

Supplement Analysis
for the
Columbia River Basin Tributary Habitat Restoration
Programmatic Environmental Assessment
(DOE/EA 2126/SA-22)

Pahsimeroi River 2022 Restoration Projects
Bonneville project number 2008-603-00
Bonneville contract numbers 90250 and 76913 rel 33

Bonneville Power Administration
Department of Energy



Introduction

In December 2020, Bonneville Power Administration (Bonneville) 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 *Pahsimeroi River 2022 Restoration Projects*, which are three proposed projects that would implement many of the specific restoration actions assessed in the Programmatic EA in the lower Pahsimeroi River valley in Lemhi and Custer counties, Idaho (the Pahsimeroi River is the county line). The objectives are to increase in-stream habitat diversity; reduce water temperatures; and improve riparian and floodplain vegetative diversity for the benefit of Endangered Species Act-listed salmonids. This SA analyzes the site-specific impacts of the Pahsimeroi River 2022 Restoration Projects to determine if the projects are within the scope of the analysis considered in the Programmatic EA. It also evaluates whether the proposed projects present significant new circumstances or information relevant to environmental concerns that were not addressed by the EA. The findings of this SA determine whether additional National Environmental Policy Act (NEPA) analysis is needed pursuant to 40 Code of Federal Regulations (CFR) § 1502.9(d) and 10 CFR 1021 *et seq.*

Proposed Actions

This SA analyzes the effects of three distinct projects: *Last Chance Springs Phase II Habitat Improvements* (Last Chance Phase II), *Lower Duck Creek Habitat Improvements* (Lower Duck), and *Muddy Springs Habitat Project Phase II* (Muddy Springs Phase II). These three projects share the same objectives; would be geographically close together; would impact aquatic, riparian, and floodplain environments that are very similar in their existing condition; and would implement many of the same habitat restoration actions.

The *Last Chance Phase II* project would be located in the lower end of the Pahsimeroi Valley between Ellis and May, Idaho. Four miles up the valley, near May, Idaho (an unincorporated community with a post office and seven residences), is the *Lower Duck* project. The *Muddy Springs Phase II* project would be located 0.7 mile west of the *Lower Duck* project. All of these project areas would be located on small

streams that have been heavily grazed and are now over-widened and lacking in riparian vegetation such as willows and cottonwoods; and lacking in-stream habitat features such as rocks, logs, beaver dams, and overhanging vegetation or undercut vegetatively-stabilized banks.



The three projects would build in-stream islands; place large wood habitat structures (single or multiple whole trees) in the river; construct in-stream pools; construct and extend river banks into existing channels to narrow stream widths; reinforce those extended banks with native sedge mats and willow clumps; install in-stream brush mattresses (woven brush branches atop a wooden frame at the water surface to provide cover for young fish); install post-line wicker weaves (artificial beaver dam-like structures) that fully or partially span the river; and revegetate the projects' riparian areas with native plantings and seeding. The environmental effects of these types of restoration actions were evaluated in the Programmatic EA.

The Last Chance Phase II project is along 1,100 feet of a small (5 to 10 feet wide), spring channel. The project would construct approximately 10 islands; install approximately 28 log and whole tree structures; construct 3 pools and 6 brush mattresses; transplant 48 willow clumps; construct approximately 150 linear feet of willow banks; and install 3 post-line wicker weaves within its project area. The site-specific work area for the large constructed features (islands, pools, large instream wood structures) would typically be less than 1,000 square feet, the duration of each restoration action would be just a few hours, and work areas would be separated from each other, typically by about 50 to 150 feet.

The Lower Duck project would treat approximately 3,800 feet of the lowest reach of Duck Creek, which is a small, spring channel. The project would construct approximately 11 islands; install approximately 97 log and whole tree structures; construct 10 pools and 3 brush mattresses; transplant 270 willow clumps (some installed vertically, some horizontally); construct approximately 280 linear feet of willow banks; and install 21 post-line wicker weaves within its project area. The work area size, duration, and spacing would be similar to that in the Last Chance Phase II project.

The Muddy Springs project would treat approximately 3,700 feet of Muddy Springs Creek. The project would construct approximately 3 islands; install approximately 46 log and whole tree structures; construct approximately 840 linear feet of sedge benches, 870 linear feet of willow banks, and 310 feet of log and brush stream bank cover; and install 8 post-line wicker weaves within its project area. Additionally, an 80-foot backwater channel would be excavated to provide stream flows to a low-lying floodplain area adjacent to Muddy Springs Creek. The work area size, duration, and spacing would be similar to that in the Last Chance Phase II project.

All project areas would be planted with containerized native shrubs, hydroseeded, treated for invasive plants, and be restricted to cattle grazing through fencing, grazing plans, or conservation easement conditions.

Funding the proposed activities fulfills commitments under the 2020 National Marine Fisheries Service Columbia River System Biological Opinion (2020 NMFS CRS BiOp). These proposed activities also fulfill commitments specified in the 2020 U.S. Fish and Wildlife Service Columbia River System BiOp (2020 FWS CRS BiOp) 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 these projects requires the use of a small track-mounted machine such as a skid steer, or a rubber-tired backhoe, for shaping banks, building islands, moving sod, and installing large wood structures. The construction of willow mattresses and post-line wicker weaves (PLWWs); placement of sedge mats; and plantings of willow clumps and containerized plants would all be conducted by hand. All of these restoration actions would disturb and displace soil in and along the streams; damage vegetation; create noise and vehicle emissions; and temporarily increase vehicle traffic and human activity in the project areas. The typical effects associated with the environmental disturbances created by these three projects are described in Chapter 3 of the Programmatic EA, and are incorporated by reference and summarized in this document.

Below is a description of the potential site-specific effects of the Last Chance Phase II, Lower Duck, and Muddy Springs Phase II projects, and an assessment of whether these effects are consistent with those described in the Programmatic EA. These projects are designed to improve both aquatic and riparian habitats for the long term, so the adverse effects from soil and vegetation disturbance, and from human and mechanical activity, as detailed below, would be short term only.

1. Fish and Aquatic Species

The effects of using small equipment and manually working in and along the affected creeks are consistent with the analysis in the Programmatic EA, "*Fish and Aquatic Species*," Section 3.3.1. The Programmatic EA, Section 3.3.1.3, describes overall low impacts to fish and aquatic species after balancing moderate short-term adverse effects against highly beneficial long-term effects.

Three species listed under the Federal Endangered Species Act are present in the project area: Snake River spring/summer Chinook salmon (part of the Upper Salmon Major Population Group), Snake River steelhead (part of the Salmon River Major Population Group), and bull trout. The State of Idaho lists spring/summer Chinook salmon as “critically imperiled” and Snake River steelhead as “imperiled,” but lists bull trout as “not rare and apparently secure.”¹ No other listed species of concern are present. Consultation under the Federal Endangered Species Act on the effects of these projects on these species was completed under BPA’s programmatic Fish and Wildlife Habitat Improvement Program (HIP4) consultation with the conclusion that the projects would likely adversely affect these species and their 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 critical habitat.

The short-term adverse effects of the projects would expose, displace, reconfigure, or compact earth through the use of mechanized equipment along the streams, and likely create conditions where small amounts of sediment would be released for short periods of time. The amount of sediment anticipated from the projects would be light because there would be minimal in-stream excavation (for constructed pools only), no dewatering/rewatering for stream channel reconstruction, and only 80 feet of backwater channel construction which would be done “in the dry” (no exposure to stream flows); and mitigation measures as detailed in the Programmatic EA would be applied. The sediment inputs would be typical of the amounts that fish and other aquatic species naturally encounter in their environment, but well below the moderate to high amounts evaluated in the Programmatic EA at Section 3.3.1.2.1, and would have minimal potential for triggering the behavioral and physiological effects from elevated water temperatures as described therein.

The disturbance of fish and aquatic organisms by the movement, sounds, and vibrations of human and mechanical activity during construction would disturb fish and likely displace them temporarily from their preferred habitat for as long as that movement, sound, and vibration are present. The project areas have limited vegetation that would screen human activity during work activities within and along the streams. The anticipated amount of activity and the level of aquatic species disturbance, however, is consistent with the analysis in the Programmatic EA found at Section 3.3.1.2.1.

The projects’ long-term beneficial effects include creation of more complex habitats through the addition of wood structures and woody streamside vegetation to streams and riparian areas (where none currently exist); reduction of long-term sediment inputs by streamside stabilization and streamside plantings (where only grasses and sedges now dominate); and the enhancement of in-stream habitat complexity over time by providing overhanging vegetation and undercut streambanks enabled by in-channel root systems (where none now exist). These beneficial effects are consistent with the analysis in the Programmatic EA found at Section 3.3.1.2.2.

2. Water Resources

The effects of using small equipment and manually working in and along the affected creeks as described are consistent with the analysis in the Programmatic EA in Section 3.3.2, “*Water Resources.*” The Programmatic EA, Section 3.3.2.3, describes overall low impacts to water quality after balancing moderate short-term adverse effects against highly beneficial long-term effects. There would be no effect to water quantity, as these projects would make no water withdrawals.

¹ State of Idaho “Species Conservation Status” website at <https://idfg.idaho.gov/species/taxa/list?category=5&usesa%5B%5D=Endangered&srnk=2&grnk=All&sgcn=All>

Overall, the tributary restoration projects would create short-term, localized, sediment inputs from the impacts of mechanized equipment along the streams in the process of shaping banks, building islands, moving sod, installing large wood structures, and transplanting willow clumps. Each restoration action would likely disturb up to 30 feet of stream or river bank (the Programmatic EA evaluated actions that would disturb hundreds of feet of river bank), and the sediment produced from these restoration actions is not anticipated to be greater than what occurs naturally during annual, natural, high flow events. As in the Programmatic EA, these are short-term effects which would be lessened by the application of mitigation measures such as protection of existing vegetation, minimization of areas to be impacted, and revegetation when projects are complete. The long-term effects of these projects, 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 improved stream form, 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 small equipment and manually working in and along the affected creeks are consistent with the analysis in the Programmatic EA Section 3.3.3, "*Vegetation.*" The Programmatic EA, Section 3.3.3.3, describes overall moderate impacts to vegetation after balancing moderate short-term adverse effects against highly beneficial long-term effects. No plant species listed by the state or Federal governments as endangered, threatened, or of concern are present within these project areas.

These projects are anticipated to have less impact than that described in the Programmatic EA. There would be no large-scale earthmoving, with its associated vegetative loss. Each constructed feature in these projects would impact less than 1,000 square feet and would be separated from other similar features by 50 to 150 feet, whereas the Programmatic EA in Section 3.3.3.2, "*Environmental Consequences for Vegetation,*" evaluated constructed features that could disturb up to 50 acres. Impacts to vegetation would be limited to some trampling of herbaceous vegetation by small equipment and human foot traffic (from which the vegetation would be anticipated to recover well); by the cutting of willow branches to construct willow mattresses and PLWWs (from which the willows are anticipated to recover fully); and by the transplanting of entire willow clumps from existing large willow patches not providing instream habitat benefits to streamside areas where they would. This level of effect would be low.

4. Wetlands and Floodplains

The effects of using small equipment and manually working in and along the affected creeks are consistent with the analysis in the Programmatic EA, "*Wetlands and Floodplains,*" Section 3.3.4. The Programmatic EA, Section 3.3.4.3, describes overall low impacts to wetlands and floodplains after balancing high short-term adverse effects against highly beneficial long-term effects.

These projects, however, are anticipated to have less impact than those described in the Programmatic EA. With these projects, there would be less short-term adverse effects to floodplains and wetlands: there would be less extensive earth-moving, no heavy equipment operations (only small equipment such as skid steers, etc., would be used) in wetlands, and no temporary dewatering of stream channels, whereas the Programmatic EA evaluated more extensive impacts to wetlands from the actions of larger and heavier construction equipment and complete dewatering and rerouting of rivers and streams. Consistent with the Programmatic EA, there would be long-term beneficial effects from implementation of these projects. There would be increased connectivity among the existing channels and the floodplains from the newly installed beaver dam analogues (BDAs). There would also be some flow

redirection as partial-channel-spanning BDAs would facilitate more natural lateral movement and sinuosity of channels, and this would slow water velocities, facilitate more effective connection between the channel and the floodplain, and provide for more efficient sediment movement and retention in the floodplain. This level of effect would be low, as stated in the Programmatic EA.

5. Wildlife

The effects of using small equipment and manually working in and along the affected creeks are consistent with the analysis in the Programmatic EA, Section 3.3.5, "*Wildlife*." The Programmatic EA, Section 3.3.5.3, describes overall low impacts to wildlife after balancing high short-term adverse effects against highly beneficial long-term effects. No wildlife species listed under the Federal Endangered Species Act or by the State of Idaho are present within these project areas.

The short-term effects from these projects in the Pahsimeroi Valley would be less than those analyzed in the Programmatic EA, because the planned restoration actions would have far less impact to soils and vegetation, and thus, to wildlife habitat. There would be no large-scale earthmoving, with its associated vegetative loss and small animal impacts. Impacts would be primarily from disturbance of wildlife by the temporary presence and activity of humans and small machines (e.g., a skid steer). This could temporarily displace them from their preferred haunts during construction (hours or a couple of days at any one site), and they would likely re-occupy the site once human activity has moved or ceased. This level of effect would be low, as stated in the Programmatic EA.

6. Geology and Soils

The effects of using small equipment and manually working in and along the affected creeks are consistent with the analysis in the Programmatic EA, "*Geology and Soils*," Section 3.3.6. The Programmatic EA, Section 3.3.6.3, describes moderate impacts to geology and soils.

The short-term effects from these projects in the Pahsimeroi Valley would be less than those analyzed in the Programmatic EA because the planned restoration actions here would have far less impacts to soils. There would be no large-scale earthmoving, and thus, no widespread mixing of soil horizons or severe compacting of soils. Light equipment such as a skid steer or backhoe may be used, so there would be some localized soil compaction and disturbance as these machines travel across the area and maneuver at each construction site; but these machines have much less impact than the larger and heavier excavators and dump trucks that were considered in the Programmatic EA. Mitigation measures designed to minimize adverse effects, such as minimizing the area of impacts and applying erosion control measures, would be applied. The level of effect from these machines as they install large wood structures and reshape islands or riverbanks would be low to moderate.

7. Transportation

The effects of these projects in and along the affected creeks are consistent with the analysis in the Programmatic EA, Section 3.3.7, "*Transportation*." The Programmatic EA, Section 3.3.7.3, describes low impacts to transportation.

These projects in the Pahsimeroi Valley would not impact any roads, either open or closed, public or private. No roads would be closed; none would be temporarily blocked; none would be relocated. The most effect the proposed restoration actions would have on transportation would be that vehicles transporting workers and equipment to project sites would be sharing local roads with other traffic. This level of impact would be low, as stated in the Programmatic EA.

8. Land Use and Recreation

There would be no effect on land use or recreation from these proposed projects. Land uses would not change; and public recreational opportunity on these private lands (of which there is none because the lands are not open to public use) would not change. This level of effect is consistent with that described in the Programmatic EA at Section 3.3.8.3, which states that land use practices underlying project sites would not be changed for most projects.

9. Visual Resources

The effects of the proposed projects in and along the affected creeks are consistent with the analysis in the Programmatic EA Section 3.3.9, "*Visual Resources*." The Programmatic EA, Section 3.3.9.3, describes low impacts to visual resources.

The proposed restoration actions in the Pahsimeroi Valley are far from any major highway or other potential viewpoint and thus, would not be visible to any other people than the private land owners. As discussed above under "*Vegetation*," there would be no large-scale soil or vegetation disturbance (as was assessed for some projects in the Programmatic EA), and changes to the visual landscape would thus be minor, and nearly undetectable to most viewers. This level of impact would be low, as stated in the Programmatic EA.

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

The effects of the proposed projects in and along the affected creeks are consistent with the analysis in the Programmatic EA, "*Air Quality, Noise, and Public Health and Safety*," Section 3.3.10. The Programmatic EA, Section 3.3.10.3, describes low impacts to air quality, noise, and public health and safety.

The proposed restoration actions in the Pahsimeroi Valley are far from any major population center or public use area; thus, they would not have any potential to directly impact the public, other than when sharing the roads when workers travel to and from work sites. Air quality and noise would be affected by operations and emissions from the machinery to be used during placement of wood structures or construction of islands and banks. But this is very short-term, and likely too far from any population area to be heard or seen; no long-term source of emissions or noise would be created. No restoration action proposed has potential to impact public safety infrastructure (e.g., roads, telecommunications) or place a burden on emergency services (e.g., police, fire, ambulance). This level of impact would be low, as stated in the Programmatic EA.

11. Cultural Resources

The effects of these restoration actions in the affected creeks are consistent with the analysis in the Programmatic EA, Section 3.3.11, "*Cultural Resources*." The Programmatic EA, Section 3.3.11.3, describes low impacts to cultural resources because cultural resources would be avoided by project construction, effects would be appropriately resolved through the National Historic Preservation Act Section 106 consultation process, or any project's adverse effects to cultural or historic resources that cannot be appropriately resolved through the Section 106 consultation process would not be tiered to the programmatic environmental assessment.

Cultural resources surveys were conducted, and consultations with the Idaho State Historic Preservation Office (SHPO) and three affected Tribes (the Shoshone Bannock Tribes of the Fort Hall Reservation, and the Nez Perce Tribe of Idaho) were completed for each of the areas potentially affected by the three projects proposed. The results of those surveys and consultations are displayed in the table below.

Project	Survey finds	Eligibility for National Register of Historic Places	Section 106 Status*
Last Chance Phase II	none	Not Applicable	No historic properties affected
Lower Duck	Two irrigation ditches	Determined to be not eligible	No historic properties affected
Muddy Springs Phase II	Horse-drawn farm equipment	Determined to be not eligible	No historic properties affected

*Letters from ID SHPO regarding these conclusions are on file at BPA headquarters, Portland, OR.

On January 13, 2021, BPA consulted with the Shoshone Bannock Tribes of the Fort Hall Reservation, Nez Perce Tribe of Idaho, and the Idaho SHPO on the effects of the project based on an intensive cultural resource survey and exploratory subsurface shovel probing of the 37-acre area of potential effect (APE) in the Muddy Springs portion of the project (BPA CR Project No. ID 2021 003; SHPO Ref. No. 2021-225). The inventory report by Sundance Consulting, Inc. identified a piece of horse-drawn farm equipment (MC001). This isolated find was determined ineligible for listing on the National Register of Historic Places (NRHP). Idaho SHPO concurred with BPA's determination that the proposed work would have no effect to historic properties and that the proposed project actions would result in no historic properties affected (36 CFR 800.4(d)). No response was received from the Shoshone Bannock Tribes of the Fort Hall Reservation or the Nez Perce Tribe of Idaho.

On January 21, 2022, BPA consulted with the Shoshone Bannock Tribes of the Fort Hall Reservation, Nez Perce Tribe of Idaho, and the Idaho State Historic Preservation Office (SHPO) on the effects of the project based on an intensive cultural resource survey and exploratory subsurface shovel probing of the 22.7-acre APE in the Lower Duck portion of the project. (BPA CR Project No. ID 2022 008; SHPO Ref. No. 2022-268). The inventory report prepared by Sundance Consulting, Inc. identified two historic ditches ((59-17015 - P-09 Cross Ditch and DUC1 - Duck Creek ditch) within or adjacent to the project area. The previously recorded agricultural waterway (59-17015) has been determined ineligible for the NRHP. The newly recorded Duck Creek ditch (DUC1) agricultural waterway is recommended ineligible for the NRHP. On May 10, 2022, Idaho SHPO concurred with BPA's determination that the proposed work would have no effect to historic properties and that the proposed project actions would result in no historic properties affected (36 CFR 800.4(d)). No response was received from the Shoshone Bannock Tribes of the Fort Hall Reservation or the Nez Perce Tribe of Idaho.

On May 13, 2022, BPA consulted with the Confederated Salish and Kootenai Tribes, the Nez Perce Tribe, and the Shoshone Bannock Tribes of the Fort Hall Reservation and the Idaho SHPO on the effects of the project based on an intensive cultural resource survey and exploratory subsurface shovel probing of the 15-acre APE in the Lower Last Chance Springs portion of the project (BPA CR Project No. ID 2022 008; SHPO Ref No. 2022-566). The inventory report prepared by Sundance Consulting, Inc. identified no new or previously recorded historic properties in the APE. On May 26, 2022, Idaho SHPO concurred with BPA's determination that the proposed work would have no effect to historic properties. No response was received from the Confederated Salish and Kootenai Tribes, the Nez Perce Tribe, or the Shoshone Bannock Tribes of the Fort Hall Reservation.

As described in the Programmatic EA, the results of these consultations were that sites, if present, would be avoided by design and thus, would have no adverse effect. 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, and in consultation with the appropriate consulting parties.

12. Socioeconomics and Environmental Justice

The effects of these restoration projects in and along the affected creeks are consistent with the analysis in the Programmatic EA, "*Socioeconomics and Environmental Justice*," Section 3.3.10. The Programmatic EA, Section 3.3.10.3, describes low impacts to socioeconomics and environmental justice.

As described in the Programmatic EA, none of the restoration actions would generate a requirement for additional permanent employees and the actions would not result in a requirement for individuals to leave the local area, or relocate within it. There would be no effect on housing available for local populations. These projects would not displace people or eliminate residential suitability from lands being restored, or from lands near restoration project sites. The projects would generate short-term employment for those directly implementing the restoration actions and would provide small short-term cash inputs to local businesses for fuel, equipment, and meals. This degree of effect would be low.

There are no environmental justice populations present that could be affected, as these projects and their impacts are limited to the private lands on which they are located, and no offsite effects are anticipated that could impact environmental justice populations elsewhere.

13. Climate Change

The effects of these projects in and along the affected creeks are consistent with the analysis in the Programmatic EA, Section 3.3.10, "*Climate Change*." The Programmatic EA, Section 3.3.10.3, describes low impacts to climate change.

The projects would have a low level of effect on climate change from short-term emissions from motorized equipment operations during implementation of the restoration actions, but these would be offset to some degree by the ameliorating effects of restored floodplain function such as increased water table inputs, increased carbon sequestration in expanded and improved riparian wetlands, and decreased water temperatures from improved instream and riparian habitat conditions. The overall effects on climate change would be low.

Findings

The types of restoration actions and the potential impacts related to the proposed *Pahsimeroi River 2022 Restoration Projects* have been examined, reviewed, and consulted upon and are similar to those analyzed in the *Columbia River Basin Tributary Habitat Restoration Programmatic Environmental Assessment* (DOE/EA 2126) and Finding of No Significant Impact. There are no substantial changes in the EA's Proposed Action and no significant new circumstances or information relevant to environmental concerns bearing on the EA's Proposed Action or associated impacts within the meaning of 10 CFR § 1021.314 and 40 CFR §1502.9(d). Therefore, no further NEPA analysis or documentation is required.

/s/ Robert W Shull

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