

Supplement Analysis
for the
Columbia River Basin Tributary Habitat Restoration
Programmatic Environmental Assessment
(DOE/EA 2126/SA-07)

Muddy Springs Habitat Project
Bonneville project number 2008-603-00
Bonneville contract number CR-345675

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 *Muddy Springs Habitat Project* that would implement many of the specific restoration actions assessed in the Programmatic EA in the lower Pahsimeroi River valley in Custer 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 *Muddy Springs Habitat 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 Action

The *Muddy Springs Habitat Project* would be located in the lower end of the Pahsimeroi Valley between Ellis and May, Idaho. The project would be located on a small spring-fed stream, Muddy Springs, that has been heavily grazed and is now over-widened and lacking in riparian vegetation such as willows and cottonwoods; and lacking in-stream habitat features such as logs, beaver dams, and overhanging vegetation or undercut vegetatively-stabilized banks. The project would place whole trees and rootwads (with logs attached) in the stream. It would install 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. Willow banks (a section of streambank with transplanted willows placed horizontally and continuously along that section of bank) would be constructed, and willow clumps would be transplanted to the anchor points of the partial-spanning PALs. Fencing that protects the stream from over-grazing by livestock would be repaired and reinforced where it crosses the Pahsimeroi River at the lowest end of the project area. The environmental effects of these types of restoration actions were evaluated in the Programmatic EA.

The *Muddy Springs Habitat Project* would be located along 3,100 feet of a small (10 to 20 feet wide), spring channel, Muddy Springs. During the construction period of July 1 through August 21, the project would install approximately 74 wood structures (whole trees and rootwads), singly or combined into logjam-like structures. It would construct five channel-spanning BDAs, and 44 PALs with willow clumps at their anchor points. About 26 willow banks, each about 25 to 30 feet long, would be constructed. These features would be installed roughly 20-50

feet apart along the stream. Fence reconstruction and repair, seeding disturbed areas, and plantings with native shrub and tree species would complete the project. The entire project is estimated to take less than six weeks to complete.

BDA and PAL structures would be about 5 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. These would be adaptively managed in the following years, adding willow branches, extending their lengths, or adding additional structures as needed to achieve desired hydrological conditions and in-stream fish habitat values.

This Proposed Action fulfills commitments under the 2020 National Marine Fisheries Service Columbia River System Biological Opinion and 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 this project would require the use of a small track-mounted excavator for installing the whole trees and rootwads; and for constructing the willow banks. The construction of BDAs and PALs, plantings of willow clumps, and final fence reconstruction, seeding, and planting of containerized plants would all be conducted by hand. All of these restoration actions would disturb and displace soil in and along the stream; damage vegetation; create noise and vehicle emissions; and temporarily increase vehicle traffic and human activity in the project area. The typical effects associated with the environmental disturbances created by these actions 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 *Muddy Springs Habitat 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 mechanized equipment and manually working in and along Muddy Springs 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.

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 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 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 project would expose, displace, reconfigure, or compact earth through the use of mechanized equipment along the stream, and likely create conditions where small amounts of sediment would be released for short periods of time. The amount of sediment anticipated from the project would be light because there would be no in-stream excavation, dewatering, or new channel construction; and mitigation measures for minimizing sediment input 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 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 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 area is essentially devoid of vegetation beyond grasses, sedges, and forbs, with no potential for screening human activity that would be conducted within

and along the stream. 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, “*Short-Term Effects to Fish and Aquatic Species from Construction Activities*”.

The project’s long-term beneficial effects include creation of more complex habitats through the addition of wood structures and woody streamside vegetation to the stream and adjacent riparian areas (where none currently exists); 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 BDAs and PALs, and overhanging vegetation (willow transplants) and undercut streambanks (willow banks) 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, “*River, Stream, Floodplain, and Wetland Restoration and Channel Reconstruction (Category 2) Effects on Aquatic Species*”.

2. Water Resources

The effects of using mechanized equipment and manually working in and along Muddy Springs 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, as this project would have no water withdrawals.

Overall, this project would create short-term, localized, sediment inputs from the impacts of mechanized equipment along the stream in the process of installing large wood structures and constructing willow banks. The restoration actions would likely disturb, on average, less than 30’ of streambank (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 the project is complete. 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 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 mechanized equipment and manually working in and along Muddy Springs 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 are present within this project area.

This project is 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 this project would impact less than 500 square feet and would be separated from other similar features by 20 to 40 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 mechanized 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. The completed project area would be hydroseeded and planted with native riparian shrubs and trees. This level of effect would be low.

4. Wetlands and Floodplains

The effects of using mechanized equipment and manually working in and along Muddy Springs are consistent with the analysis in the Programmatic EA, “*Wetlands and Floodplains*”, Section 3.3.4. 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 less short-term adverse effects to floodplains and wetlands: there would be no extensive earth-moving in wetlands (only minimal excavations in the construction of willow banks), and no temporary dewatering of stream channels, whereas the Programmatic EA evaluated more extensive impacts to wetlands from the in-stream 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 this project. There would be increased connectivity between the existing channel and the floodplain 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 mechanized equipment and manually working in and along Muddy Springs 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 are present within this project area.

The short-term effects from this project 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 machines. 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 mechanized equipment and manually working in and along Muddy Springs are consistent with the analysis in the Programmatic EA, Section 3.3.6, “*Geology and Soils*”. The Programmatic EA, Section 3.3.6.3, “*Effects Conclusion for the Proposed Action on Geology and Soils*”, describes moderate impacts to geology and soils.

The short-term effects from this project 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. There would be some localized soil compaction and disturbance from the use of an excavator to place trees and logs as the machine would travel across the area and maneuver at each construction site; but this would have much less impact than the large excavations 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 degree of effect to soils from the anticipated level of mechanized activity to install large wood structures and create willow banks would be low to moderate.

7. *Transportation*

The effects of this project in and along Muddy Springs 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 in the Pahsimeroi Valley would not impact any roads, neither open or closed, nor 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 this private land (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, “*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 Muddy Springs 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 proposed restoration actions in the Pahsimeroi Valley are far from any major highway or other potential viewpoint and thus would not be visible to anyone other than the private land owner. 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 project in and along Muddy Springs 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.

This project in the Pahsimeroi Valley 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 machinery to be used during placement of wood structures or construction of willow banks. But this would be 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 Valley 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 be avoided by project construction, effects would be appropriately resolved through the 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.

A cultural resource survey was conducted, and consultations with the Idaho State Historic Preservation office and the Shoshone-Bannock and Nez Perce Tribes were completed for the area potentially affected by the project proposed. The results of that survey and consultation with the Idaho State Historic Preservation office were that no resource eligible for the Register of Historic Places was identified and thus there would be no historic properties affected. Neither of the tribes responded to Bonneville’s consultation letters.

As described in the Programmatic EA, the result of this consultation was that sites, if present, would be avoided by design and have no adverse effect. No sites are present.

12. Socioeconomics and Environmental Justice

The effects of this restoration project along Muddy Springs 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, “*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, the Proposed Action would not generate a requirement 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 restored, or from lands near restoration project sites. The project 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 this project 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 this project in and along Muddy Springs 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 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, which is consistent with the Programmatic EA.

Findings

Bonneville finds that the types of actions and the potential impacts related to the proposed *Muddy Springs Habitat 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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