

Supplement Analysis
for the
Columbia River Basin Tributary Habitat Restoration
Programmatic Environmental Assessment
(DOE/EA 2126/SA-01)

Pahsimeroi River 2021 Restoration Projects
Bonneville project number 2008-603-00
Bonneville contract number 76913 rel 24

Bonneville Power Administration
Department of Energy



Introduction

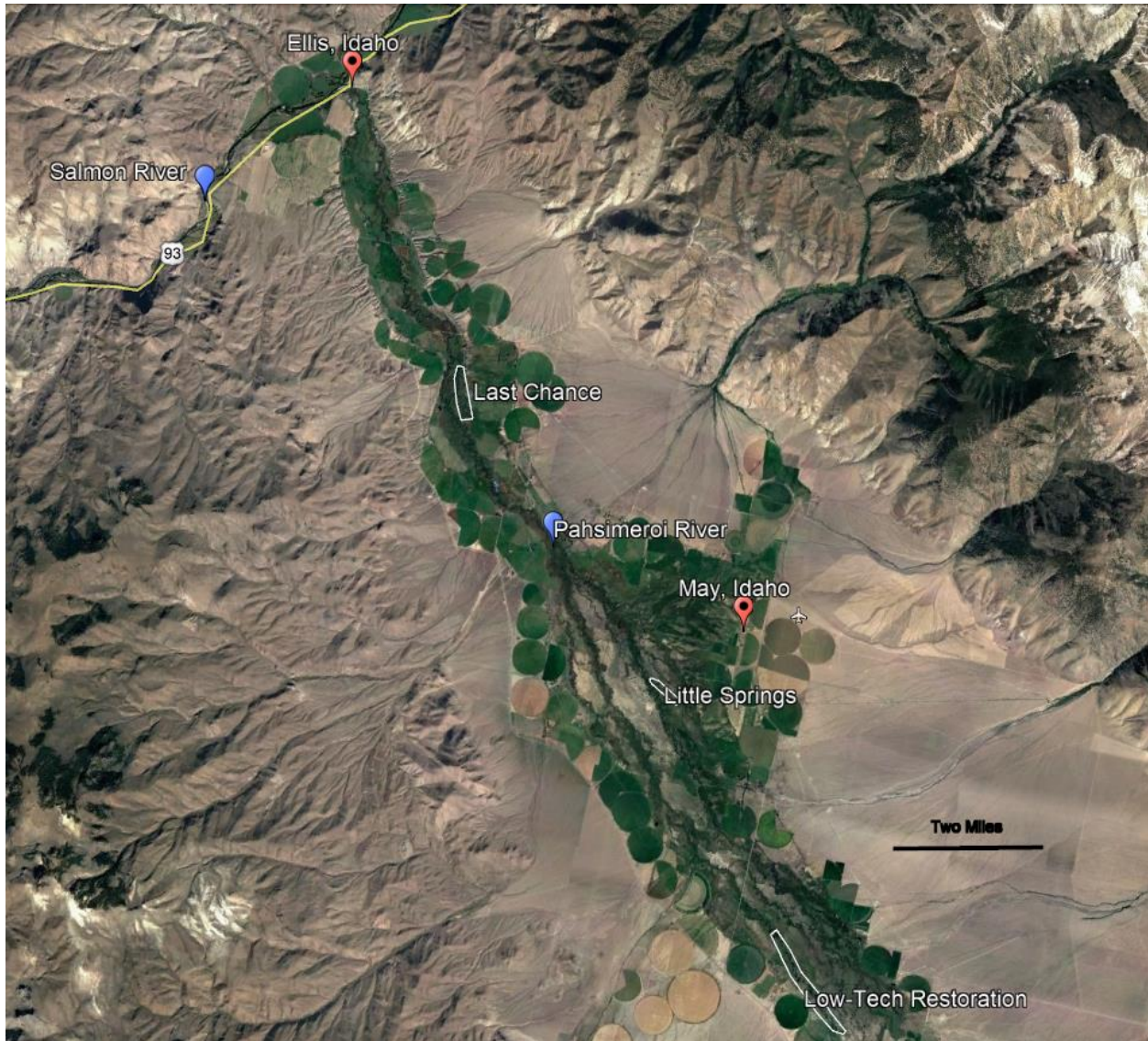
In December 2020, Bonneville Power Administration (Bonneville) and the Bureau of Reclamation completed the *Columbia River Basin Tributary Habitat Restoration Programmatic Environmental Assessment* (DOE/EA 2126) (Programmatic EA). The Programmatic EA analyzed the potential environmental impacts of implementing 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 2021 Restoration Projects*, which is comprised of 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 2021 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).

Proposed Actions

This SA analyzes the effects of three distinct projects: *Last Chance Springs*, *Little Springs*, and *Low-Tech Restoration Big Creek Ranch*. These three projects, each a distinct Proposed Action in this SA, 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 Springs* 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 *Little Springs* project. Both 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 *Low-Tech Restoration Big Creek Ranch* project would be located another 3.5 miles up the valley along a reach of the Pahsimeroi River that has also been heavily grazed and is in need of restoration. This project would be within the sites of two prior restoration projects and is an adaptive management project adding beaver dam analogs (BDAs) to the large wood structures, created pools and islands, and narrowed banks from prior restoration projects. Most of this project area is similar to what was described above for the *Last Chance Springs* and *Little Springs* project areas, but some stretches of river in this project area still have well-established willow thickets which would be protected.



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 platforms (i.e. brush mattresses) for fish cover; install BDAs 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 project is along 7,100 feet of a small (5 to 10 feet wide), spring channel. The project would construct approximately 23 islands; install approximately 91 wood structures; construct 9 pools, place 33 sedge mats; and install about 340 willow banks and willow clump transplants within its project area. The site-specific work area for the large constructed features (islands, pools, large in-stream 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 Little Springs project covers 3,800 feet of Little Springs Creek (5 to 10 feet wide). The project would install the same types of structures as with the Last Chance project, and at the same scale and density, though only about half the number of features would be installed since Little Springs restores about half the stream length as does the Last Chance project.

The Low-Tech Restoration Big Creek Ranch project would install up to 16 BDA complexes (each consisting of two to 25 BDAs) that include both channel-spanning and bank-attached partial-spanning structures on an approximately two-mile reach of the 10 to 20-foot wide Pahsimeroi River. BDA structures would be 10 to 20 feet long, one foot wide, and up to three feet above the streambed, constructed of untreated wooden posts, and willow branches locally sourced from plants not providing in-stream habitat values. The BDAs would be adaptively managed in the following years, adding willow branches, extending the constructed BDAs, or adding additional BDAs to the complexes as needed to achieve desired riparian and in-stream fish habitat values.

These Proposed Actions fulfill commitments under the 2020 National Marine Fisheries Service Columbia River System Biological Opinion. These projects would support conservation of Endangered Species Act-listed species considered in the 2020 Endangered Species Act consultation with the US Fish and Wildlife Service on the operation and maintenance of the Columbia River System.

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 BDAs; 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 Springs*, *Little Springs*, and *Low-Tech Restoration Big Creek Ranch* 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 these spring creeks and the Pahsimeroi River 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 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. Consultation 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 no in-stream excavation, dewatering, or new channel construction; 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 elevating 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 are essentially devoid of vegetation beyond grasses, sedges and forbs, with no potential for screening human activity that would be conducted 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 Proposed Actions' 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 these spring creeks and the Pahsimeroi River 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 make no water withdrawals.

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, and installing large wood structures. Each restoration action would likely disturb up to 30' 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, in-stream 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 these spring creeks and the Pahsimeroi River 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 under the Endangered Species Act 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 1000 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 BDAs (from which the willows are anticipated to recover fully); and by the transplanting of entire willow clumps from existing large willow patches not providing in-stream habitat benefit 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 these spring creeks and the Pahsimeroi River 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 that 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 between the existing channels and the floodplains from the newly installed 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 is stated in the Programmatic EA.

5. *Wildlife*

The effects of using small equipment and manually working in and along these spring creeks and the Pahsimeroi River 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 Endangered Species Act 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 is stated in the Programmatic EA.

6. *Geology and Soils*

The effects of using small equipment and manually working in and along these spring creeks and the Pahsimeroi River 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 impact 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, and mitigation measures designed to minimize adverse effects, such as minimizing the area of impact, 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 spring creeks and the Pahsimeroi River 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 is 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 spring creeks and the Pahsimeroi River 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 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 is stated in the Programmatic EA.

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

The effects of the proposed projects in and along the spring creeks and the Pahsimeroi River 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 (police, fire, ambulance). This level of impact would be low, as is stated in the Programmatic EA.

11. Cultural Resources

The effects of these restoration actions in the Pahsimeroi River 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 either be avoided by project construction, effects would be appropriately resolved through the Section 106 consultation process, and 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 Idaho State Historic Preservation office and affected Tribes 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	One historic irrigation ditch	Eligible	No adverse effect
Little Springs, and	No cultural resources identified	N/A	No historic properties affected
Low-Tech Restoration Big Creek Ranch	Eight archeological resources, two historic irrigation ditches	Ditches determined to be eligible	No adverse effect
*Letters from ID SHPO regarding these conclusions are on file at BPA headquarters, Portland, OR			

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

12. Socioeconomics and Environmental Justice

The effects of these restoration projects in and along the spring creeks and the Pahsimeroi River 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 nor would they require 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 such populations elsewhere.

13. Climate Change

The effects of these projects in and along the spring creeks and the Pahsimeroi River 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 2021 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 Proposed Actions and no significant new circumstances or information relevant to environmental concerns bearing on the Proposed Actions or their impacts within the meaning of 10 CFR § 1021.314(c)(1) and 40 CFR § 1502.9(d). Therefore, no further NEPA analysis or documentation is required.

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