing goats. When possible, manual control (e.g., hand pulling, grubbing, cutting) will be used in sensitive areas to avoid adverse effects to listed species or water quality. (b) Mechanical control includes techniques such as mowing, tilling, disking, or plowing. Mechanical control may be carried out over large areas or be confined to smaller areas (known as scalping).

(b) Manage Vegetation Using Herbicides (River System). BPA proposes to fund management of vegetation using chemical herbicides to recover watershed processes and functions associated with native plant communities in fluvial systems. Herbicides will be applied in liquid or granular form using wand or boom sprayers mounted on or towed by trucks, backpack equipment containing a pressurized container with an agitation device, injection, hand wicking cut surfaces, and ground application of granular formulas. Aerial treatment is not proposed to be covered under this consultation

(c) Manage Vegetation Using Herbicides (Estuarine Systems). Invasive plant treatments in tidally influenced areas are proposed within tidal wetlands and areas below the Ordinary High Water (OHW). Treatment areas below the OHW have been subdivided into High Marsh, Low Marsh, and Tidal Flat as each area has differing inundation levels and therefore delivery routes to surface waters. High marsh tidal areas are subject to seasonal inundation, mainly in winter and are often dry during the summer months. Low Marsh areas are below mean high water and are subject to daily to semi-daily tidal influence. While application to open water is not proposed within the tidal flats, emergent vegetation such as knotweed and aquatic bed species such as yellow flag iris may be present in permanently inundated areas. These areas shall be treated by hand wiping or wicking or mechanical methods only.

The various treatment methodologies, proposed herbicides, timing, and acreage limit are illustrated in the HIP. In High Marsh Areas, there are a larger amount of proposed herbicides and a larger acreage limit. However herbicide application shall be limited to be between July-October. If application must occur between November-July, only glyphosate and imazapyr shall be used with a minimum dry time of 4 hours for imazapyr and glyphosate prior to tidal inundation.

In the low tidal marsh, only glyphosate and imazapyr shall be used with a minimum dry time of 4 hours prior to tidal inundation. Episodic flow events shall be monitored and avoided. In tidal flats/aquatic beds no application of herbicides over standing waters is proposed. However, treatment of emergent vegetation using hand application or mechanical treatments shall occur.

(d) Juniper Removal. This restoration action will be conducted in riparian areas and adjoining uplands to help restore plant species composition and structure that would occur under natural fire regimes. Juniper removal will occur in those areas where juniper have encroached into riparian areas as a result of fire exclusion, thereby

replacing more desired riparian plant species such as willow, cottonwood (*Populus spp.*), aspen (*Populus tremuloides*), alder (*Alnus spp.*), sedge, and rush.

4. Piling Removal. Removal of piles in water following steps to minimize creosote release, sediment disturbance, and total suspended solids.

5. Road and Trail Maintenance and Decommissioning.

(a) Road Maintenance. BPA proposes to fund road maintenance activities, including: (i) creating barriers to human access: gates, fences, boulders, logs, tank traps, vegetative buffers, and signs, (ii) surface maintenance, such as building and compacting the road prism, grading, and spreading rock or surfacing material, (iii) drainage maintenance and repair of inboard ditch lines, waterbars, sediment traps (iv) removing and hauling or stabilizing pre-existing cut and fill material or slide material (v) snowplowing (vi) relocating portions of roads and trails to less sensitive areas outside of riparian buffer areas. The proposed activity does not include asphalt resurfacing, widening roads, or new construction or relocation of any permanent road inside a riparian buffer area except for a bridge approach in accordance to the section on Transportation Infrastructure. Road grading and shaping will maintain, not destroy, the designed drainage of the road, unless modification is necessary to improve drainage problems that were not anticipated during the design phase. Road maintenance will not be attempted when surface material is saturated with water and erosion problems could result.

(b) Road Decommissioning. BPA proposes to decommission and obliterate roads that are no longer needed, e.g., logging roads. Water bars will be installed, road surfaces will be insloped or outsloped, asphalt and gravel will be removed from road surfaces, culverts and bridges will be altered or removed, streambanks will be recontoured at stream crossings, cross drains will be installed, fill or sidecast materials will be removed, road prism will be reshaped, and sediment catch basins will be created.

6. In-channel Nutrient Enhancement. BPA proposes to fund the application of nutrients throughout a waterway corridor by placement of salmon carcasses into waterways, placement of carcass analogs (processed fish cakes) into waterways or placement of inorganic fertilizers into waterways.

7. Irrigation and Water Delivery/Management Actions.

(a) Convert Delivery System to Drip or Sprinkler Irrigation. Flood or other inefficient irrigation systems will be converted to drip or sprinkler irrigation; education will be provided to irrigators on ways to make their systems more efficient. This proposed activity will involve the installation of pipe, possibly trenched and buried into the ground, and possibly pumps to pressurize the system.

(b) Convert Water Conveyance from Open Ditch to Pipeline. Open ditch

irrigation water conveyance systems will be replaced with pipelines to reduce evaporation and transpiration losses. Leaking irrigation ditches and canals will be converted to pipeline or lined with concrete, bentonite, or appropriate lining materials.

(c) Convert from Instream Diversions to Groundwater Wells for Primary Water Source. Wells will be drilled as an alternative water source to surface water withdrawals. Water from the wells will be pumped into ponds or troughs for livestock, or used to irrigate agricultural fields. Instream diversion infrastructure will be removed or downsized, if feasible. If an instream diversion is downsized, it will be covered under this programmatic consultation only by following all criteria outlined in the Consolidate, or Replace Existing Irrigation Diversions section 1(b). New wells will be located more than $\frac{1}{4}$ mile from the stream and will not be hydraulically connected to the stream.

(d) Install or Replace Return Flow Cooling Systems. Above-ground pipes and open ditches that return tailwater from flood-irrigated fields back to the river will be replaced. Return flow cooling systems will be constructed by trenching and burying a network of perforated PVC pipes that will collect irrigation tailwater below ground, eliminating pools of standing water in the fields and exposure of the water to direct solar heating. No instream work is involved except for installing the drain pipe outfall; most work will be in uplands or in riparian buffer areas that are already plowed or grazed.

(e) Install Irrigation Water Siphon Beneath Waterway. Siphons transporting irrigation water will be installed beneath waterways where irrigation ditch water currently enters a stream and commingles with stream water, with subsequent withdrawal of irrigation water back into an irrigation ditch system downstream. Periodic maintenance of the siphon will be conducted. Work may entail use of heavy equipment, power tools, and/or hand tools.

(f) Livestock Watering Facilities. Watering facilities will consist of various low-volume pumping or gravity-feed systems to move the water to a trough or pond at an upland site. Either above-ground or underground piping will be installed between the troughs or ponds and the water source. Water sources may include springs and seeps, streams, or groundwater wells. Pipes will generally range from 0.5 to 4 inches, but may exceed 4 inches in diameter. Placement of the pipes in the ground will typically involve minor trenching using a backhoe or similar equipment. The off-channel watering facility will (i) avoid steep slopes; (ii) ensure that each livestock water development has a float valve or similar device limiting use to demand, a return flow system, a fenced overflow area, or similar means to minimize water withdrawal and potential runoff and erosion. All pumping and gravity-feed systems within habitat occupied by listed salmonids (salmon, steelhead, bull trout) will have fish screens to avoid juvenile fish entrainment, and will be operated in accordance with NMFS's current fish screen criteria (NMFS 2011 or most recent version). If pumping rate exceeds 3 cfs, a NMFS Hydro fish passage review will be necessary.

(g) Install, Upgrade, or Maintain Fish Exclusion Devices and Bypass. This category includes installing, replacing, upgrading, removing, or maintaining off-channel

screens and associated fish bypass systems to prevent fish entrapment in irrigation canals or other surface water diversions for existing legal water diversions. Exclusion barriers may include fish screens, velocity barriers & jump height barriers that require maintenance or replacement. Diversion water intake and return points will be installed, replaced, upgraded, removed, or maintained to prevent salmonids of all life stages from swimming into, or being entrained within, the irrigation system. Intake pipes for all purposes will be screened with mesh sized to prevent fish from entering the pipes. Properly designed screens will prevent salmonids from becoming entrained or impinged on diversion structures. This category also covers on-going maintenance of fish screens and fish bypass systems.

All fish screens (including screens installed on temporary and permanent pump intakes) and fish bypass systems will be installed, operated, and maintained according to NMFS fish screen criteria, detailed in Anadromous Salmonid Passage Facility Design (NMFS 2011 or most recent version). Maintenance, which may include temporary removal of fish screen components, will be conducted to ensure their proper functioning (e.g., cleaning debris buildup, replacement of parts, etc).

8. Fisheries, Hydrologic, and Geomorphologic Surveys. BPA proposes to fund the collection of information in uplands, floodplains, and streambeds regarding existing on ground conditions relative to habitat type, condition, and impairment; species presence, abundance, and habitat use; and conservation, protection, and rehabilitation opportunities or effects. Electro-shocking and fish handling for research purposes is not included, as this work must have an ESA Section 10 research permit.

9. Special Actions (for Terrestrial Species).

(a) Install/Develop Wildlife Structures. This activity involves the installation or development of a variety of structures that mimic natural features and provide support for wildlife foraging, breeding, and or resting/refuge. These can include bat roosting/breeding structures, avian nest boxes, hardwood snags, brush/ cover piles, coarse woody debris, and raptor perches. Work may entail use of power tools and/or crews with hand tools.

(b) Construct Fencing for Grazing Control. Permanent or temporary livestock exclusion fences or cross-fences will be installed to assist in grazing management. Individual fence posts will be pounded or dug using hand tools or augers on backhoes or similar equipment. Fence posts will be set in the holes, backfilled, and fence wire strung or wooden rails placed. Installation may involve the removal of native or non-native vegetation along the proposed fence line. Occasionally rustic wood X-shaped fence that does not require setting posts will be used. No grazing will be allowed within riparian area fenced enclosures.

(c) Plant Vegetation. Plant trees, shrubs, herbaceous plants, and aquatic macrophytes to help stabilize soils. Develop a vegetation plan that is responsive to the biological and physical factors at the site. Plant large trees such as cottonwoods and

conifers in areas where they historically occurred but are currently either scarce or absent. Obtain plants and seeds from local sources to ensure plants are adapted to local climate and soil chemistry.

Pastures and rangelands will be planted or seeded with native or adapted perennial and biannual vegetation. The ground will be scarified as necessary to promote seed germination. In areas with severe erosion or high erosion potential, trees, shrubs, vines, grasses, and legumes will be planted to stabilize soils. Because noxious weeds, nonnative invasive plants, and aggressive, weedy species can take over disturbed lands and degrade range values, vegetation will be controlled through the use of herbicide applications, mechanical removal, and hand pulling.

Prepare planting sites by cutting, digging, grubbing roots, scalping sod, de-compacting soil as needed, and removing existing vegetation. Place woody debris, wood chips, or soil at select locations to alter microsites. Plants will be fertilized, mulched, and stems wrapped to protect from rodent girdling. Buds will be capped to protect plants from herbivores. Work may entail use of heavy equipment, power tools, and/or hand tools.

(d) Tree Removal for Large Wood Projects. This activity involves the manipulation, harvest, placement, or removal and stockpiling of large wood for restoration projects. For this activity live conifers and other trees can be felled or pulled/pushed over for in-channel large wood placement when conifers and trees are fully stocked. Danger trees and trees killed through fire, insects, disease, blow-down and other means can be felled and used for in-channel placement regardless of live-tree stocking levels. Tree felling shall not create excessive streambank erosion or increase the likelihood of channel avulsion during high flows. Trees may be removed by cable, ground-based equipment, or helicopter. Trees may be felled or pushed/pulled directly into a stream or floodplain. Trees may be stockpiled for future instream restoration projects. The project manager for an aquatic restoration action will coordinate with the EC Lead and/or an action-agency wildlife biologist in tree-removal planning efforts.

1.3.1 Proposed avoidance and minimization measures: General conservation measures and project-specific conservation measures have been added to each activity category to minimize impacts to aquatic resources.

1.3.2 Proposed compensatory mitigation: Mitigation was not proposed by the BPA as part of the request for reauthorization of the RGP and will not be required. The projects to be authorized under RGP-6 are habitat restoration actions with the intent of providing a net environmental benefit to the aquatic system. Overall, actions authorized by RGP-6 are not expected to result in losses to waters of the United States.

1.4 Existing conditions and any applicable project history:

Existing Conditions:

Habitat restoration projects would be located throughout Oregon in the Columbia River basin. Since projects authorized under this RGP will occur in the Columbia River basin, the ecoregion for that basin is described below.

Columbia Basin. This river flows over 1,200 miles from British Columbia south through eastern and central Washington, and then west between Washington and Oregon, to the Pacific Ocean. Many tributaries feed the Columbia. The largest of these - the Snake River - drains more than 40% of the surface area of the Columbia Basin, and supplies about 20% of the Columbia's flow. Most of the Snake River Basin lies in southern Idaho and the easternmost part of Oregon, a dry region whose development has depended almost totally on water availability. The major tributaries of the Snake River include the Salmon, Clearwater, Boise, Owyhee, Grande Ronde, Palouse, and Tucannon. Other tributaries to the Columbia River include Kootenai, Pend Oreille, Spokane, Okanogan, Wenatchee, Yakima, Walla Walla, John Day, Deschutes, Hood, and Willamette Rivers. The geographic scope of the RGP (see section 2.1) extends from the headwaters of rivers to the Columbia River estuary.

The Pacific Northwest environment is highly complex, principally because of the ocean and mountains. Climate close to the coast is strongly influenced by the Pacific Ocean. At lower elevations west of the Coast Range, temperatures remain consistently mild and summer fog reduces moisture stress during an otherwise dry season. Dense, moist forests of primarily western hemlock and Douglas fir predominate west of the Cascades. Cool, wet winters; warm, dry summers; and rich soils promote fast and prolonged vegetation growth. East of the Cascades, increased aridity and frequent fires promote open, park-like stands of ponderosa pine, lodgepole pine, and western larch in mountainous areas and juniper woodlands, sagebrush-steppe, and grasslands at lower elevations. In addition, the lowland river valleys of western Oregon and Washington support extensive oak woodlands, grasslands, and wetlands composed of herbaceous plants. Although conifers dominate many areas, the region also includes large areas of temperate and semi-arid grass- and brush lands. Rainshadow effects of the mountains cause aridity and temperatures to increase progressively farther inland, especially east of the Cascade Range. The warmest and driest habitats in this region occur at low elevations in the Snake River Basin - High Desert region. Here, semi-arid deserts of sagebrush and grasses dominate the landscape. These varied ecosystems support a vast diversity of wildlife species. There is substantial variation in weather from year to year. The amount of precipitation especially varies, depending on ocean conditions, and annual precipitation amounts in some locations can vary by an order of magnitude.

Rivers and streams support a large number of anadromous fish species (species that migrate to the ocean to mature, then return to their natal streams to spawn), as well as varied populations of resident fish (fish that live their entire lives in fresh water). The Columbia River and its tributaries are home to a variety of native salmonid and non-salmonid fish. A number of fish and wildlife species are listed as threatened or endangered under the ESA or as sensitive. Listed fish species include some runs of coho, chinook, chum, and sockeye salmon, and steelhead and sea-run cutthroat trout, the Kootenai River white sturgeon, and bull trout. Bird species currently listed as threatened or endangered include the bald eagle, northern spotted owl, and marbled murrelet. Listed mammals include the Canadian lynx, woodland caribou, grizzly bear, Columbian white-tailed deer, and gray wolf.

The Columbia Basin ecoregion is semi-arid, with cold winters and hot summers. Farther from the Columbia River, annual precipitation decreases and soil changes from sandy deposits to windblown silts. Most of the ecoregion receives less than 15 inches (38 centimeter) of precipitation per year, mostly in the form of snow.

Much of the ecoregion's natural vegetation is native bunchgrass prairie. Sandy deposits along the big bend of the Columbia River have created open dunes and areas of shrub-steppe and western juniper. The rivers were once lined with intermountain riparian vegetation, such as black cottonwood, willows, chokecherry, and aspen, and wetlands were located throughout the plateau. Fire was a natural component of this ecoregion, though the fire recurrence interval is not as clear as in other ecoregions.

The ecoregion has undergone extensive changes over the last 150 years; it is second only to the Willamette Valley in the extent of landscape change. It consists largely of privately-owned agricultural and range land, with over 85% of the former sagebrush steppe, grassland, and riparian communities converted to dry land wheat or irrigated agriculture. Only marginal lands that cannot be farmed, such as the steep canyon grasslands and scablands, retain a semblance of native vegetation. Protected areas and publicly owned lands are very limited in this region. In the conversion to farmland, much of the natural function of the landscape has been lost. Bottomland forests and wetlands have been replaced by irrigated agriculture and rural residential development. Changes in the upland have occurred as sagebrush steppe has been reduced by over 85%. Invasive plant species are a major threat to native habitats as well as to the productivity of farmlands and pastures.

Dam construction and subsequent inundation have degraded riparian resource conditions along the Columbia River and confluences. Lake habitats have

largely replaced riparian and floodplain wetlands. Large rivers such as the Umatilla River have decreased riparian function and water quality.

Project History:

BPA's responsibilities for protecting, mitigating, and enhancing fish and wildlife resources in the Columbia Basin are defined by a collection of laws, treaties, and executive orders. The Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Northwest Power Act, 16 U.S.C Sec. 839 et seq.) requires that BPA use the Northwest Power Act and BPA's pre-Act legal authorities to protect, mitigate, and enhance fish and wildlife to the extent affected by the development and operation of the Columbia River Basin hydroelectric dams from which BPA markets power. Under the Northwest Power Act, the Northwest Power and Conservation Council (NWPPCC), which is a four-state compact entity (with representatives from Oregon, Washington, Idaho, and Montana), develops the Columbia Basin Fish and Wildlife Program (Program). Beginning in 1996, BPA began enlisting NWPPCC to periodically solicit projects intended to help meet BPA's share of the Program's measures and objectives through an open and public process. The NWPPCC is directed by the Northwest Power Act to conduct a review of submitted restoration project proposals and to make recommendations to BPA for project funding from BPA's annual fish and wildlife program budget. The NWPPCC accomplishes its review of the project proposals with the assistance of an Independent Scientific Review Panel (ISRP). The ISRP must review a sufficient number of projects to ensure that the list of prioritized projects recommended to BPA is consistent with the NWPPCC's program. The ISRP assesses whether projects are based on sound scientific principles, benefit fish and wildlife, and have a clearly defined objective and outcome with provisions for monitoring and evaluation of results. After its review, the ISRP rates each project as fundable, fundable in part, not fundable, or requiring a further response based on the panel's application of the criteria. The NWPPCC fully considers the ISRP's evaluation in making its final project recommendations to BPA. Based largely on the NWPPCC's final recommendations, BPA makes funding decisions and implements projects through contracts with numerous entities, including Columbia Basin tribes, states, other federal agencies, universities, and private vendors. BPA also considers its other fish and wildlife obligations, such as those required by the Endangered Species Act (ESA) and the Clean Water Act (CWA) in the decision making process. BPA funds and implements a wide array of protection, mitigation, and enhancement actions, including restoring habitat, improving fish passage, and acquiring land to protect habitat.

- 1.5 Permit Authority: Section 10 of the Rivers and Harbors Act (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344).

2.0 Scope of review for National Environmental Policy Act (i.e. scope of analysis), Section 7 of the Endangered Species Act (i.e. action area), and Section 106 of the National Historic Preservation Act (i.e. permit area)

2.1 Determination of scope of analysis for National Environmental Policy Act (NEPA):

The scope of analysis includes the specific activity requiring a Department of the Army permit. Other portions of the entire project are not included because the Corps does not have sufficient control and responsibility to warrant federal review.

Final description of scope of analysis: The scope of analysis includes all activities necessary to complete the site-specific aquatic habitat restoration project as all of the pieces are key to the overall project success. All aspects of the projects are subject to federal control and responsibility.

2.2 Determination of the “Corps action area” for Section 7 of the Endangered Species Act (ESA): The action area is the areas where environmental effects of actions authorized under this RGP may occur. This includes the Columbia River basin within Oregon and the Oregon coastal river basins from Cape Blanco in the south to the Columbia River in the north.

2.3 Determination of permit area for Section 106 of the National Historic Preservation Act (NHPA):

The permit area includes those areas comprising waters of the United States that will be directly affected by the proposed work or structures, as well as activities outside of waters of the U.S. because all three tests identified in 33 CFR 325, Appendix C(g)(1) have been met.

Final description of the permit area: The permit area includes the aquatic restoration activities within waters of the U.S. and any associated work in uplands or adjacent floodplain areas.

3.0 Purpose and Need

3.1 Purpose and need for the project as provided by the applicant and reviewed by the Corps: Improve or restore aquatic habitats.

3.2 Basic project purpose, as determined by the Corps: Improve or restore aquatic habitats.

- 3.3 Water dependency determination: The activity does not require access or proximity to or siting within a special aquatic site to fulfill its basic purpose. Therefore, the activity is not water dependent.
- 3.4 Overall project purpose, as determined by the Corps: To conduct habitat restoration projects funded by Bonneville Power Administration (BPA) following the Columbia Basin Fish and Wildlife Program guidance developed by the Northwest Power & Conservation Council (NWPCC).

4.0 Coordination

- 4.1 The results of coordinating the proposal on Public Notice (PN) are identified below, including a summary of issues raised, any applicant response and the Corps' evaluation of concerns.

Were comments received in response to the PN? Yes

Were comments forwarded to the applicant for response? Yes

Was a public meeting and/or hearing requested and, if so, was one conducted?
No, no public hearing or meeting was requested.

Comments received in response to public notice:

Comment 1: Daniel Evans. On 18 January 2017, the Corps received a phone call in response to the public notice from Daniel Evans of Lower Columbia Estuary Partnership. His concern was regarding the use of herbicide application for the RGP-6. On 6 February 2017, he submitted comments by email. He requested the full extent of the RGP area to be described in the RGP. He suggested using a link to the conservation measures instead of cutting and pasting them into an attachment, since the most recent handbook should be used. He also included comments regarding review period of the public notice, Attachment 2, and Level 3 requirements.

Corps Response: The Corps responded on 9 February 2017. The Corps clarified the RGP area and responded to each comment. It should be noted that the Washington side of the Columbia River was not included in the original RGP-6 and is therefore not included in this version. Level 3 language was updated as recommended. The Corps stated they would most likely provide a link to the handbook as recommended. The Corps explained that Attachment 2 was not included in the public notice because it was not yet updated and contains the same information as the RGP itself since it is a summary table.

Comment 2: Jeff Miller. On 16 February 2017, Jeff Miller provided comments on behalf of the Treated Wood Council and Western Wood Preservers Institute. They see no scientific rationale for the restrictions on the use of treated wood in RGP-6.

Corps Response: The comments were forwarded to BPA for a response since the treated wood restriction is based on their ESA consultation with NMFS. BPA responded stating that the RGP-6 is not a scientific document and includes legal agreements. The non-use of treated wood was an agreement made between NMFS and BPA through the Section 7 consultation process that concluded in 2013. This response was forwarded to Jeff Miller on 24 February 2017.

Additional discussion of submitted comments, applicant response and/or Corps' evaluation: N/A

- 4.1.1 Were additional issues raised by the Corps including any as a result of coordination with other Corps offices? No

If yes, provide discussion including coordination of concerns with the applicant, applicant's response and Corps' evaluation of the response: N/A

- 4.1.2 Were comments raised that do not require further discussion because they address activities and/or effects outside of the Corps' purview? No

If yes, provide discussion: N/A

4.2 Tribal Coordination

No comments were received from Tribes.

- 5.0 Alternatives Analysis** (33 CFR Part 325 Appendix B(7), 40 CFR 230.5(c), 40 CFR 230.10(b)(1), and 40 CFR 1502.14). An evaluation of alternatives is required under NEPA for all jurisdictional activities. An evaluation of alternatives is generally required under the Section 404(b)(1) Guidelines for projects that include the discharge of dredged or fill material. However, the consideration of alternatives under the Section 404(b)(1) Guidelines is not directly applicable to general permits. NEPA requires discussion of a reasonable range of alternatives, including the no action alternative, and the effects of those alternatives; under the Guidelines, practicability of alternatives is taken into consideration and no alternative may be permitted if there is a less environmentally damaging practicable alternative.

- 5.1 Site selection/screening criteria: In order to be practicable, an alternative must be available, achieve the overall project purpose (as defined by the Corps), and be feasible when considering cost, logistics and existing technology.

Criteria for evaluating alternatives as evaluated and determined by the Corps:
Criteria was not developed.

- 5.2 Description of alternatives.

- 5.2.1 No action alternative: Under the no action alternative, RGP-6 would not be reauthorized and the Corps would need to rely on existing permitting processes (i.e. nationwide permits, other existing general permits, or standard permits) to evaluate aquatic habitat restoration projects funded by BPA. Many of these projects will require a Department of the Army permit, thus increasing the burden on limited Corps resources, which may result in delayed and backlogged permit decision responses for BPA and the project proponents. If the RGP is not available, substantial additional resources would be required for the Corps to evaluate numerous habitat restoration projects either through the individual permit process or the nationwide permit (NWP) process. While this option is a viable alternative, it does not meet BPA's goals of providing a streamlined approach to the review of these types of projects, which result in project cost savings (in the form of person-hours) that are then directed to other agency priority efforts. Also, without having RGP-6 in place, the Corps runs the risk of not being responsive in the evaluation of these beneficial projects.

- 5.2.2 Off-site alternatives.

Under the Clean Water Act Section 404(b)(1) Guidelines, the consideration of off-site alternatives does not apply to specific projects authorized by general permits. Furthermore, the scope of the RGP is limited to aquatic habitat restoration such that off-site alternatives are not reasonable alternatives under NEPA.

- 5.2.3 On-site alternatives.

The five habitat restoration categories are projects that are commonly implemented throughout the aquatic restoration community in Oregon and elsewhere; all such projects have predictable effects. Therefore, the alternative concept in this case was focused on creating design criteria and conservation measures that accentuated the aquatic benefits while minimizing to the greatest degree possible any adverse effects. This refinement process occurred in coordination with BPA.

BPA's responsibilities for protecting, mitigating and enhancing fish and wildlife resources in the Columbia Basin are defined by a collection of laws, treaties and executive orders. The Pacific Northwest Electric Power Planning and

Conservation Act of 1980 (Northwest Power Act, 16 U.S.C. Sec. 839 et seq.) requires that BPA use the Northwest Power Act and BPA's pre-Act legal authorities to protect, mitigate, and enhance fish and wildlife to the extent affected by the development and operation of the Columbia River Basin hydroelectric dams from which BPA markets power. Under the Northwest Power Act, the Northwest Power and Conservation Council (NWPCC), which is a four-state compact entity (with representatives from Oregon, Washington, Idaho, and Montana), develops the Columbia Basin Fish and Wildlife Program (Program). Beginning in 1996, BPA began enlisting NWPCC to periodically solicit projects intended to help meet BPA's share of the Program's measures and objectives through an open and public process. The NWPCC is directed by the Northwest Power Act to conduct a review of submitted restoration project proposals and to make recommendations to BPA for project funding from BPA's annual fish and wildlife program budget. The NWPCC accomplishes its review of the project proposals with the assistance of an Independent Scientific Review Panel (ISRP).

The NWPCC must have the ISRP "review a sufficient number of projects to ensure that the list of prioritized projects recommended to BPA is consistent with the NWPCC's program. The ISRP assesses whether projects are based on sound scientific principles, benefit fish and wildlife, and have a clearly defined objective and outcome with provisions for monitoring and evaluation of results. After its review, the ISRP rates each project as fundable, fundable in part, not fundable or requiring a further response, based on the panel's application of the criteria. The NWPCC fully considers the ISRP's evaluation in making its final project recommendations to BPA.

Based largely on the NWPCC's final recommendations, BPA makes funding decisions and implements projects through contracts with numerous entities, including Columbia Basin tribes, states, other federal agencies, universities, and private vendors. BPA also considers its other fish and wildlife obligations, such as those required by ESA and the Clean Water Act (CWA) in the decision making process. BPA funds and implements a wide array of protection, mitigation, and enhancement actions, including restoring habitat, improving fish passage, and acquiring land to protect habitat.

- 5.3 Evaluate alternatives and whether or not each is practicable under the Guidelines or reasonable under NEPA: The no action alternative would not achieve the purpose and need of the RGP. In the absence of this RGP, individual projects would need to be evaluated, which requires substantial additional resources for the Corps.

5.4 Least environmentally damaging practicable alternative under the 404(b)(1) Guidelines (if applicable) and the environmentally preferable alternative under NEPA:

The least environmentally damaging practicable alternative is to issue the RGP.

Project Selection. Projects implemented under the nine habitat restoration categories are typically approved by BPA through an internal quality assurance/quality control design review. The approval process is described in the HIP Handbook and summarized here as follows: The Sponsor provides design to the lead engineer. The risk determination is made as either low, medium, or high. Design plans are submitted by Sponsor. The Restoration Review Team (RRT) reviews the project, solicits comments from other agencies, conducts site visit, submits comments, and approves design. Engineer lead or sponsor gets NMFS hydrological approval as needed. Final design is submitted to engineering lead. Variance requests can also be made on the project notification form and submitted to the Services for approval.

6.0 Evaluation for Compliance with the Section 404(b)(1) Guidelines. The following sequence of evaluation is consistent with 40 CFR 230.5.

The 404(b)(1) Guidelines at 40 CFR 230.7(a) state: “A General permit for a category of activities involving the discharge of dredged or fill material complies with the Guidelines if it meets the applicable restrictions on the discharge in § 230.10 and if the permitting authority determines that:

- (1) The activities in such category are similar in nature and similar in their impact upon water quality and the aquatic environment”.

BPA is proposing to fund nine habitat restoration activity types to cover the full range of restoration options and needs for the Columbia River watershed in the state of Oregon.

Impacts of one specific activity type may differ from another (e.g. the placement of wood has different impact considerations than culvert removal). To ensure impacts are minimal the Corps has identified a specific set of limitations and terms and conditions, and for each activity type. These criteria specify how individual actions are to be designed so that impacts are predictable, no matter where the action occurs, and result in no more than minimal individual and cumulative adverse effects on the aquatic environment.

The activities authorized by RGP-6 are sufficiently similar in nature and environmental impact to warrant authorization by a general permit. The terms

of RGP-6 will authorize specific categories of activities (i.e., discharges of dredged or fill material for BPA-funded habitat restoration activities) in a specific category of waters (i.e., waters of the United States). The limitation on the scopes of activities covered and the restrictions imposed by the terms and conditions of this RGP will result in the authorization of activities that have similar impacts on the aquatic environment, namely habitat restoration activities.

- (2) “The activities in such category will have only minimal adverse effects when performed separately.”

General aquatic conservation measures have been developed that will apply to all habitat restoration activity categories to minimize adverse effects to the aquatic environment. In addition, each specific activity category has project-specific conservation measures and exclusions for project types that are known to be more complex, could potentially have greater adverse effects, or would be located in environmentally sensitive areas (e.g. estuaries). To further ensure minimal adverse effects, the RGP requires the proponent (applicant) to notify the Corps prior to project implementation through the submittal of a pre-construction notification (PCN). The PCN provides project-specific information that allows the Corps to verify the project is covered by the RGP and determine if further review is warranted. The PCN requirement does not apply to Level 1 projects, which are projects that do not affect endangered species or designated critical habitat, reserved treaty rights, historic properties, or wild and scenic river corridors. Further, Level 1 projects cannot be located within the coastal zone and must not impact more than 0.1 acre of wetland or 300 linear feet of stream. These category of projects are required to submit a post construction notification within 60 days of project completion to allow the Corps to track projects that use the RGP and which qualify for as Level 1.

If a situation arises in which a specific action requires further review, or is more appropriately reviewed under the individual permit process, provisions of this RGP allows the district engineer to take such action.

- (3) “The activities in such category will have only minimal cumulative adverse effects on water quality and the aquatic environment.”

The actual number of projects completed in any given year or during the five-year life of the RGP is entirely subject to funding. Under the original RGP-6, 51 projects statewide were verified during the construction period of 2011 through 2016. Given that individual projects include conservation measures project design criteria and will have an overall net environmental benefit, the

Corps has determined the activities proposed to be authorized by RGP-6 will result in no more than minimal cumulative adverse effects to the aquatic environment. The Oregon Department of Environmental Quality has issued Water Quality Certification for RGP-6 (April 6, 2018) and determined that implementation of the project will be consistent with applicable provisions of the CWA, state water quality standards (OAR Chapter 340 Division 41), and other appropriate requirements of state law provided the water quality certification conditions are incorporated into RGP-6.

If a situation arises in which a specific action requires further review, or is more appropriately reviewed under the individual permit process, provisions of the RGP allow the district engineer to take such action.

Based on the evaluation of the applicable restrictions on the discharge and the activities proposed for authorization under this General permit, as required by 40 CFR 230.7, the Corps has determined the reauthorization of this modified RGP-6 complies with the 404(b)(1) Guidelines' conditions for the issuance of General permits.

- 6.1 Practicable alternatives to the proposed discharge consistent with 40 CFR 230.5(c) are evaluated in Section 5. The statements below summarize the analysis of alternatives.

For those projects that would discharge into a special aquatic site and are not water dependent, the applicant has demonstrated there are no practicable alternatives that do not involve special aquatic sites.

It has been determined that there are no alternatives to the proposed discharge that would be less environmentally damaging (Subpart B, 40 CFR 230.10(a)). The proposed discharge in this evaluation is the practicable alternative with the least adverse impact on the aquatic ecosystem, and it does not have other significant environmental consequences.

- 6.2 Candidate disposal site delineation (Subpart B, 40 CFR 230.11(f)). Each disposal site shall be specified through the application of these Guidelines:

Discussion: No disposal sites are proposed through the RGP activities.

- 6.3 Potential impacts on physical and chemical characteristics of the aquatic ecosystem (Subpart C 40 CFR 230.20). See Table 1:

| Table 1 – Potential Impacts on Physical and Chemical Characteristics | | | | | | |
|--|-----|-----------|-------------------|---------------------------|--------------------------|--------------|
| Physical and Chemical Characteristics | N/A | No Effect | Negligible Effect | Minor Effect (Short Term) | Minor Effect (Long Term) | Major Effect |
| Substrate | | | X | | | |
| Suspended particulates/ turbidity | | | X | | | |
| Water | | | X | | | |
| Current patterns and water circulation | | | X | | | |
| Normal water fluctuations | | | X | | | |
| Salinity gradients | | | X | | | |

Discussion:

a. Substrate: Substrate of the streambeds and adjacent floodplains may be altered but the intent is to mimic natural conditions at the project site at project completion. The overall impact of this change to the substrate will result in a net environmental benefit. During construction activities, the native substrate may be temporarily impacted in the project work area. The earth moving equipment may temporarily alter the native substrate; however, restoring the site back to its original conditions will minimize these adverse effects to the substrate. In the case of some activities, such as floodplain overburden removal, reduction of recreation impacts, and road treatments the intent is to remove existing structures (roads, camp sites and foot trails, and mine tailings) and restore natural stream and riparian substrate. Conversely, hardening fords for livestock crossing would change the stream substrate, but such impacts would be minimized through design criteria, and the overall effect to aquatic habitat would be beneficial (due to reduction of livestock impacts on turbidity, bank stability, etc.).

b. Suspended particulates/turbidity: Most projects will result in short-term stream turbidity but to varying degrees. Culvert removals and replacements will likely result in the most sediment release into stream channels during project implementation. In these cases, large amounts of sediment may have accumulated above the blockage feature (culvert), the stream will be diverted to allow for in-channel construction activities, and the subsequent reintroduction of stream flow into the channel may lead to the most sediment releases compared to other restoration projects. Projects associated with the Headcut and Grade Stabilization section 1(c), where channel aggradation structures will require localized excavation of stream channels, may result in sediment inputs equal to culvert removal projects. In general, projects implemented under the remaining aquatic restoration categories will result in less sediment into stream channels

because the removal of blockage features, which store sediment, and stream diversion/reintroduction practices will not occur. Channel/bank excavation will be relatively limited, as well. To reduce the short-term effects caused by near and instream construction, the project proponents (applicants) apply conservation measures and practices and project design criteria, to each individual restoration project. All projects must include erosion control best management practices, as specified in the general conservation measures. The RGP requirement to comply with DEQ's Water Quality Certification, issued April 6, 2018, will provide additional Best Management Practices for avoiding and minimizing adverse increases in suspended particulates and turbidity.

c. Water: Petroleum based fuels or lubricants may leak or spill into stream channels from heavy machinery used to conduct aquatic restoration projects. To minimize such occurrences, each project will be required to follow the general conservation measure for mechanized equipment and vehicles operated to minimize adverse effects on the environment. Staging areas will be 150 feet or more from any natural waterbody or wetland, as specified in the general conservation measure. The water quality performance standards in the 401 water quality certification will avoid and minimize general project effects to water quality during construction.

d. Current patterns and water circulation: The aquatic restoration projects will be designed and implemented in such a manner as to enhance or restore natural hydrologic regimes or patterns. Projects are not intended to restrict stream flows or increase velocities in such a manner as to result in adverse flood impacts to downstream landowners. This RGP authorizes the removal of culverts, which can block fish passage. Removal of these barriers may alter the existing currents, circulation, and drainage patterns of the channel. Project-specific conservation measures require restoring natural drainage patterns, and removing these barriers will result in a net aquatic environmental benefit by reducing scouring and other detrimental effects these barriers may have on the aquatic environment. Irrigation and water delivery actions may be exempt from the Corps' regulatory authority. The RGP does not include new water diversions where one does not currently exist, but does include replacement and/or improvement of structures (including but not limited to those that lack fish passage). Design criteria require maintenance of current and circulation patterns, and the overall ecological effect of these activities is beneficial.

e. Normal water fluctuations: The activities authorized by this RGP will have negligible adverse effects on normal water level fluctuations. Some activities may involve the construction, replacement, or removal of water control structures or irrigation/water delivery management, which will alter the water level fluctuations of waters.

f. Salinity gradients: The activities authorized by this RGP will have negligible adverse effects on salinity gradients since the RGP does not authorize the

relocation or conversion of tidal waters. These activities will not cause changes to salinity gradients.

6.4 Potential impacts on the living communities or human uses (Subparts D, E and F):

6.4.1 Potential impacts on the biological characteristics of the aquatic ecosystem (Subpart D 40 CFR 230.30). See Table 2:

| Biological characteristics | N/A | No Effect | Negligible Effect | Minor Effect (Short Term) | Minor Effect (Long Term) | Major Effect |
|---|-----|-----------|-------------------|---------------------------|--------------------------|--------------|
| Threatened and endangered species | | | | | | X |
| Fish, crustaceans, mollusk, and other aquatic organisms | | | | X | X | |
| Other wildlife | | | | X | X | |

Discussion:

a. Threatened and endangered species: See Section 10.1.

b. Fish, crustaceans, mollusk, and other aquatic organisms: The projects authorized by this RGP will benefit most aquatic organisms, especially fish passage restoration, river/stream/floodplain/wetland restoration, invasive plant control, piling removal, large wood projects, and in-channel nutrient enhancement. Some species may be affected by changes in habitat characteristics but these would be minor effects. These species will be affected short term due to construction activities, including turbidity, noise, displacement, structures, equipment, temporary roads, and fill material placement.

c. Other wildlife: Other wildlife may have minor long term effects from changes in habitat characteristics. Most will benefit from these restoration projects, especially river/stream/floodplain/wetland restoration, invasive plant control, road decommissioning, wildlife structures, grazing control, and plant vegetation. Other wildlife may be affected short term due to construction activities including turbidity, noise, displacement, structures, equipment, temporary roads, and fill material placement.

6.4.2 Potential impacts on special aquatic sites (Subpart E 40 CFR 230.40). See Table 3:

| Table 3 – Potential Impacts on Special Aquatic Sites | | | | | | |
|--|-----|-----------|-------------------|---------------------------|--------------------------|--------------|
| Special Aquatic Sites | N/A | No Effect | Negligible Effect | Minor Effect (Short Term) | Minor Effect (Long Term) | Major Effect |
| Sanctuaries and refuges | | | X | | | |
| Wetlands | | | | | X | |
| Mud flats | | | X | | | |
| Vegetated shallows | | | X | | | |
| Coral reefs | X | | | | | |
| Riffle and pool complexes | | | X | | | |

Discussion:

a. Sanctuaries and refuges: Any impacts would be negligible. The activities authorized by this RGP will not adversely impact sanctuaries and refuges since they are restoration activities. The applicant will be required to follow general and project specific aquatic conservation measures for all actions.

b. Wetlands: Any impacts would be minor. The activities authorized by this RGP will not adversely impact wetlands since they are restoration activities. The applicant will be required to follow general and project specific aquatic conservation measures for all actions. Furthermore, Level 1 projects only authorize 0.1 acre or less of impacts. Notification and/or approval by the Corps would be required prior to project start for wetland impacts greater than 0.1 acre.

c. Mudflats: Any impacts would be negligible. The activities authorized by this RGP will not adversely impact mudflats since they are restoration activities. The applicant will be required to follow general and project specific aquatic conservation measures for all actions.

d. Vegetated shallows: Any impacts would be negligible. The activities authorized by this RGP will not adversely impact vegetated shallows since they are restoration activities. The applicant will be required to follow general and project specific aquatic conservation measures for all actions.

e. Coral reefs: The proposed discharge in this evaluation would not occur in or affect coral reefs.

f. Riffle and pool complexes: Any impacts would be negligible. The activities authorized by this RGP will not adversely impact riffle and pool complexes since

they are restoration activities. The applicant will be required to follow general and project specific aquatic conservation measures for all actions

6.4.3 Potential impacts on human use characteristics (Subpart F 40 CFR 230.50). See Table 4:

| Table 4 – Potential Impacts on Human Use Characteristics | | | | | | |
|---|-----|-----------|-------------------|---------------------------|--------------------------|--------------|
| Human Use Characteristics | N/A | No Effect | Negligible Effect | Minor Effect (Short Term) | Minor Effect (Long Term) | Major Effect |
| Municipal and private water supplies | | X | | | | |
| Recreational and commercial fisheries | | | | | X | |
| Water-related recreation | | | | | X | |
| Aesthetics | | | | X | X | |
| Parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves | | | X | | | |

Discussion:

a. Municipal and private water supplies: No effect. Projects are not likely to be located near existing or future water supplies.

b. Recreational and commercial fisheries: Restoration activities are expected to improve habitat for aquatic species; therefore, the Corps does not anticipate any adverse impacts to recreational or commercial fisheries. Benefits may occur due to fish passage restoration and river/stream/floodplain/wetland restoration, which could increase the quantity and availability of fish for recreational and commercial fishing.

c. Water-related recreation: No adverse impacts are anticipated to water related recreation. Benefits may occur to certain water-related recreation due to restoration activities. Recreation includes bird watching, hunting, and fishing.

d. Aesthetics: The aquatic habitat restoration activities authorized by this RGP may temporarily adversely affect aesthetics to the aquatic ecosystem during construction. However, these impacts are expected to be limited to the

construction window. Long term benefits may occur from the restoration activities from controlling invasive species, removing control structures, removing bridges/culverts, protecting streambanks, planting, reconstructing channels, removing piling, decommissioning roads, converting water conveyance from open ditch to pipeline, and constructing fencing for grazing control.

e. Parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves: For any activity that may occur in a component of the National Wild and Scenic River System, or in an officially designated study river, the RGP requires the project proponent (applicant) coordinate with and obtain 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.

6.5 Pre-testing evaluation (Subpart G, 40 CFR 230.60):

The following has been considered in evaluating the biological availability of possible contaminants in dredged or fill material. See Table 5:

| Table 5 – Possible Contaminants in Dredged/Fill Material | |
|---|--|
| Physical characteristics | |
| Hydrography in relation to known or anticipated sources of contaminants | |
| Results from previous testing of the material or similar material in the vicinity of the project | |
| Known, significant sources of persistent pesticides from land runoff or percolation | |
| Spill records for petroleum products or designated (Section 331 of CWA) hazardous substances | |
| Other public records or significant introduction of contaminants from industries, municipalities, or other sources | |
| Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities | |

Discussion: No long-term effects anticipated. Activities described in this RGP are generally not likely to cause the release of contaminants. In the course of reviewing pre-construction notifications for proposed projects, the Corps will determine whether the project has the potential to introduce contaminants into the environment. If that potential exists, the Corps will conduct further review as appropriate. The likelihood of such review being necessary is higher for projects in the estuary and near municipalities or major transportation routes, and lower for projects in rural areas or relatively undeveloped watersheds. The General Aquatic Conservation Measures that apply to all nine aquatic restoration categories contain a requirement for site assessment for contaminants. A site

assessment will be conducted to identify the type, quantity, and extent of any potential contamination for any action that involves excavation of more than 20 cubic yards of material.

It has been determined that testing is not required because the likelihood of contamination by contaminants is acceptably low and the material may be excluded from evaluation procedures.

6.6 Evaluation and testing (Subpart G, 40 CFR 230.61):

Discussion: Because the conditions of the RGP include a general condition for use of suitable fill material free from toxic pollutants in toxic amounts, individual evaluation and testing for the presence of contaminants will normally not be required.

6.7 Actions to minimize adverse impacts (Subpart H). The following actions, as appropriate, have been taken through application of 40 CFR 230.70-230.77 to ensure minimal adverse effects of the proposed discharge. See Table 6:

| Table 6 – Actions to Ensure Adverse Effects are Minimized | |
|---|--|
| Actions concerning the location of the discharge | |
| Actions concerning the material to be discharged | |
| Actions controlling the material after discharge | |
| Actions affecting the method of dispersion | |
| Actions affecting plant and animal populations | |
| Actions affecting human use | |

Discussion: Actions to minimize adverse effects have been thoroughly considered and incorporated into the RGP. General conditions are required for avoiding and minimizing impacts to resources. Additionally, the applicant must follow general and project specific aquatic conservation measures for each project.

6.8 Factual Determinations (Subpart B, 40 CFR 230.11). The following determinations are made based on the applicable information above, including actions to minimize effects and consideration for contaminants. See Table 7:

| Table 7 – Factual Determinations of Potential Impacts | | | | | | |
|---|-----|-----------|-------------------|---------------------------|--------------------------|--------------|
| Site | N/A | No Effect | Negligible Effect | Minor Effect (Short Term) | Minor Effect (Long Term) | Major Effect |
| Physical substrate | | | | | X | |
| Water circulation, fluctuation and salinity | | | | | X | |
| Suspended particulates/turbidity | | | | X | | |
| Contaminants | | | X | | | |
| Aquatic ecosystem and organisms | | | | X | X | |
| Proposed disposal site | X | | | | | |
| Cumulative effects on the aquatic ecosystem | | | X | | | |
| Secondary effects on the aquatic ecosystem | | | X | | | |

Discussion:

a. Physical substrate: Substrate of the streambeds and adjacent floodplains may be altered but the intent is to mimic natural conditions at the project site at project completion. The overall impact of this change to the substrate will result in a net environmental benefit. During construction activities, the native substrate may be temporarily impacted in the project work area. The earth moving equipment may temporarily alter the native substrate; however, restoring the site back to its original conditions will minimize these adverse effects to the substrate. In the case of some activities, such as floodplain overburden removal, reduction of recreation impacts, and road treatments the intent is to remove existing structures (roads, camp sites and foot trails, and mine tailings) and restore natural stream and riparian substrate. Conversely, hardening fords for livestock crossing would change the stream substrate, but such impacts would be minimized through design criteria, and the overall effect to aquatic habitat would be beneficial (due to reduction of livestock impacts on turbidity, bank stability, etc.).

b. Water circulation, fluctuation and salinity: The aquatic restoration projects will be designed and implemented in such a manner as to enhance or restore natural hydrologic regimes or patterns. Projects are not intended to restrict stream flows or increase velocities in such a manner as to result in adverse flood impacts to downstream landowners. This RGP authorizes the removal of culverts, which can block fish passage. Removal of these barriers may alter the existing

currents, circulation, and drainage patterns of the channel. Project-specific conservation measures require restoring natural drainage patterns, and removing these barriers will result in a net aquatic environmental benefit by reducing scouring and other detrimental effects these barriers may have on the aquatic environment.

c. Suspended particulates/turbidity: Most projects will result in short-term stream turbidity but to varying degrees. Culvert removals and replacements will likely result in the most sediment release into stream channels during project implementation. In these cases, large amounts of sediment may have accumulated above the blockage feature (culvert), the stream will be diverted to allow for in-channel construction activities, and the subsequent reintroduction of stream flow into the channel may lead to the most sediment releases compared to other restoration projects. Projects associated with the Headcut and Grade Stabilization section 1(c), where channel aggradation structures will require localized excavation of stream channels, may result in sediment inputs equal to culvert removal projects. In general, projects implemented under the remaining aquatic restoration categories will result in less sediment into stream channels because the removal of blockage features, which store sediment, and stream diversion/reintroduction practices will not occur. Channel/bank excavation will be relatively limited, as well. To reduce the short-term effects caused by near and instream construction, the project proponents (applicants) apply conservation measures and practices and project design criteria, to each individual restoration project. All projects must include erosion control best management practices, as specified in the general conservation measures. The RGP requirement to comply with DEQ's Water Quality Certification, issued April 6, 2018, will provide additional Best Management Practices for avoiding and minimizing adverse increases in suspended particulates and turbidity.

d. Contaminants: No known contaminants. Applicants will have to follow suitable material general condition of the RGP and DEQ WQC requirements and conditions.

e. Aquatic ecosystem and organisms: Minimal impacts to aquatic ecosystem and organisms will occur. The projects authorized by this RGP will benefit most aquatic organisms, especially the fish passage restoration, river/stream/floodplain/wetland restoration, invasive plant control, piling removal, large wood projects, and in-channel nutrient enhancement. Some species may be affected by changes in habitat characteristics but these would be minor effects. These species will be affected short term due to construction activities, including turbidity, noise, displacement, structures, equipment, temporary roads, and fill material placement.

f. Proposed disposal site: No disposal sites are proposed through the RGP activities.

g. Cumulative effects on the aquatic ecosystem: See Section 9.0 for cumulative effects.

h. Secondary effects on the aquatic ecosystem: See Section 9.0 for secondary (i.e., indirect) effects.

6.9 Findings of compliance or non-compliance with the restrictions on discharges (40 CFR 230.10(a-d) and 230.12). Based on the information above, including the factual determinations, the proposed discharge has been evaluated to determine whether any of the restrictions on discharge would occur. See Table 8:

| Table 8 – Compliance with Restrictions on Discharge | | |
|---|-----|----|
| Subject | Yes | No |
| 1. Is there a practicable alternative to the proposed discharge that would be less damaging to the environment (any alternative with less aquatic resource effects, or an alternative with more aquatic resource effects that avoids other significant adverse environmental consequences?) | | X |
| 2. Will the discharge cause or contribute to violations of any applicable water quality standards? | | X |
| 3. Will the discharge violate any toxic effluent standards (under Section 307 of the Act)? | | X |
| 4. Will the discharge jeopardize the continued existence of endangered or threatened species or their critical habitat? | | X |
| 5. Will the discharge violate standards set by the Department of Commerce to protect marine sanctuaries? | | X |
| 6. Will the discharge cause or contribute to significant degradation of waters of the U.S.? | | X |
| 7. Have all appropriate and practicable steps (Subpart H, 40 CFR 230.70) been taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem? | X | |

Discussion: No further discussion.

7.0 General Public Interest Review (33 CFR 320.4 and RGL 84-09)

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest as stated at 33 CFR 320.4(a). To the extent appropriate, the public interest review below also includes consideration of

additional policies as described in 33 CFR 320.4(b) through (r). The benefits which reasonably may be expected to accrue from the proposal are balanced against its reasonably foreseeable detriments.

- 7.1 All public interest factors have been reviewed and those that are relevant to the proposal are considered and discussed in additional detail. See Table 9 and the discussion that follows.

| Table 9: Public Interest Factors | Effects | | | | | |
|--------------------------------------|---------|-------------|---------------------|------------|------------|----------------|
| | None | Detrimental | Neutral (mitigated) | Negligible | Beneficial | Not Applicable |
| Table 9: Public Interest Factors | | | | | | |
| 1. Conservation: | X | | | | | |
| 2. Economics: | | | | X | X | |
| 3. Aesthetics: | | | | X | X | |
| 4. General Environmental Concerns: | | | X | | X | |
| 5. Wetlands: | | | | X | X | |
| 6. Historic Properties: | | | | X | | |
| 7. Fish and Wildlife Values: | | | | X | X | |
| 8. Flood Hazards: | | | | | X | |
| 9. Floodplain Values: | | | | X | | |
| 10. Land Use: | | | | X | | |
| 11. Navigation: | X | | | | | |
| 12. Shoreline Erosion and Accretion: | | | | | X | |
| 13. Recreation: | | | | | X | |
| 14. Water Supply and Conservation: | X | | | | | |
| 15. Water Quality: | | | | X | | |
| 16. Energy Needs: | X | | | | | |
| 17. Safety: | | | | X | | |
| 18. Food and Fiber Production: | X | | | | | |

| Table 9: Public Interest Factors | Effects | | | | | |
|--|---------|-------------|------------------------|------------|------------|-------------------|
| | None | Detrimental | Neutral (mitigated) | Negligible | Beneficial | Not Applicable |
| Table 9: Public Interest Factors | | | | | | |
| 19. Mineral Needs: | X | | | | | |
| 20. Consideration of Property Ownership: | | | | X | | |
| 21. Needs and Welfare of the People: | X | | | | | |

Discussion of effects on factors above:

Conservation: No effects to conservation are anticipated.

Economics: Implementation of the activities authorized by this RGP may temporarily disrupt some traffic during construction, but these disruptions will be limited to the construction window. The Corps does not anticipate long-term impacts to local and regional traffic/transportation patterns as a result of the implementation of these activities. Projects may provide short-term benefits to local economy by the potential employment of local contractors and consultants and the purchase and/or rental of local construction materials and supplies.

Aesthetics: The aquatic habitat restoration activities authorized by this RGP may temporarily adversely affect aesthetics to the aquatic ecosystem during construction. However, these impacts are expected to be limited to the construction window. The activities may also provide benefit to aesthetics by planting vegetation, removing roads, and restoring the aquatic environment.

General environmental concerns: The proposed activities may alter habitat characteristics of stream and wetlands, temporarily decreasing quantity and quality of habitat during construction activities. Root wads and boulders may be used to restore the stream channels back to the original contours. Riparian habitat may be impacted during clearing and grubbing activities that remove vegetation. The overall purpose of this RGP is to improve habitat for fish and other aquatic species by removing fish barriers and other structures near streams, and to conduct other activities that provide stream function where it is currently lacking. Although there will be impacts to the habitat, they will be temporary, and will result in a net aquatic gain of fish habitat. Conservation measures include working during appropriate in-water work periods and managing construction sites to avoid impacts to fish and other wildlife. Long term

benefits may also occur from restoration activities by improving habitats for fish and wildlife.

Wetlands: Wetlands may be encountered during project implementation given the general nature and location of the work. The General Construction Measures of the application require specific measures to be taken if wetlands occur within the project site. In summary, wetlands are to be flagged and avoided by construction equipment. If wetlands cannot be avoided for access, then equipment must cross wetlands only in the dry or over removable mats or pads. Any compaction that does occur will be restored to pre-construction conditions. Benefits to wetlands may also occur from wetland restoration activities, invasive species control, and planting.

Historic properties: BPA is the lead Federal agency for compliance under Federal cultural resources and historic preservation laws and regulations. BPA is responsible for compliance with the National Historic Preservation Act (NHPA). BPA 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). Coordination with the appropriate tribes must occur as part of the planning process to ensure the requirements of federal cultural resources and historic preservation laws and regulations are met. This process may occur through a locally established protocol between BPA and a Tribe. Coordination with the State Historic Preservation Office (SHPO) is required as well. To document compliance with Section 106, the pre-construction notification must indicate that archeological review has occurred.

Fish and wildlife values: All projects have the potential to impact riparian vegetation. Large Wood Projects will likely lead to the most impacts relative to other project types. Within riparian areas, impacts from these projects are expected to be limited to access paths while impacts to stream bank vegetation will be localized and scattered along a project area, wherever structures are placed or removed or at stream crossing sites. The remaining project types will impact riparian vegetation to a lesser degree because project areas will be more limited in scope and/or in areas where riparian vegetation is limited or lacking due to degraded conditions. To minimize such impacts, the project proponent (applicant) will apply conservation measures and practices, and through the use of project-specific conservation measures for individual aquatic restoration categories. Local wildlife biologists will receive pre-construction notifications and will have the opportunity to provide comments on ways to further minimize impacts to wildlife habitat. Long term benefits may occur due to restoration of fish and wildlife habitat.

Flood hazards: The overall intent of the RGP is to improve/restore the aquatic habitat. Activities include the removal of culverts, with restoration being either replacement with a bridge or complete restoration of the site to conditions found within the watershed. The net result will be an increase in the flood control capability of the tributaries.

Floodplain values: Floodplain values are not anticipated to be adversely affected.

Land use: No adverse impacts to land use classification are expected.

Navigation: The Corps does not anticipate impacts to navigation as a result of projects completed under the authority of this RGP.

Shoreline erosion and accretion: The RGP will authorize projects that promote natural sediment transport patterns for the specific stream reach, provide unaltered fluvial debris movement, and allow for longitudinal continuity and connectivity of the stream-floodplain system. The Corps anticipates long term improvements to erosion and accretion patterns from existing conditions.

Recreation: Restoration activities are expected to improve habitat for aquatic species; therefore, the Corps does not anticipate any adverse impacts to recreational or commercial fisheries. No impacts are anticipated to water related recreation. Benefits may occur to fishing, boating, and hunting through the improvement of habitat for aquatic species.

Water supply and conservation: No effect. Projects are not likely to be located near existing or future water supplies.

Water quality: Petroleum based fuels or lubricants may leak or spill into stream channels from heavy machinery used to conduct aquatic restoration projects. To minimize such occurrences, each project will be required to follow the general conservation measure for mechanized equipment and vehicles operated to minimize adverse effects on the environment. In addition, staging areas will be 150 feet or more from any natural waterbody or wetland, as specified in the general conservation measure. The water quality performance standards in the 401 water quality certification will avoid and minimize general project effects to water quality during construction.

Energy needs: No effect. Projects are not energy related nor will they affect energy related facilities.

Safety: Implementation of the activities authorized by this RGP may temporarily create unsafe conditions during construction; however, the project proponent

(applicant) will ensure appropriate safety precautions are in place to ensure safe conditions for construction crews and the traveling public.

Food and fiber production: The Corps does not anticipate any impacts to areas used for food and fiber production.

Mineral needs: The Corps does not anticipate impacts to areas are used for mineral extraction.

Consideration of property ownership: Project proponents are required to obtain private land owner approval prior to project implementation.

Needs and welfare of the people: The Corps does not anticipate impacts to needs and welfare of the people.

- 7.1.1 Climate Change. The proposed activities within the Corps federal control and responsibility likely will result in a negligible release of greenhouse gases into the atmosphere when compared to global greenhouse gas emissions. Greenhouse gas emissions have been shown to contribute to climate change. Aquatic resources can be sources and/or sinks of greenhouse gases. For instance, some aquatic resources sequester carbon dioxide whereas others release methane; therefore, authorized impacts to aquatic resources can result in either an increase or decrease in atmospheric greenhouse gas. These impacts are considered de minimis. Greenhouse gas emissions associated with the Corps federal action may also occur from the combustion of fossil fuels associated with the operation of construction equipment, increases in traffic, etc. The Corps has no authority to regulate emissions that result from the combustion of fossil fuels. These are subject to federal regulations under the Clean Air Act and/or the Corporate Average Fuel Economy (CAFE) Program. Greenhouse gas emissions from the Corps action have been weighed against national goals of energy independence, national security, and economic development and determined not contrary to the public interest.
- 7.2 The relative extent of the public and private need for the proposed structure or work:
The need is habitat restoration.
- 7.3 If there are unresolved conflicts as to resource use, explain how the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work was considered.

Discussion: There were no unresolved conflicts identified as to resource use.

- 7.4 The extent and permanence of the beneficial and/or detrimental effects that the proposed work is likely to have on the public and private use to which the area is suited:

Detrimental effects are expected to be minimal and temporary.

Beneficial effects are expected to be more than minimal and permanent.

Any detrimental effects would occur during construction. Benefits from restoration activities will be long term.

8.0 Mitigation(33 CFR 320.4(r), 33 CFR Part 332, 40 CFR 230.70-77, 40 CFR 1508.20 and 40 CFR 1502.14)

- 8.1 Avoidance and Minimization: When evaluating a proposal including regulated activities in waters of the United States, consideration must be given to avoiding and minimizing effects to those waters. Avoidance and minimization measures are described above in Sections 1 and 3.

Were any other mitigative actions including project modifications discussed with the applicant implemented to minimize adverse project impacts (see 33 CFR 320.4(r)(1)(i))? Yes

General conservation measures and project-specific conservation measures have been added to each activity category to minimize impacts to aquatic resources. Additionally, general conditions are included in the RGP.

- 8.2 Is compensatory mitigation required to offset environmental losses resulting from proposed unavoidable impacts to waters of the United States? No

Provide rationale: The projects to be authorized under RGP-6 are aquatic habitat restoration actions which will have an overall net environmental benefit and generally do not require mitigation. General conservation measures and project-specific conservation measures have been added to each activity category to minimize impacts to aquatic resources.

9.0 Consideration of Cumulative Impacts

(40 CFR 230.11(g) and 40 CFR 1508.7, RGL 84-9) Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor direct and indirect but collectively significant actions taking place over a period of time. A cumulative effects assessment should consider how the direct

and indirect environmental effects caused by the proposed activity requiring DA authorization (i.e., the incremental impact of the action) contribute to cumulative effects, and whether that incremental contribution is significant or not.

- 9.1 Identify/describe the direct and indirect effects caused by the proposed activity: Secondary impacts anticipated from the restoration projects include increases to stream flows in certain streams with the removal of culverts, fill, and other structures as well as the addition of streambank protection. Channel reconstruction would improve habitat but cause temporary secondary disturbance impacts from ground disturbing activities. Other activities that involve ground disturbance may cause secondary impacts to species in the area due to noise, displacement, and presence of construction equipment.
- 9.2 The geographic scope for the cumulative effects assessment is: the RGP geographic area, which includes the entire Columbia River basin in Oregon.
- 9.3 The temporal scope of this assessment covers: the next 10 years.
- 9.4 Describe the affected environment: Habitat restoration projects would be located throughout Oregon in the Columbia River basin.
- 9.5 Determine the environmental consequences: The Council on Environmental Quality's (CEQ's) NEPA regulations define cumulative effects as: "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 CFR 1508.7. Therefore, the NEPA cumulative effects analysis for an RGP is not limited to activities authorized by the RGP, other general permits, or other DA permits (individual permits). The NEPA cumulative effects analysis must also include other Federal and non-Federal activities that affect the Nation's wetlands, streams, and other aquatic resources, as well as other resources (e.g., terrestrial ecosystems, air) that may be directly or indirectly affected by the proposed action and other actions.

For the issuance of general permits, such as this RGP, the 404(b)(1) Guidelines require the permitting authority to "set forth in writing an evaluation of the potential individual and cumulative impacts of the categories of activities to be regulated under the general permit." [40 CFR 230.7(b)] If a situation arises in which cumulative effects are likely to be more than minimal and the proposed activity requires further review, or is more appropriately reviewed under the individual permit process, provisions of the RGP allow the district engineer to

take such action.

On a statewide basis, the RGP is expected to authorize approximately 10 projects each year. This estimation is, however, entirely subject to funding. During the construction period of 2011 through 2016, 51 projects were authorized under the current RGP-6. This trend is expected to continue for the next 5 year period of the re-issuance of the RGP.

9.6 Discuss any mitigation to avoid, minimize or compensate for cumulative effects: No mitigation is proposed since the projects will be restoration.

9.7 Conclusions regarding cumulative impacts:

When considering the overall impacts that will result from the proposed activity, in relation to the overall impacts from past, present, and reasonably foreseeable future activities, the incremental contribution of the proposed activity to cumulative impacts in the area described in section 9.2, are not considered to be significant. Compensatory mitigation will not be required to help offset the impacts to eliminate or minimize the proposed activity's incremental contribution to cumulative effects within the geographic area described in Section 9.2. Mitigation required for the proposed activity is discussed in Section 8.0.

10.0 Compliance with Other Laws, Policies, and Requirements

10.1 **Section 7(a)(2) of the Endangered Species Act (ESA):** Refer to Section 2.2 for description of the Corps action area for Section 7.

10.1.1 Has another federal agency been identified as the lead agency for complying with Section 7 of the ESA with the Corps designated as a cooperating agency and has that consultation been completed? Yes

If yes, identify that agency, the actions taken to document compliance with Section 7 and whether those actions are sufficient to ensure the activity(s) requiring DA authorization is in compliance with Section 7 of the ESA:

As lead federal agency for the aquatic habitat restoration actions, BPA initiated consultation with the USFWS and NMFS. Biological opinions were issued by both Services as noted below and include the aquatic habitat restoration activities proposed for inclusion within this RGP. Compliance with the terms and conditions of these opinions will be made a condition of the RGP.

(1) NMFS Biological Opinion: National Marine Fisheries Service. 2013. Endangered Species Act Section 7 Formal Programmatic Biological and Conference Opinion, Letter of Concurrence, and Magnuson-Stevens Fishery

Conservation and Management Act Essential Fish Habitat Consultation for Bonneville Power Administration's Habitat Improvement Program (HIP).

(2) USFWS Biological Opinion: Endangered Species Act—U.S. Fish and Wildlife Service. 2013. Formal Section 7 Programmatic Consultation on BPA's Columbia River Basin Habitat Improvement Program. Oregon Fish and Wildlife Office, Portland, Oregon. TAILS No. 01EOFW00-2013-F-0199.

NMFS concluded the proposed action is not likely to adversely affect the Eastern distinct population segment of Steller sea lion (*Eumetopias jubatus*), southern green sturgeon (*Acipenser medirostris*), Pacific eulachon (*Thaleichthys pacificus*), or designated critical habitat for southern green sturgeon or eulachon. The Steller sea lion does not have critical habitat designated in the action area. NMFS also concluded that the proposed program and activities authorized under that program are not likely to jeopardize the continued existence of the following 14 species, or result in the destruction or adverse modification of their designated or proposed critical habitats:

- Lower Columbia River Chinook salmon (*Oncorhynchus tshawytscha*)
- Upper Willamette River spring-run Chinook salmon
- Upper Columbia River spring-run Chinook salmon
- Snake River spring/summer-run Chinook salmon
- Snake River fall-run Chinook salmon
- Columbia River chum salmon (*O. keta*)
- Lower Columbia River coho salmon (*O. kisutch*)
- Oregon Coast coho salmon
- Snake River sockeye salmon (*O. nerka*)
- Lower Columbia River steelhead (*O. mykiss*)
- Upper Willamette River steelhead
- Middle Columbia River steelhead
- Upper Columbia River steelhead
- Snake River Basin steelhead

After reviewing the current status of the listed species, the environmental baseline within the action area, the direct and indirect effects of the proposed action, and cumulative effects, the USFWS concluded that the proposed action is not likely to jeopardize the continued existence of bull trout, Oregon chub, or marbled murrelets, or result in the destruction or adverse modification of critical habitat that has been designated for any of these species.

Other activities that are still considered restoration projects, but that do not fit under a BPA programmatic biological opinion listed above will be required to complete ESA consultation and may fit the following programmatic biological opinions under Level 3:

(1) Programmatic Restoration Opinion for Joint Ecosystem Conservation by the

Services (PROJECTS) by the U.S. Fish and Wildlife Service Using the Partners for Fish and Wildlife, Fisheries, Coastal, and Recovery Programs and NOAA Restoration Center Using the Damage Assessment, Remediation and Restoration Program (DARRP), and Community-Based Restoration Program (CRP) in the States of Oregon, Washington, and Idaho, December 3, 2013.

(2) Re-initiation of the Endangered Species Act Section 7 Formal Programmatic Conference and Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for Aquatic Restoration Activities in the States of Oregon and Washington (ARBO II), April 25, 2013.

10.1.2 Are there listed species or designated critical habitat present or in the vicinity of the Corps' action area? Yes

Effect determination(s), including no effect, for all known species/habitat, and basis for determination(s): See the attached ORM2 Summary sheet for the list of species in the action area and the effect determination for those species where the Corps completed either individual or programmatic consultation.

The Corps determined the work would have no effect on the following specie(s):
N/A

10.1.3 Consultation with either the National Marine Fisheries Service and/or the U.S. Fish and Wildlife Service was initiated and completed as required, for any determinations other than "no effect" (see the attached ORM2 Summary sheet for begin date, end date and closure method of the consultation). Based on a review of the information above, the Corps has determined that it has fulfilled its responsibilities under Section 7(a) (2) of the ESA. The documentation of the consultation is incorporated by reference.

10.2 **Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), Essential Fish Habitat (EFH).**

10.2.1 Has another federal agency been identified as the lead agency for complying with the EFH provisions of the Magnuson-Stevens Act with the Corps designated as a cooperating agency and has that consultation been completed? Yes

If yes, identify the agency, the actions taken to document compliance with the Magnuson Stevens Act and whether those actions are sufficient to ensure the activity(s) requiring DA authorization is in compliance the EFH provisions:

BPA prepared an EFH assessment and consulted on EFH. NMFS anticipates that implementation of the conservation measures contained in the consultation and other considerations outlined previously will avoid, minimize or otherwise offset potential adverse effects to EFH in the proposed action area. All projects

conducted under RGP-6 will be required to meet the terms and conditions of the BiOp (for both ESA and EFH).

10.2.2 Did the proposed project require review under the Magnuson-Stevens Act? Yes

10.2.3 If yes, EFH species or complexes considered: See above

Effect(s) determination and basis for that determination(s): See above

10.2.4 Consultation with the National Marine Fisheries Service was initiated and completed as required (see the attached ORM2 Summary sheet for consultation type, begin date, end date and closure method of the consultation). Based on a review of the above information, the Corps has determined that it has fulfilled its responsibilities under EFH provisions of the Magnuson-Stevens Act.

10.3 **Section 106 of the National Historic Preservation Act (Section 106):** Refer to Section 2.3 for permit area determination.

10.3.1 Has another federal agency been identified as the lead federal agency for complying with Section 106 of the National Historic Preservation Act with the Corps designated as a cooperating agency and has that consultation been completed? Yes

If yes, identify that agency, and whether the undertaking they consulted on included the Corps undertaking(s). Briefly summarize actions taken by the lead federal agency:

For this RGP, BPA is the lead Federal agency for compliance under Federal cultural resources and historic preservation laws and regulations. BPA is responsible for compliance with the National Historic Preservation Act (NHPA). BPA 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).

Coordination with the appropriate tribes must occur as part of the planning process. This process may occur through a locally established protocol between BPA and a Tribe. Coordination with the State Historic Preservation Office (SHPO) is required as well. To document compliance with Section 106, the pre-construction notification must indicate that archeological review has occurred.

10.3.2 Known historic properties present? Unknown, will be based on individual reviews of projects.

Effect determination and basis for that determination: N/A

10.3.3 Consultation was initiated and completed with the appropriate agencies, tribes and/or other parties for any determinations other than “no potential to cause effects” (see the attached ORM2 Summary sheet for consultation type, begin date, end date and closure method of the consultation). Based on a review of the information above, the Corps has determined that it has fulfilled its responsibilities under Section 106 of the NHPA. Compliance documentation incorporated by reference. Under the RGP, no individual project will proceed until requirements under federal cultural resources and historic preservation laws and regulations are met.

10.4 Tribal Trust Responsibilities

10.4.1 Was government-to-government consultation conducted with Federally-recognized Tribe(s)? No. However, the RGP requires that no activity or its operation impairs reserved tribal rights, including but not limited to, reserved water rights and treaty fishing and hunting rights. Therefore, consultation with tribes on an individual project basis may be necessary to ensure compliance with the RGP.

10.4.2 Other Tribal including any discussion of Tribal Treaty rights? See 10.4.1.

10.5 Section 401 of the Clean Water Act – Water Quality Certification (WQC)

10.5.1 Is a Section 401 WQC required, and if so, has the certification been issued, waived or presumed? A general WQC has been issued for this permit.

10.6 Coastal Zone Management Act (CZMA)

10.6.1 Is a CZMA consistency concurrence required, and if so, has the concurrence been issued, waived or presumed? A general CZMA consistency concurrence has been issued for this permit.

10.7 Wild and Scenic Rivers Act

10.7.1 Is the project located in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system? A general condition is included in the RGP that no activity may occur in such river unless the appropriate agency has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

If yes, summarize coordination and the determination on whether the activity will adversely affect the Wild and Scenic River designation or study status. The Corps has determined that it has fulfilled its responsibilities under the Wild and Scenic Rivers Act.

10.8 Effects on Corps Civil Works Projects (33 USC 408)

10.8.1 Does the applicant also require permission under Section 14 of the Rivers and Harbors Act (33 USC 408) because the activity, in whole or in part, would alter, occupy or use a Corps Civil Works project? Maybe.

If yes, provide date that decision was made and whether permission was granted or denied : The applicant will be required to receive 408 permission if necessary and provide documentation to the Corps.

10.9 Corps Wetland Policy (33 CFR 320.4(b))

10.9.1 Does the project propose to impact wetlands? Yes

10.9.2 Based on the public interest review herein, the beneficial effects of the project outweigh the detrimental impacts of the project.

10.10 **Other (as needed):** N/A

11.0 Special Conditions

11.1 Are special conditions required to protect the public interest, ensure effects are not significant and/or ensure compliance of the activity with any of the laws above? Special conditions may be required for each individual approval (except Level 1) but this will be determined on a project specific basis, as appropriate.

12.0 Findings and Determinations

12.1 Section 176(c) of the Clean Air Act General Conformity Rule Review: The proposed permit action has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed de minimis levels of direct or indirect emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps' continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit action.

12.2 Presidential Executive Orders (EO):

12.2.1 EO 13175, Consultation with Indian Tribes, Alaska Natives, and Native Hawaiians: This action has no substantial effect on one or more Indian tribes, Alaska or Hawaiian natives.

- 12.2.2 EO 11988, Floodplain Management: Alternatives to location within the floodplain, minimization and compensatory mitigation of the effects were considered above.
- 12.2.3 EO 12898, Environmental Justice: The Corps has determined that the proposed project would not use methods or practices that discriminate on the basis of race, color or national origin nor would it have a disproportionate effect on minority or low-income communities.
- 12.2.4 EO 13112, Invasive Species: Through special conditions, which are listed in this evaluation, the permittee will be required to control the introduction and spread of exotic species.
- 12.2.5 EO 13212 and EO 13302, Energy Supply and Availability: The proposal is not one that will increase the production, transmission, or conservation of energy, or strengthen pipeline safety.
- 12.3 Findings of No Significant Impact: Having reviewed the information provided by the applicant and all interested parties and an assessment of the environmental impacts, I find that this permit action will not have a significant impact on the quality of the human environment. Therefore, an environmental impact statement will not be required.
- 12.4 Compliance with the Section 404(b)(1) Guidelines: Having completed the evaluation above, I have determined that the proposed discharge complies with the Guidelines.
- 12.5 Public interest determination: Having reviewed and considered the information above, I find that the proposed project is not contrary to the public interest.

PREPARED BY:

Carrie L Bond

7-5-18

Carrie L. Bond
Team Leader

Date

REVIEWED BY:

Jaimie W. Davis

5 July 2018

Jaimie W. Davis
Section Chief, Regulatory Branch

Date

REVIEWED BY:

William D. Abadie

31 July 2018

William D. Abadie
Chief, Regulatory Branch

Date

APPROVED BY:

Aaron L. Dorf

31 July 2018

Aaron L. Dorf
Colonel, Corps of Engineers
District Commander

Date