Supplement Analysis
for the
Columbia River Basin Tributary Habitat Restoration
Programmatic Environmental Assessment
(DOE/EA-2126/SA-70)

Big Meadow Creek Fish Passage and Stream Restoration Project
BPA project number 2008-604-00
BPA contract number 84063 REL 12

Bonneville Power Administration
Department of Energy

Introduction

In December 2020, Bonneville Power Administration (BPA) and the Bureau of Reclamation completed the *Columbia River Basin Tributary Habitat Restoration Programmatic Environmental Assessment* (DOE/EA-2126) (Programmatic EA). The Programmatic EA analyzed the potential environmental impacts of implementing habitat restoration actions in the Columbia River Basin and its tributaries.

Consistent with the Programmatic EA, this Supplement Analysis (SA) analyzes the effects of the Big Meadow Creek Fish Passage and Stream Restoration Project (project). The project would implement many of the specific restoration actions assessed in the Programmatic EA in the Big Bear Creek watershed in Latah County, Idaho. The objectives of the project are to enhance fish passage; secure and maintain perennial flow; and improve riparian function, floodplain access, and instream complexity for the benefit of Endangered Species Act (ESA)-listed steelhead (*Oncorhynchus mykiss)*.

This SA also evaluates whether the proposed project presents substantial new circumstances or information about the significance of the adverse effects that bear on the analysis and that were not addressed by the EA. The findings of this SA determine whether additional National Environmental Policy Act (NEPA) analysis is needed under 10 C.F.R. § 1021 et seq.

Proposed Activities

BPA proposes funding the Idaho Department of Fish and Game (IDFG) to complete the project located on private property along Big Meadow Creek, approximately 4 miles north of its confluence with West Fork Little Bear Creek and the City of Troy in Latah County, Idaho (Figure 1). The proposed actions would directly impact approximately 2 acres. The project would improve fish passage by replacing an undersized culvert; improve floodplain interactions by excavating a side channel; and increase steelhead rearing habitat by installing instream structures and planting native riparian plants.

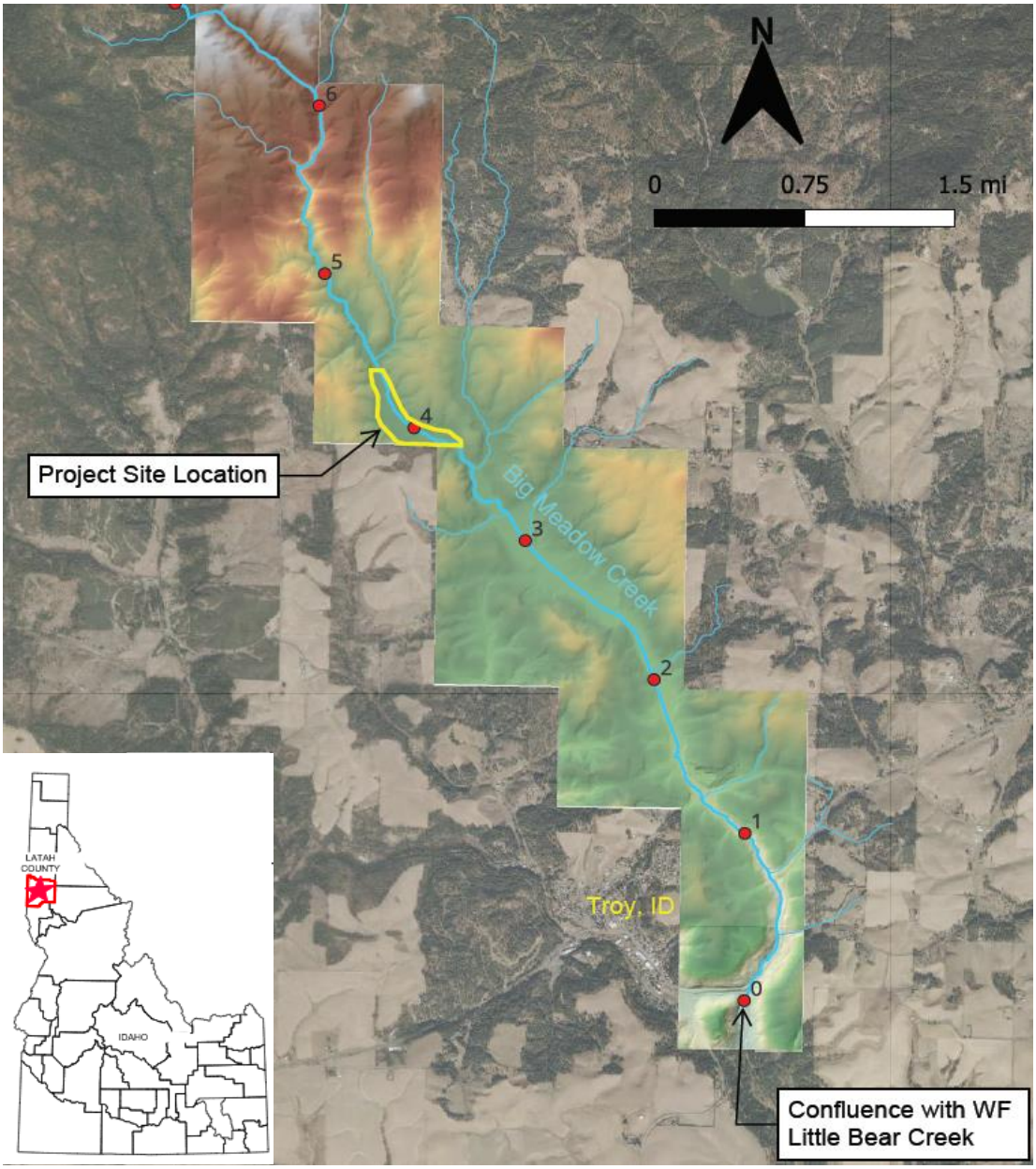

Figure 1. Location of proposed action.

Approximately 780 cubic yards of material would be excavated to activate a 400-foot-long side channel that ties into an existing pond before reconnecting to the main channel. Wood structures would be installed in the existing main channel that is adjacent to the proposed side channel. Three beaver dam analogues would be installed by building layers of branches, limbs, or small logs filled with finer fill materials such as mud, clay, soil, gravel, roots, leaves, needles, and grass, until water ponds behind the structure to the desired crest elevation. Posts may be driven through the structure and into the stream bed to help anchor the structure. Approximately six willow baffles, consisting of 60 live willow stakes per 20 feet, would be planted on either side of the newly excavated side channel downstream of the pond.

Instream construction elements would take place within the approved in-water work window, August 1 to October 30. Other elements that could be constructed with no exposure to stream flow, such as excavation for the side channel, may occur prior to the in-water work window. Work would require the use of heavy equipment such as excavators, dump trucks, and haul trucks. Site access, staging, and

sequencing would be implemented in accordance with conservation measures and terms and conditions outlined in BPA's Fish and Wildlife Habitat Improvement Program (HIP) Biological Opinions. Construction access would mainly be on Big Meadow Road, Umbarger Road, and private property. Temporary access routes (approximately 650 feet) and staging areas (approximately 0.2 acre) would be on private pasture land. Erosion and sediment controls would be installed and maintained throughout construction and until all disturbed soils are revegetated or stabilized. Sod and willows would be salvaged where ground disturbance occurs and used for revegetation of disturbed areas. All temporary access routes and compacted areas would be roughened and reclaimed to pre-existing conditions after construction. All disturbed project areas would be seeded with a native plant seed mix. Riparian areas would be planted with native trees and shrubs following construction in the fall and additional plantings would be conducted annually for the next three years.

IDFG would monitor the effectiveness of project actions for several years after construction is complete. If failures in system function, structure function and integrity, or risks to infrastructure, riverscape processes, or fish passage occur, IDFG would implement adaptive management procedures. These procedures would include modification of structures (not to exceed the addition of more than 100 percent of materials used during original construction of the structure) and replanting or reseeding if there were low survival (less than 60 percent) or establishment of native vegetation in restored areas.

Funding this project would benefit Snake River Basin steelhead and would fulfill commitments under the 2020 National Marine Fisheries Service Columbia River System Biological Opinion (2020 NMFS CRS BiOp). These actions also support BPA's commitments to the State of Idaho in the Columbia River Fish Accord, as amended, while also supporting ongoing efforts to mitigate for effects of the Federal Columbia River Power System on fish and wildlife in the mainstem Columbia River and its tributaries pursuant to the Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Northwest Power Act) (16 U.S.C. (USC) 839 *et seq*.).

Environmental Effects

The implementation of this project requires the use of construction crews and equipment which would disturb and displace soil in and along the stream; damage vegetation; produce noise and vehicle emissions; and temporarily increase vehicle traffic and human activity in the project area. Chapter 3 of the Programmatic EA, as summarized in relevant parts below, discusses typical environmental disturbances and impacts stemming from habitat restoration in the Columbia River Basin. Below is a description of the potential site-specific effects of the project and an assessment of whether these effects are consistent with those described in the Programmatic EA.

1. Fish and Aquatic Species

The effects of using mechanized equipment and manually working in and along Big Meadow Creek are consistent with the analysis in the Programmatic EA, Section 3.3.1 ("Fish and Aquatic Species"), which describes overall low impacts to fish and aquatic species after considering moderate short-term adverse effects and beneficial long-term improvements.

Snake River Basin steelhead, listed under the ESA as Threatened, and their designated critical habitat are present in the project area. No other ESA-listed or state-listed species are known to be present within the project area. BPA completed ESA Section 7 consultation on the effects of the project's actions on steelhead in its HIP programmatic ESA consultation, which found that such actions would likely adversely affect these species and their designated critical habitat in the short term but would not likely result in jeopardy to the species or result in destruction or adverse modification of their designated critical habitat.

In the short term, movement, sounds, and vibrations from construction-related human and mechanical activity would likely temporarily disturb and displace fish and aquatic organisms from their existing

habitats for the duration of the disturbance. The project would also expose, displace, reconfigure, or compact earth using mechanized equipment within and along Big Meadow Creek**,** likely causing immediate, moderate, temporary sediment discharges and potential sediment discharges after introduction of first-time flows into the newly constructed area. Impacts would be minimized because the excavation for the side channel would be accomplished "in the dry" with no exposure to stream flows. Where it is not possible to work "in the dry" for the culvert replacement, the work area would be isolated from the main channel and dewatered. Dewatered work areas would require fish and aquatic organism salvage prior to complete dewatering and would likely kill aquatic organisms (e.g., invertebrates) not able to survive the dewatering and not large enough to be effectively salvaged. Fish salvage involves electro-shocking, capture, and handling to relocate the fish, which is stressful for individual fish but avoids leaving the fish stranded in a dewatered location.

Project actions would be subject to the conservation measures from BPA's HIP consultations, including conducting instream work during the approved in-water work window to avoid impacts to fish at critical life stages, such as during spawning, and having appropriate erosion and sediment controls installed prior to any work being conducted. Though the amount of sediment discharged would be elevated, turbidity levels would be below levels harmful to fish and at durations not anticipated to cause harm as evaluated in Section 3.3.1.2.1 of the Programmatic EA ("*Short-Term Effects to Fish and Aquatic Species from Construction Activities*").

The anticipated amount of activity and aquatic species disturbance is consistent with the analysis in Sections 3.1.3.1 and 3.3.1.2.1 of the Programmatic EA ("*Dewatering for Instream Work*" and "*Short-Term Effects to Fish and Aquatic Species from Construction Activities*," respectively). The Programmatic EA discussed direct, harmful, and sometimes fatal impacts to aquatic species, including displacement of fish from their preferred habitat during periods of movement, sounds, and vibrations from human and mechanical activity.

Project implementation would have beneficial long-term effects on fish and aquatic species resulting from improved fish passage and enhanced riparian cover along the new side channel. The project would also lead to increased connectivity to the floodplain that would reduce occurrences of fish stranding during low flows. The beneficial effects are consistent with the analysis in Section 3.3.1.2.2 of the Programmatic EA ("*Effects to Fish and Aquatic Organisms unique to the Categories of Action*").

2. Water Resources

The effects of using mechanized equipment and manually working in and along Big Meadow Creek are consistent analysis in Section 3.3.2 of the Programmatic EA ("*Water Resources*"), which describes overall low water quality impacts after considering moderate short-term adverse effects and beneficial long-term effects. There would likely be a low effect on water quantity, as this project would make no water withdrawals, but there could be increased groundwater recharge since the connection between surface flows and the floodplain would be increased over both space and time.

Overall, this project would create short-term, localized sediment inputs from the impacts of using mechanized equipment along the creek to replace the culvert. There would also be localized sediment inputs during rewatering after actions done "in the dry" are completed, such as excavation to create a new side channel and installation of wood structures. However, impacts would be minimized by following HIP requirements for staged rewatering. Restoration actions would disturb lengths of stream or riverbank consistent with the analysis in Section 3.3.2.2.2.1 of the Programmatic EA ("*Sedimentation and Turbidity Effects*") but resulting sediment discharges are not likely to be greater than what occurs naturally during annual high-flow events. These would be short-term effects and would be lessened by the application of mitigation measures, such as installing sediment barriers in all work areas, removing vegetation and soil from equipment before starting work and where feasible, operating equipment from the bank or previously cleared areas, as detailed in Section 2.4 of the Programmatic EA ("*Mitigation*

Measures and Design Criteria"). The long-term effects of this project, however, would be a decreased potential for unnatural sediment inputs; an increased potential of the floodplain to effectively manage its sediment loads; and a reduction of stream temperatures from instream habitat structure and increased riparian vegetative cover. These long-term beneficial effects are consistent with those described in the Programmatic EA.

3. Vegetation

The effects of using mechanized equipment and manually working in and along Big Meadow Creek are consistent with the analysis in Section 3.3.3 of the Programmatic EA ("*Vegetation*"), which describes overall moderate impacts to vegetation after considering moderate short-term adverse effects and highly beneficial long-term effects.

No ESA-listed or state-listed plant species are known to exist within the proposed project area. The USFWS Information for Planning and Conservation (IPaC) tool lists Spalding's catchfly (*Silene spaldingii*), ESA-listed Threatened, as having the potential to be present in the project area. However, there is no designated critical habitat and no confirmed presence of the species in the project area. Due to current grazing in the project area and agricultural use of the surrounding lands, it is highly unlikely Spalding's catchfly is present; therefore, the project would have no effect on ESA-listed plant species.

Project implementation, including excavation for the side channel, culvert replacement, installation of wood structures, and establishment of access routes and staging areas, would have moderate short-term impacts on vegetation. Plants within the project area would be removed, graded over, and trampled during implementation. Disturbance to riparian areas would be minimized per mitigation measures, such as seeding and planting native species in any disturbed areas and preventing the spread of noxious weeds by washing construction equipment and applying weed control measures at the site. Increased floodplain inundation and planting of willow baffles in riparian areas would improve vegetation diversity and density in the long-term. Thus, the overall effects of the project would be moderate and would be consistent with the effects described in the Programmatic EA.

4. Wetlands and Floodplains

Project activities are expected to have impacts to wetlands and floodplains that are consistent with the analysis in Section 3.3.4 of the Programmatic EA ("*Wetlands and Floodplains*"), which describes low overall impacts to wetlands and floodplains after considering short-term adverse effects and beneficial long-term effects.

Wetlands in the project area are classified by the National Wetlands Inventory as riverine, which includes all wetlands and deepwater habitats contained within a channel. By design, proposed construction activities would occur in riverine wetlands; heavy equipment use and earth-moving activities during project construction would have short-term negative impacts. IDFG would obtain required permits issued by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act and would adhere to all requirements and prescriptions set forth in the permit.

Consistent with the analysis in the Programmatic EA, there would be long-term beneficial effects from increased wetland acreage and connectivity between the main and side channel and floodplain. Side channel activation and wood placement would slow stream flows, increase floodplain inundation potential, and provide more efficient sediment movement and retention. Greater floodplain connectivity from the side channel would result in improvements to wetland hydrology and quality and re-establishment of native vegetative communities.

5. Wildlife

The effects of using construction equipment and manually working in and along Big Meadow Creek are consistent with the analysis in Section 3.3.5 of the Programmatic EA ("*Wildlife*"), which describes low impacts to wildlife after considering short-term adverse effects and beneficial long-term effects.

No ESA-listed or state-listed wildlife species are known to exist within the proposed project area. IPaC lists the monarch butterfly (*Danaus plexippus*), ESA-proposed Threatened, and Suckley's cuckoo bumble bee (*Bombus suckleyi*), ESA-proposed Endangered, as having the potential to be present in the project area. There is no proposed designated critical habitat and no confirmed presence of either species in the project area. Due to current grazing practices in the project area and agricultural use of the surrounding lands, it is unlikely these species would be present because the plants needed to support feeding and breeding are not present in the project area. Therefore, the project would have no effect on ESA-listed wildlife species.

In the short-term, human presence would cause noise and movement that temporarily disturbs or displaces local wildlife. Construction activities would destroy the habitats of small animals but would only temporarily displace medium-sized or larger animals from their preferred habitats during construction, and they would likely re-occupy the site once human activity moved or ceased. Construction activities would occur in mid- to late summer, and would thus avoid disturbance to migratory bird nesting, which occurs in the spring. Abundant similar wildlife habitat is present adjacent to the project area, and effects would be limited in duration, thus, there would be no long-term adverse impacts to wildlife habitat.

In the long-term, the proposed project would improve riparian vegetation and wildlife habitats along Big Meadow Creek, increasing the area's capacity to support both a higher number and a higher diversity of wildlife species. The overall effects of this project would be low and consistent with those evaluated in the Programmatic EA.

6. Geology and Soils

The effects of using construction equipment in and along Big Meadow Creek are consistent with the analysis in Section 3.3.6 of the Programmatic EA ("*Geology and Soils*"), which anticipates low overall effects after accounting for mitigation measures and long-term benefits. The overall effects of this project would be consistent with those evaluated in the Programmatic EA.

Project construction activities – including excavation for a side channel, culvert replacement, large wood installation, and soil compaction by heavy equipment – would temporarily increase localized soil erosion potential and decrease soil structure. However, use of erosion and sediment control measures, coupled with post-construction site-restoration activities, including site decompaction and re-seeding, would mitigate these impacts.

Long-term improvement to soils is expected once disturbed surfaces are re-seeded and riparian plantings are established and stabilize the soil surface. Long-term improvement to sediment transport and floodplain access within the project reach would restore natural sediment-forming processes.

7. Transportation

The project's transportation impacts are consistent with the analysis in Section 3.3.7 of the Programmatic EA ("*Transportation*"), which describes a low impact given the temporary nature of any effects on roads.

The project area is accessible via Big Meadow Creek Road, which runs adjacent to the project area. The culvert is on Umbarger Road, just before its intersection with Big Meadow Creek Road. A temporary

road, approximately 70 feet in length, would be installed to reroute traffic around the culvert construction for the duration of the culvert replacement (about one week). The alternate route would be clearly marked with traffic signs and would allow the public to access Umbarger Road with brief traffic delays during construction. The alternate route would be removed after construction. Off-road access to the project area for construction would be provided by private roads or temporary access routes developed during project mobilization. Big Meadow Creek and Umbarger roads would not be blocked or closed during the scheduled implementation. However, congestion may occur for short periods along both roads as vehicles transport workers and equipment to the project area. Overall, the project would have a low effect on transportation due to the short duration of vehicle congestion near the work area.

8. Land Use and Recreation

Impacts to land use and recreation are consistent with the analysis in Section 3.3.8 of the Programmatic EA ("*Land Use and Recreation*"). The Programmatic EA concludes that land use practices at underlying project sites would remain unchanged in most cases, but some would have low to moderate effects due to changing grazing practices or reversion of agricultural uses back to historic wetland and riparian conditions. The Programmatic EA also concludes that low to moderate effects on recreation would most likely occur on public lands and would likely have no effect on private lands.

The project is located on private land and has no public recreational opportunities. The staging area would be located on private land that is used for cattle grazing. Cattle would be moved to surrounding lands that are currently used for grazing during construction to avoid activity around the staging area. Cattle would be allowed to return once construction is completed. The project's overall effects on land uses would be low, and there would be no impact to recreation, consistent with those evaluated in the Programmatic EA.

9. Visual Resources

Impacts of the proposed actions on visual resources are consistent with the analysis in Section 3.3.9 of the Programmatic EA ("*Visual Resources*"), which concluded the effects on scenic values would be low. The proposed project area is not located within a visually sensitive area, but users of Big Meadow Creek and Umbarger roads would be able to see project activities. Road users would see heavy equipment during project implementation and the result of project activities, including large wood structures across the floodplain, a new culvert, a newly excavated side channel, and exposed soil until vegetation is re-established. After vegetation re-establishment, the project area would have a natural appearance and would not visually detract from the area.

10. Air Quality, Noise, and Public Health and Safety

The effects of the project in and along Big Meadow Creek are consistent with the analysis in Section 3.3.10 of the Programmatic EA ("*Air Quality, Noise, and Public Health and Safety*"), which describes low impacts to air quality, noise, and public health and safety.

Air quality impacts from exhaust and dust emissions from construction equipment would be temporary and localized in nature, with no long or short-term violations of state air quality standards expected because of project implementation. Although construction, transportation, and site rehabilitation activities would temporarily elevate ambient noise levels at the construction site, the project would not result in long-term changes to noise levels. There are two residences within 1,000 feet of the project area and they belong to the property owners participating in the project, so they would be aware of proposed construction activities and expect elevated noise levels. Other residents with homes within

0.5 mile of the project area may hear muted construction noise, but nothing above typical traffic noise on Big Meadow Creek Road and noise would only occur during daylight hours. Adequate signage and other routine safeguards would minimize risks to worker and public safety for the duration of construction and site restoration.

11.Cultural Resources

The effects of the project on cultural resources are consistent with the analysis in Section 3.3.11 of the Programmatic EA ("*Cultural Resources*"), which describes low impacts to cultural resources because project construction would avoid cultural resources and the National Historic Preservation Act (NHPA) Section 106 consultation process would appropriately resolve any effects.

BPA conducted a NHPA Section 106 consultation with the Idaho State Historic Preservation Office (SHPO), Nez Perce Tribe, and Confederated Salish and Kootenai Tribes on the effects of the project (BPA project number: ID 2024 084). An intensive cultural resource survey and exploratory subsurface shovel test probes were conducted in the project area. On May 16, 2025, BPA made a determination of no historic properties affected. On May 23, 2025, the Nez Perce Tribe responded seeking additional information about some of the technical aspects of the inventory effort. On May 23, 2025, BPA responded to the Nez Perce Tribe with clarifying information. On May 23, 2025, Idaho SHPO concurred with BPA's determination and concluded that the proposed work would have no effect to historic properties (SHPO Project No.: 2025-715). No additional response was received from the Nez Perce Tribe and no response was received from the Confederated Salish and Kootenai Tribes by the end of the 30-day comment period.

As described in the Programmatic EA, the results of this consultation were that the project would not adversely affect historic properties. In the unlikely event that cultural material is inadvertently encountered during the implementation of this project, BPA would require that work be halted in the vicinity of the finds until they can be inspected and assessed by BPA in consultation with the appropriate consulting parties.

12. Socioeconomics

The effects of the project are consistent with the analysis in Section 3.3.13 of the Programmatic EA ("*Socioeconomics and Environmental Justice*"), which describes low socioeconomic impacts. The project would have small, temporary, but beneficial socioeconomic impacts by providing jobs for construction workers and increasing spending on food, fuel, lodging, and materials at local businesses. The project would not result in requirements for additional permanent employees or for individuals to leave the local area or relocate within it, nor would it affect housing availability for local populations, displace people, or eliminate residential suitability of lands being restored or near them. The project is located on private land and other than the residences owned by the underlying landowners, there would be no effects to existing residences.

13. Climate Change

The effects of project activities on climate change are consistent with the analysis in Section 3.3.14 of the Programmatic EA ("*Climate Change*"), which describes overall low effects to climate change. Due to the short duration of construction activities and the relatively small number of vehicles and equipment involved, project-related greenhouse gas emissions are anticipated to be low. This minimal contribution to climate change would be offset to some degree by the increased functioning of the floodplain including increased water table inputs, increased carbon sequestration in expanded and improved

wetland habitats, and potentially decreased water temperatures from improved instream and riparian habitat conditions.

Findings

BPA finds that the types of restoration actions and the potential impacts related to the proposed Big Meadow Creek Fish Passage and Stream Restoration Project have been examined, reviewed, and consulted upon and are similar to those analyzed in the Columbia River Basin Tributary Habitat Programmatic EA (DOE/EA-2126) and Finding of No Significant Impact. There are no substantial changes in the EA's Proposed Action and no substantial new circumstances or information about the significance of the adverse effects that bear on the analysis in the EA's Proposed Action or its impacts within the meaning of 10 C.F.R. § 1021.314 and 40 C.F.R. § 1502.9.1. 1 Therefore, no further NEPA analysis or documentation is required.

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[1] BPA is aware that the Council on Environmental Quality (CEQ), on February 25, 2025, issued an interim final rule to remove its NEPA implementing regulations at 40 C.F.R. Parts 1500–1508. Based on CEQ guidance, and to promote completion of its NEPA review in a timely manner and without delay, in this SA BPA is voluntarily relying on the CEQ regulations, in addition to DOE's own regulations implementing NEPA at 10 C.F.R. Part 1021, to meet its obligations under NEPA, 42 U.S.C. §§ 4321 *et seq*.