

Supplement Analysis
for the
Columbia River Basin Tributary Habitat Restoration
Programmatic Environmental Assessment
(DOE/EA 2126/SA-05)

Jim Brown Creek BDAs and PALS Project
Bonneville project number 1996-077-02
Bonneville contract number 87084

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 *Jim Brown Creek BDAs and PALS Project*, which would install approximately 40 in-stream structures within a 1.7-mile reach of Jim Brown Creek in the Lolo Creek watershed in Clearwater County, Idaho. 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 *Jim Brown Creek BDAs and PALS Project* to determine if the project is within the scope of the analysis considered in the Programmatic EA. It also evaluates whether the proposed project presents 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

The *Jim Brown Creek BDAs and PALS Project* would be located on private timber lands in the lower end of the 10- to 15-foot wide Jim Brown Creek, just above its confluence with Musselshell Creek (a tributary to Lolo Creek) in Township 35 North Range 5 East Sections 23, 24, 25, approximately 24 miles southeast of Orofino, Idaho, and 7 miles east of Weippe, Idaho. The project site is within a narrow, 1.7-mile-long reach of meandering stream bottom, 150 to 400-foot wide, surrounded by low hills covered with second-growth forest and recent clear cuts. The once heavily-grazed stream bottom (grazing prohibited since 1999) is now lush with grasses and forbs; and a few planted riparian willows, alders, and hawthorn trees. Past grazing impacts, however, caused stream incision that lowered the water table, and past planting and streambank enhancement projects have not been sufficient to aggrade the creek back to historic elevations.

The *Jim Brown Creek BDAs and PALS Project* would install approximately 40 in-stream structures during the approximate time period of July 15 through August 30. They would be a mix of beaver dam analogues (BDAs) that would fully span the stream, and BDA-like structures, called post-assisted log structures (PALS), which would be installed much like BDAs but would only partially span the stream. The partial-spanning PALS push flows against streambanks to increase the stream's meander, and generate sediment that is carried downstream to channel-spanning BDAs. Channel-spanning BDAs trap and hold that sediment, as well as sediment generated by vehicle and logging activity upstream, and thereby aggrade the stream. This emulates the hydraulic conditions and sediment management conditions in streams such as this that were formerly shaped by beavers.

The structures would be 5- to 15-foot long, one foot wide, and up to three feet above the streambed, constructed of untreated 2- to 4-inch diameter wooden posts, and 5- to 10-foot long willow branches locally sourced from plants not providing in-stream habitat values. They would be adaptively managed in the following years, adding willow branches, extending the constructed BDAs or PALS, or adding additional structures to the complexes as needed to achieve desired riparian and in-stream conditions.

This Proposed Action fulfills commitments under the 2020 National Marine Fisheries Service Columbia River System Biological Opinion, and supports 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 construction of BDAs would all be conducted by hand. Posts would be driven into the streambed using a mechanized, handheld vibratory post driver. Willow branches would be cut and woven between the driven posts by hand. The tops of the posts would be cut off at the required height using a chainsaw. No heavy equipment would be used. The streambed would be trampled and disturbed by the driving of posts and the erection of the structures; the riparian area would be impacted by foot traffic during the collection, transport, and staging of willow branches; and there would be noise and vehicle emissions and a temporary increase in vehicle traffic and human activity in the project area. The typical environmental effects associated with this project's action and impacts 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 *Jim Brown Creek BDAs and PALS Project*, and an assessment of whether these effects are consistent with those described in the Programmatic EA. This project is 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 Jim Brown Creek are consistent with the analysis in the Programmatic EA, Section 3.3.1, "*Fish and Aquatic Species*". The Programmatic EA, Section 3.3.1.3, "*Effects Conclusion for the Proposed Action on Fish and Aquatic Species*", describes overall low impacts to fish and aquatic species after considering moderate short-term adverse effects and beneficial long-term effects.

Snake River Basin steelhead (part of the Clearwater River Major Population Group) and bull trout, both listed as threatened under the Endangered Species Act, are present in the project area. Consultation on the effects of this project on these species was completed under Bonneville's programmatic Fish and Wildlife Habitat Improvement Program (HIP4) consultation with the conclusion that the project would likely adversely affect this species and its critical habitat in the short term but would not likely result in jeopardy to the species or result in destruction or adverse modification of its critical habitat.

The short-term adverse effects of constructing BDAs and PALS would be to disturb the streambed and likely release small amounts of sediment for short periods of time at each location. The amount of sediment anticipated from the project would be low because there would be no in-stream or streambank excavation, and mitigation measures as detailed in the Programmatic EA, such as constructing only during the Idaho Department of Fish and Game in-water work window, would be applied. The sediment inputs would be typical of the amounts that fish and other aquatic species naturally encounter in their environment. It would be well below the moderate amounts evaluated in the Programmatic EA at Section 3.3.1.2.1, "*Short-Term Effects to Fish and Aquatic Species from Construction Activities*", and have minimal potential for triggering the behavioral and physiological effects to fish, or the sediment-elevated water temperature effects, as described therein.

The disturbance of fish and aquatic organisms by the movement, sounds, and vibrations of human and power tool activity during installation would disturb fish and likely displace them temporarily from their preferred habitat for as long as that movement, sound, and vibration is present. This 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, "*Short-Term Effects to Fish and Aquatic Species from Construction Activities*".

The Proposed Action's long-term beneficial effects include creation of more complex habitats through the addition of the structures, and the enhancement of in-stream habitat complexity over time by increasing stream meander and aggrading the stream, thereby providing conditions more conducive to woody streambank vegetation to provide

shade and overhanging vegetation, and undercut streambanks enabled by stable in-channel root systems (where few now exist). These beneficial effects are consistent with the analysis in the Programmatic EA found at Section 3.3.1.2.2.2, “*River, Stream, Floodplain, and Wetland Restoration and Channel Reconstruction (Category 2) Effects on Aquatic Species*”.

2. Water Resources

The effects of manually working in and along Jim Brown Creek, 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, “*Effects Conclusion for the Proposed Action on Water Resources*”, describes overall low impacts to water quality after considering moderate short-term adverse effects and beneficial long-term effects. There would be no effect to water quantity with this project, as it proposes no water withdrawals.

Overall, the project would produce minor, short-term, localized, sediment inputs from the impacts of human activity in the stream at each structure site. The sediment produced from this level of activity is anticipated to be far less than what occurs naturally during natural, seasonal flows. As discussed 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, and minimization of areas to be impacted. The long-term effects of this project, however, would be an increased potential of the floodplain to effectively capture sediment, manage its sediment loads, and reduce 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 manually working in and along Jim Brown Creek are consistent with the analysis in the Programmatic EA Section 3.3.3, “*Vegetation*”. The Programmatic EA, Section 3.3.3.3, “*Effects Conclusion for the Proposed Action on Vegetation*”, describes overall moderate impacts to vegetation after considering moderate short-term adverse effects and beneficial long-term effects. No plant species listed under the Endangered Species Act or other sensitive species are present within this project area.

This project is anticipated to have less impact than that described in the Programmatic EA. This project proposes no mechanical activity that would disturb vegetation, and no earth-moving or vegetation removal is proposed. Impacts to vegetation would be limited to some trampling of herbaceous vegetation by human foot traffic (from which the vegetation would be anticipated to recover well); and by the cutting of willow branches to construct the BDAs and PALS (from which the willows are anticipated to recover fully). This level of effect would be low.

The specific effects on vegetation from the proposed structures are consistent with those discussed in the Programmatic EA in Section 3.3.3.2, “*Environmental Consequences for Vegetation*”, and as illustrated in Figure 5 in that section.

4. Wetlands and Floodplains

The effects of manually working in and along Jim Brown Creek are consistent with the analysis in the Programmatic EA, Section 3.3.4, “*Wetlands and Floodplains*”. The Programmatic EA, Section 3.3.4.3, “*Effects Conclusion for the Proposed Action on Wetlands and Floodplains*”, describes overall low impacts to wetlands and floodplains after considering short-term adverse effects and beneficial long-term effects.

This project, however, is anticipated to have less impact than that described in the Programmatic EA. With this project, there would be no short-term adverse effects to floodplains and wetlands since there would be no earth-moving, no heavy equipment operations in wetlands, and no temporary dewatering of stream channels, whereas the Programmatic EA evaluated all of these impacts to wetlands and floodplains. Consistent with the Programmatic EA, there would be long-term beneficial effects from implementation of this project. There would be increased connectivity between the existing channel and the floodplains from the newly installed BDAs and the aggraded streambed that would result. There would also be some flow redirection as partial-channel-spanning PALS 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 transport and retention in the floodplain. This level of effect would be low, as is stated in the Programmatic EA.

5. Wildlife

The effects of manually working in and along Jim Brown Creek are consistent with the analysis in the Programmatic EA Section 3.3.5, “*Wildlife*”. The Programmatic EA, Section 3.3.5.3, “*Effects Conclusion for the Proposed Action on Wildlife*”, describes overall low impacts to wildlife after considering short-term adverse effects and beneficial long-term effects. No wildlife species listed under the Endangered Species Act or other sensitive species are present within this project area.

The short-term effects from this stream restoration project would be less than those analyzed in the Programmatic EA, because BDA and PALS construction would have far less impact to soils and vegetation, and thus to wildlife habitat than the mechanized restoration actions evaluated there. 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 their loud power tools. 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 ceased. This level of effect would be low, as is stated in the Programmatic EA.

Consistent with the Programmatic EA in Section 3.3.5.1.2, “*Wildlife Species*”, would be the potential for creating habitat conditions suitable for the recolonization of the site by beavers over the long term.

6. Geology and Soils

The short-term effects would be less than those analyzed in the Programmatic EA since there would be no earthmoving or heavy equipment operations in this Proposed Action, and thus no mixing of soil horizons or severe compacting of soils. There would be no effect to soils from constructing BDAs and PALS in the stream using only hand tools.

7. Transportation

The effects of this project in and along Jim Brown Creek are consistent with the analysis in the Programmatic EA Section 3.3.7, “*Transportation*”. The Programmatic EA, Section 3.3.7.3, “*Effects Conclusion for the Proposed Action on Transportation*”, describes low impacts to transportation.

This project 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 during construction. 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 this proposed project. Land uses would not change, and public recreational opportunity on these private timber lands would not change. This level of effect is consistent with that described in the Programmatic EA at Section 3.3.8.3, “*Effects Conclusion for the Proposed Action on Land Use and Recreation*”, which states that land use practices underlying project sites would not be changed for most projects.

9. Visual Resources

The effects of the proposed project in and along Jim Brown Creek are consistent with the analysis in the Programmatic EA Section 3.3.9, “*Visual Resources*”. The Programmatic EA, Section 3.3.9.3, “*Effects Conclusion for the Proposed Action on Visual Resources*”, describes low impacts to visual resources.

The project site is visible from roads that follow Jim Brown Creek on both sides, outside of the floodplain, weaving in and out of the adjacent forest. The constructed BDAs and PALS would be visible, but would add no unnatural feature to the landscape, appearing instead much like natural beaver dams. There would be an increase of surface flooding, and thus surface water, beyond what exists in Jim Brown Creek today, but this would appear natural and not detract from the current visual landscape. 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 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 manually working in and along Jim Brown Creek are consistent with the analysis in the Programmatic EA, Section 3.3.10, “*Air Quality, Noise, and Public Health and Safety*”. The Programmatic EA, Section 3.3.10.3, “*Effects Conclusion for the Proposed Action on Air Quality, Noise, and Public Health and Safety*”, describes low impacts to air quality, noise, and public health and safety.

The Proposed Action in Jim Brown Creek is far from any major population center or public use area, thus it 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 gas-powered post driver and chainsaw to be used, but this would be short-term, too far from any population area to be heard or seen, consistent with the chainsaw use common on the private timberlands surrounding the project site, and would not exceed air quality standards. 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 this action in Jim Brown Creek are consistent with the analysis in the Programmatic EA Section 3.3.11, “*Cultural Resources*”. The Programmatic EA, Section 3.3.11.3, “*Effects Conclusion for the Proposed Action on Cultural Resources*”, 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.

The Jim Brown Creek area has been the focus of previous Bonneville restoration projects including riparian vegetation planting, fencing, and streambank protection and instream bioengineering projects since the early 2000s. Several cultural resource surveys have been completed in the project area, and the proposed structures are within the previously surveyed areas. For each of those surveys, an intensive pedestrian survey was conducted by the Nez Perce Tribe Cultural Resource Program. The project area was found to have been heavily disturbed by road and culvert construction, and no cultural resources were recorded as part of those surveys.

Consistent with the Programmatic EA, consultation was completed on April 31, 2021 with Idaho State Historic Preservation Office and the Nez Perce Tribe where the determination was that the project would result in no adverse effect to historic properties.

12. Socioeconomics and Environmental Justice

The effects of this restoration project in and along Jim Brown Creek are consistent with the analysis in the Programmatic EA, Section 3.3.10, “*Socioeconomics and Environmental Justice*”. The Programmatic EA, Section 3.3.10.3 “*Effects Conclusion for the Proposed Action on Socioeconomics and Environmental Justice*”, describes low impacts to socioeconomics and environmental justice.

As described in the Programmatic EA, this restoration action would not generate a need for additional permanent employees nor would it require individuals to leave the local area, or relocate within it. There would be no effect on housing available for local populations. This project would not displace people or eliminate residential suitability of lands being treated, or from lands near the project site. The project would generate short-term employment for those directly implementing the restoration action and would provide small short-term cash inputs to local businesses for fuel, equipment, and meals. This degree of effect would be low.

The project site is within the boundaries of the Nez Perce Reservation, and thus an environmental justice population is present. However, this project has been proposed by the Nez Perce Tribe for funding by Bonneville, and funding, if authorized, would flow directly to the tribe for the project’s implementation. Tribal members would likely be used to complete the project, with most of the economic benefits described above accruing directly to them. This is a low beneficial impact to an environmental justice population which is consistent with the Programmatic EA.

13. Climate Change

The effects of this project in and along Jim Brown Creek are consistent with the analysis in the Programmatic EA Section 3.3.10, “*Climate Change*”. The Programmatic EA, Section 3.3.10.3, “*Effects Conclusion for the Proposed Action on Climate Change*”, describes low impacts to climate change.

The project would have a low level of effect on climate change from short-term emissions from the hand-held gas-powered tools that would be used during BDA and PALS construction. The emissions would be minimal and 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

Bonneville finds that the types of actions and the potential impacts related to the proposed *Jim Brown Creek BDAs and PALS Project* were 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 Action and no significant new circumstances or information relevant to environmental concerns bearing on the Proposed Action or its 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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