

Supplement Analysis
for the
Columbia River Basin Tributary Habitat Restoration
Programmatic Environmental Assessment
(DOE/EA 2126/SA-48)

Pole Creek Habitat Restoration Project Phase 1
Bonneville project number 2007-268-00
Bonneville contract number 90937

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. In May of 2023, Bonneville completed a Supplement Analysis (SA; SA-34) that found that island creation and expansion actions did not represent a substantial change to the proposal evaluated in the Programmatic EA and were not significant new circumstance or information relevant to the environmental concerns that were not addressed by the Programmatic EA.

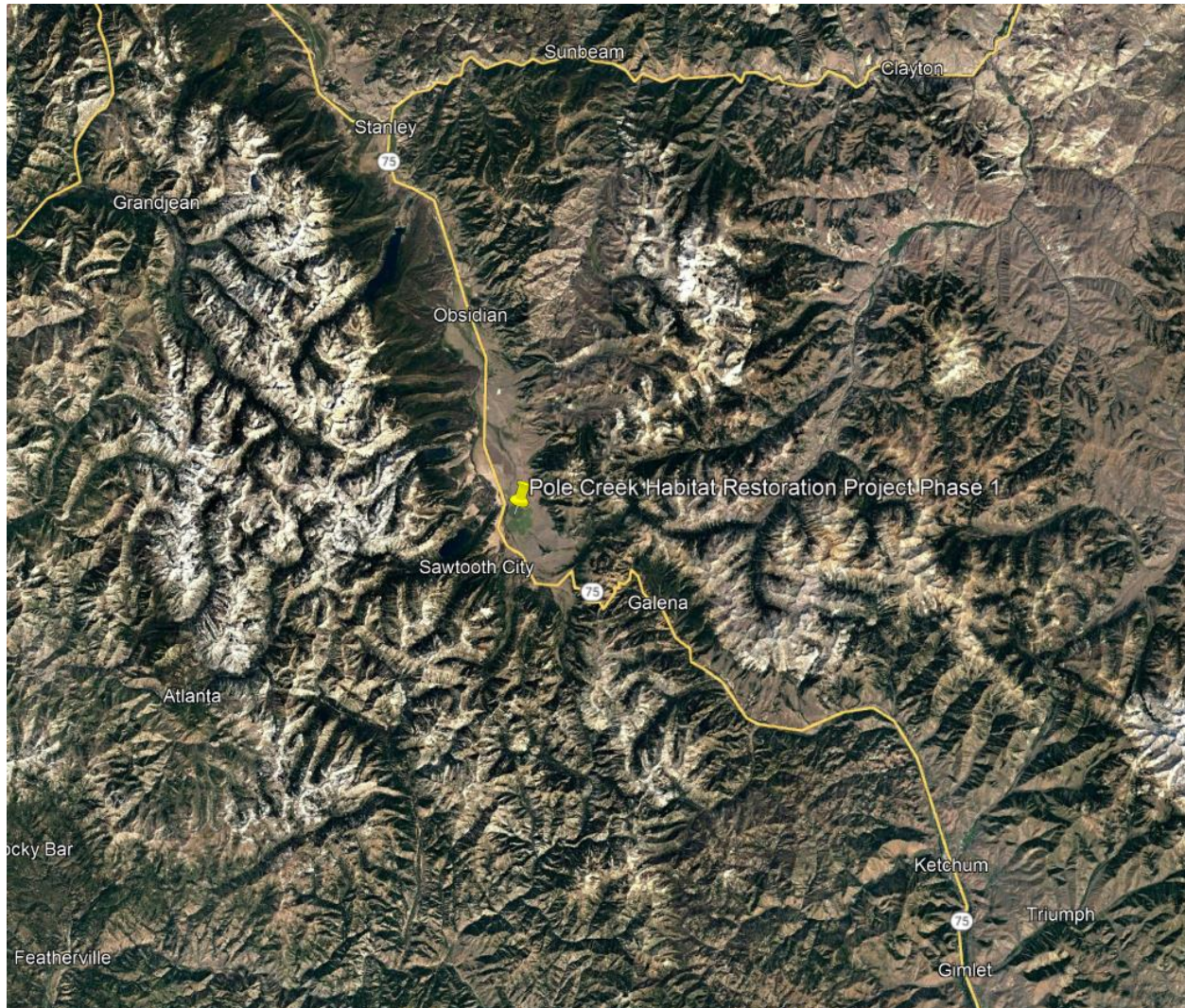
Consistent with the Programmatic EA, this SA analyzes the effects of the first of three contemplated phases of a habitat restoration project in Pole Creek, a tributary to the Salmon River in Blaine County, Idaho. Bonneville would implement this project by providing funds to the Custer Soil and Water Conservation District, which would undertake many of the specific restoration actions assessed in the Programmatic EA. The objective of the proposed project is to increase in-stream habitat diversity, reduce water temperatures, and improve riparian and floodplain vegetative diversity for the benefit of Endangered Species Act (ESA)-listed salmonids. This SA analyzes these site-specific impacts 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 (C.F.R.) § 1502.9(d) and 10 C.F.R. § 1021 *et seq.*

All three phases of the proposed project would be similar in scope, scale, and type of action, but would treat different reaches of Pole Creek. Each individual phase would be a complete project by itself with no feature or action dependent on future phase activity, and collectively, the three phases would not require a more detailed or complex analysis than would be needed for any individual phase. Because funding for subsequent phases of the proposed project is currently uncertain, they are not evaluated in this SA and would be subject to site-specific analysis prior to implementation.

Proposed Actions

The Pole Creek Habitat Restoration Project Phase 1 would be located in the upper end of the Sawtooth Valley just below the headwaters of the Salmon River between Stanley and Ketchum, Idaho (Figure 1). Pole Creek is a small stream that has been plowed, pivot-irrigated, mowed for hay production, and heavily grazed. It is now over-widened and lacking in riparian vegetation, such as willows and cottonwoods, and in-stream habitat features, such as rocks, logs, beaver dams, and overhanging vegetation or undercut vegetatively-stabilized banks.

Figure 1 Location of Pole Creek Habitat Restoration Project



The project (See Appendix A) would improve habitat along about 7,800 feet (1.5 miles) of Pole Creek. It would reconnect the stream to four abandoned meanders, adding approximately 1,560 feet to the total stream length in this section once completed. Eight bank roughening treatments would be created using small log structures and over 90 transplanted willow clumps (impacting about 2,500 square feet). Further, approximately 220 willow clumps and sections of sedge sod would be transplanted into nine newly-created sedge/willow bank bench structures (impacting about 2,000 square feet). The bench structures would generally be spaced up to 100 feet apart, with intervening areas planted with live willow stakes driven into the ground at 3 feet spacing in 24 separate plots of about 100 square feet

each. Sixteen plots of transplanted willows (generally 3 to 6 willows each at 4- to 5-foot spacing) would also be spaced along the banks between the constructed structures. Nine pools (approximately 1,500 square feet of instream impact) and one island (approximately 200 square feet of instream impact) would be constructed.

The project would require approximately 1,800 feet of temporary access routes and would use two equipment staging areas located more than 150 feet from Pole Creek. Construction activities would be conducted from the streambank with no need for stream crossings or temporary bridges.

A total of about 1.5 acres would be disturbed for the project.

Material excavated from re-opening the abandoned channels and meander bends (soil, gravel, willows, and sedge mats) would be used to construct the island and the willow and riparian bench structures. Sedge material would be salvaged from access routes and excavated areas and would be immediately replanted at the riparian bench locations. The logs for the small wood structures would be acquired commercially. Grubbed out areas for temporary access and staging would be roughened and replanted with native species when construction is complete.

As formerly abandoned meanders are connected, short sections of the current stream course would necessarily be abandoned between the upper end of the reconnected meander, where it leaves the current stream course, and the lower end, where it rejoins the current stream course. These sections would be filled with excavations from reopening the former meander. Before dewatering stream sections to be abandoned, the Idaho Department of Fish and Game would conduct fish salvage to capture and relocate all fish for their protection, with a focus on ESA-listed species.

Twelve-inch biodegradable vegetated coir logs would be placed where needed to minimize turbidity impacts downstream. The project would also include grass and sedge revegetation in all disturbed areas above the ordinary high-water mark. The project area would be planted with containerized native shrubs, hydroseeded, and treated for invasives using herbicides or manual pulling. Protective fencing (to exclude livestock from grazing in and along Pole Creek) is currently in place and would be kept in place. If sections need to be removed to provide access for this project, those sections would be repaired upon project completion.

Project construction would take place within the state-approved in-water work window (July 1 through late August), with revegetation planting occurring the following spring.

Funding this project would benefit Snake River spring/summer Chinook salmon, Snake River Basin steelhead, and bull trout, and would thus fulfill commitments under the 2020 National Marine Fisheries Service Columbia River System Biological Opinion (2020 NMFS CRS BiOp). These proposed activities also support commitments specified in the 2020 U.S. Fish and Wildlife Service Columbia River System Biological Opinion (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. 839 *et seq.*).

Environmental Effects

The implementation of this project requires the use of excavators and small track-mounted machines such as a skid steer, or a rubber-tired backhoe, for opening connections to the old meanders, constructing the island, shaping banks, moving sod, and installing wood structures. Some placements of sedge mats and plantings of individual willows and containerized plants would be conducted by hand. All of these restoration actions would disturb and displace soil in and along the stream, damage

vegetation, generate 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 this project are described in Chapter 3 of the Programmatic EA and summarized in this document.

Below is a description of the potential site-specific effects of the Pole Creek Habitat Restoration Project Phase 1 and an assessment of whether these effects are consistent with those described in the Programmatic EA. Because this project is designed to improve both aquatic and riparian habitats for the long term, the adverse effects from soil and vegetation disturbance and 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 Pole Creek are consistent with the analysis in Section 3.3.1 of the Programmatic EA ("*Fish and Aquatic Species*"). Section 3.3.1.3 of the Programmatic EA describes overall low impacts to fish and aquatic species after balancing moderate short-term adverse effects with highly beneficial long-term effects.

Three ESA-listed species 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 state- or federally-listed species of concern are present. Bonneville completed ESA consultation with respect to this project's effects on these listed species under its programmatic Habitat Improvement Program (HIP) consultation, which found that the project would likely adversely affect these species and their designated critical habitat in the short term, but likely would not result in jeopardy to the species or result in destruction or adverse modification of their designated critical habitat.

In the short term, the project would expose, displace, reconfigure, or compact earth through the use of mechanized equipment along Pole Creek and likely create conditions where small amounts of sediment could briefly be discharged. The amount of sediment discharge expected from the project would be moderate because there would be instream island construction, some bank excavation (for installing wood structures and for reconnecting abandoned channels and meanders), and rewatering of the newly opened meanders that would likely produce sediment from the exposed soil from excavations at either end. The sediment inputs would be typical of the amounts that fish and other aquatic species might naturally encounter in their environment, consistent with the moderate levels discussed in Section 3.3.1.2.1 of the Programmatic EA, and likewise have minimal potential for triggering the behavioral and physiological effects on fish from turbidity-induced 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 likely temporarily displace them from their preferred cover locations for the duration of the disturbance. The project area has limited vegetation that would screen human activity during work activities within and along the creek. Some work sites would require isolation (the damming of water flows around a work area or across the channel to effectively de-water the site), while others would be dewatered following fish capture ("fish salvage") and relocation to free-flowing portions of the river. Fish salvage involves electro-shocking, capture, and handling to relocate the fish. This is stressful on individual fish, but less so than stranding the fish without water. This

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>

anticipated amount of activity and the level of aquatic species disturbance is consistent with the analysis in Section 3.3.1.2.1 of the Programmatic EA.

The project's long-term beneficial effects include creation of more complex habitats through the reconnection of stream course meanders, addition of wood structures and woody streamside vegetation (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 stabilized by in-channel root systems (where none now exist). These beneficial effects are consistent with the analysis in Section 3.3.1.2.2 of the Programmatic EA.

Considering short-term adverse effects and highly beneficial long-term effects, the Pole Creek Habitat Restoration Project, Phase 1, would have overall low effects on fish and aquatic species consistent with the overall low impacts to fish and aquatic species analyzed in the Programmatic EA.

2. Water Resources

The effects of using small equipment and manually working in and along Pole Creek is consistent with the analysis in Section 3.3.2 of the Programmatic EA ("*Water Resources*"). Section 3.3.2.3 of the Programmatic EA 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 this project would make no water withdrawals, but it could potentially result in increased groundwater recharge since the connection between surface flows and the floodplain would be increased over both space and time.

Overall, this restoration project would produce localized short-term sediment inputs from the impacts of mechanized equipment along the streams in reconnecting meanders, shaping banks, creating the instream island, moving sod, installing wood structures, and transplanting willow clumps. Restoration actions would disturb lengths of stream or river bank consistent with the Programmatic EA (which evaluated actions that would disturb many hundreds of feet of river bank), but resulting sediment discharges likely would not be greater than what occurs naturally during annual 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, instream habitat structure, and increased riparian vegetative cover. These long-term beneficial effects are consistent with those described in the Programmatic EA.

Considering short-term adverse effects and highly beneficial long-term effects, the Pole Creek Habitat Restoration Project, Phase 1, would have overall low effects on water quality consistent with the overall low impacts to water quality analyzed in the Programmatic EA.

3. Vegetation

The effects of using small equipment and manually working in and along Pole Creek is consistent with the analysis in Section 3.3.3 of the Programmatic EA ("*Vegetation*"). Section 3.3.3.3 of the Programmatic EA 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 this project area.

This project is expected to produce impacts consistent with, or less than, those described in the Programmatic EA. There would be no large-scale earthmoving, with its associated vegetative loss, but there would be vegetation damage from constructed features (log structures, willow and sedge banks, and new side-channel openings), spanning less than 500 square feet, and these areas of impact would generally be separated from other similar features by up to 100 feet, which is less than the potential impact assessed in Section 3.3.3.2 of the Programmatic EA (*“Environmental Consequences for Vegetation”*), which evaluated constructed features that could disturb up to 50 contiguous acres. Impacts to vegetation would be limited to some damage or elimination of herbaceous vegetation caused by construction equipment and human foot traffic (from which the vegetation would be expected to recover quickly), and by the transplanting of entire willow clumps.

Considering short-term adverse effects and highly beneficial long-term effects, the Pole Creek Habitat Restoration Project, Phase 1, would have overall low to moderate effects on fish and aquatic species consistent with the overall moderate effects on vegetation analyzed in the Programmatic EA.

4. Wetlands and Floodplains

The effects of using small equipment and manually working in and along Pole Creek is consistent with the analysis in Section 3.3.4 of the Programmatic EA (*“Wetlands and Floodplains”*). Section 3.3.4.3 of the Programmatic EA describes overall low impacts to wetlands and floodplains after considering high short-term adverse effects against highly beneficial long-term effects.

A formal inventory of wetlands was not conducted for this project, though nearly all project features would be constructed or installed in a wetland of some sort, either instream, along the creek bank, or in abandoned, low-lying former creek channels. The project, however, would ultimately expand the acres that could be classified as wetlands, in some cases changing them from those with surface water to those dominated by vegetation (by island and riparian bench construction). There would be adverse impacts in the short term, but an increase in area of wetland conditions following project completion.

This project is anticipated to have less impact on floodplains and wetlands, including less short-term adverse effects, than what is described in the Programmatic EA: there would be less earth-moving, and the use of construction equipment would be limited to island and riparian bench creation rather than wholesale reshaping of floodplains and river channels, as described in the EA. 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 this project as there would be increased connectivity between Pole Creek and its floodplain from re-activated channels. This level of effect would be low, as stated in the Programmatic EA.

5. Wildlife

The effects of using construction equipment and manually working in and along Pole Creek is consistent with the analysis in the Section 3.3.5 of Programmatic EA (*“Wildlife”*). Section 3.3.5.3 of the Programmatic EA describes overall low impacts to wildlife after considering high short-term adverse effects against highly beneficial long-term effects. No wildlife species listed under the ESA or by the State of Idaho are present within this project area.

The short-term effects from this project in the Sawtooth Valley would be less than those analyzed in the Programmatic EA because the planned restoration actions would have less impact to soils and vegetation, and thus, to wildlife habitat. Though there would be some short-term, small-scale habitat destruction and modification, there would be no large-scale earthmoving, with its associated vegetative

loss and extensive small and medium-size animal impacts. Impacts would stem primarily from small-scale habitat modifications using construction equipment in the riparian habitats, and disturbance of wildlife by the temporary presence and activity of humans. This could destroy the habitats of a few small animals such as lizards, frogs, mice, shrews, and songbirds, but would only temporarily displace medium-size or larger animals from their preferred habitats during construction (a few days within any one area), and they would likely re-occupy the site once human activity has moved or ceased. Construction activities would occur in mid- to late summer, and would thus avoid disturbance to migratory bird nesting, which occurs in the spring.

Project actions, however, would improve riparian vegetation and wildlife habitats along Pole Creek for the long term, increasing the area's capacity to support both a higher number and a higher diversity of wildlife species than can be supported there now.

Considering short-term adverse effects and highly beneficial long-term effects, the Pole Creek Habitat Restoration Project, Phase 1, would have overall low effects on wildlife consistent with the overall low impacts to wildlife analyzed in the Programmatic EA.

6. *Geology and Soils*

The effects of using small equipment and manually working in and along Pole Creek is consistent with the analysis in Section 3.3.6 of the Programmatic EA ("*Geology and Soils*"). Section 3.3.6.3 of the Programmatic EA describes overall moderate impacts to geology and soils after considering moderate-to-high short-term adverse effects and mitigation measures and long-term benefits.

The short-term effects from this project 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 small excavator, skid steer, or backhoe would be the primary size of equipment in use, 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 reopen side channels, install large wood structures, create the island, and reshape stream banks would be low to moderate, which is less than the moderate effects discussed in the PEA.

7. *Transportation*

The effects of this project in and along Pole Creek is consistent with the analysis in Section 3.3.7 of the Programmatic EA ("*Transportation*"). Section 3.3.7.3 of the Programmatic EA describes low impacts to transportation.

The biggest impact of the proposed restoration actions on transportation would stem from vehicles transporting workers and equipment to project sites sharing local roads with other traffic. No roads would be closed, temporarily blocked, or relocated. 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 this proposed project, which would be located on private land within the Sawtooth National Recreation Area. Land uses would not change. The area is currently protected from agriculture and grazing and would remain so following this project. Public recreational opportunities on the private land (of which there is none because these private lands are not open to public use) would also remain unchanged. This non-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 project in and along Pole Creek are consistent with the analysis in Section 3.3.9 of the Programmatic EA ("*Visual Resources*"). Section 3.3.9.3 of the Programmatic EA describes low impacts to visual resources.

The proposed restoration actions in the Sawtooth Valley are located between 2,800 to 3,500 feet (one half to two thirds of a mile) away from a 1.1 mile stretch of State Highway 75, a heavily travelled highway (during the construction period), through the Sawtooth National Recreation Area. Though travel along this highway offers about a one-minute viewing period toward the project area, construction activity and ground disturbance details would not be discernable because the terrain is flat, offering no elevated view. Only one location along the highway offers a slightly elevated view, of perhaps ten to fifteen seconds in duration (if they look 90 degrees to the east), during which construction equipment may be visible due to its color and height. Also, 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. Upon project completion, there would be no change visible from the highway. This level of visual impact would be low, as stated in the Programmatic EA.

The project would alter the landscape and visual character of Pole Creek by increasing vegetative cover along the creek, changing its character over time from that of an overgrazed meadow to a willow-lined riparian area and would be compatible with the surrounding Upper Sawtooth Valley landscape. This would be considered a visual enhancement by most viewers, consistent with the low impacts analyzed in the Programmatic EA.

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

The effects of the proposed project in and along Pole Creek is consistent with the analysis in Section 3.3.10 of the Programmatic EA ("*Air Quality, Noise, and Public Health and Safety*"). Section 3.3.10.3 of the Programmatic EA describes low impacts to air quality, noise, and public health and safety.

The proposed restoration actions in the Sawtooth Valley would be located far from any major population center or public use area, eliminating any potential to directly affect the public, other than when workers traveling to and from work sites share the roads with others. Air quality and noise levels would be affected by emissions from, and operation of, construction machinery during excavation and placement of wood structures and island and bank construction. But these air and noise emissions would be very brief and too distant from any population or developed recreation area to be perceptible. No long-term source of air emissions or noise would be created, and none of the proposed restoration actions would affect public safety infrastructure (e.g., roads, telecommunications) or burden emergency services (e.g., police, fire, ambulance). This level of impact would be low, as stated in the Programmatic

EA. This level of effect on air quality, noise, and public health and safety would be low, consistent with the low impacts analyzed in the Programmatic EA.

11. Cultural Resources

The effects of these restoration actions in and along Pole Creek are consistent with the analysis in Section 3.3.11 of the Programmatic EA (*"Cultural Resources"*). Section 3.3.11.3 of the Programmatic EA describes low impacts to cultural resources because cultural resources would be avoided by project construction and effects would be appropriately resolved through the National Historic Preservation Act Section 106 consultation process.

The project area was surveyed for cultural resources, and on January 19, 2024, Bonneville consulted with the Shoshone Bannock Tribes of the Fort Hall Reservation, the Shoshone-Paiute Tribes of the Duck Valley Indian Reservation, and the Idaho SHPO on the effects of the Pole Creek Habitat Restoration Project: Phase 1. The inventory identified no historic properties within the area that may potentially be affected by project activities, and Bonneville made the formal determination that no historic properties would be affected. No response was received from SHPO, the Shoshone Bannock Tribes of the Fort Hall Reservation, or the Shoshone-Paiute Tribes during the 30-day regulatory response period, thus concurrence was presumed, and consultation completed.

As described in the Programmatic EA, the results of this consultation was that the project would not affect historic properties or would not adversely affect such properties if present. In the unlikely event that cultural material is inadvertently encountered during the implementation of this project, Bonneville would require that work be halted in the vicinity of the finds until they can be inspected and assessed by Bonneville, and in consultation with the appropriate consulting parties. This level of effect on cultural resources would be low, as was analyzed in the Programmatic EA.

12. Socioeconomics and Environmental Justice

The effects of this restoration project in and along Pole Creek is consistent with the analysis in Section 3.3.10 of the Programmatic EA (*"Socioeconomics and Environmental Justice"*). Section 3.3.10.3 the Programmatic EA 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. This project would not displace people or eliminate residential suitability from 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 its impacts are limited to the private lands on which they are located, and no offsite effects are anticipated that could affect environmental justice populations elsewhere.

There would be no adverse effects on socioeconomics or environmental justice populations from this project which is consistent with the low level of effect described in the Programmatic EA.

13. Climate Change

The effects of this project in and along Pole Creek is consistent with the analysis in Section 3.3.14 of the Programmatic EA (*"Climate Change"*). Section 3.3.14.3 of the Programmatic EA, describes low impacts to climate change.

Due to the short duration of construction activities and the relatively small number of vehicles involved, project-related greenhouse gas emissions are expected to be low. 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. Further, 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, consistent with the low level of effects described in the Programmatic EA.

Findings

The types of restoration actions and the potential impacts related to the proposed Pole Creek Habitat Restoration Project Phase 1 is 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 C.F.R. § 1021.314 and 40 C.F.R. § 1502.9(d). Therefore, no further NEPA analysis or documentation is required.

Robert W. Shull
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Cor-Source Technology Group

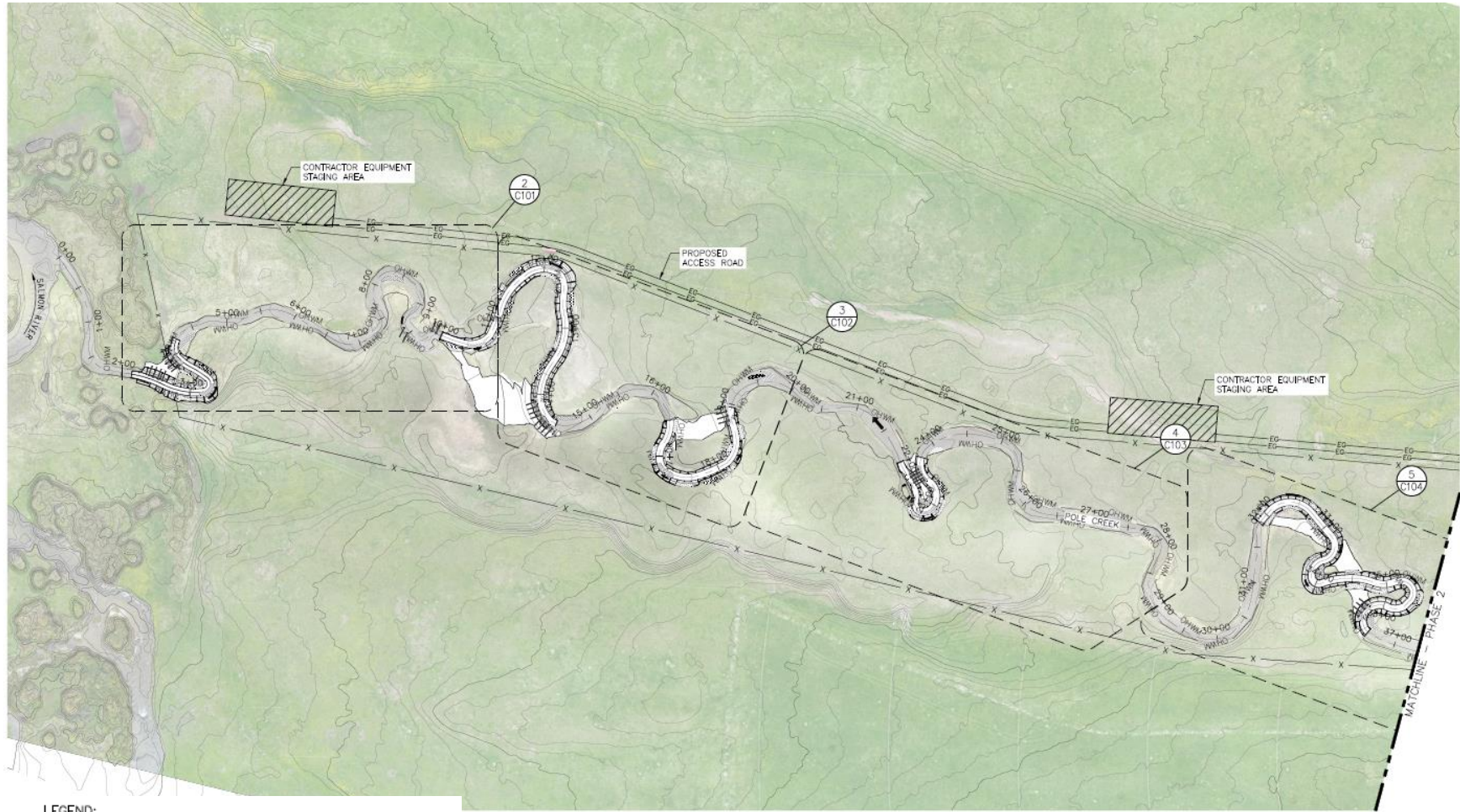
Reviewed by:

Carolyn Sharp
Supervisory Environmental Protection Specialist









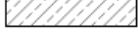
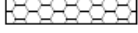

Concur:

Katey Grange
NEPA Compliance Officer

Appendix A: Pole Creek Habitat Restoration Project Phase 1 proposed project actions



LEGEND:

-  CONTROL POINT
-  FLOW ARROW
-  FLOW LINE
-  CONTOUR
-  CHANNEL ROUGHENING STRUCTURE
-  WILLOW CLUMP BANK
-  SEDGE / WILLOW BENCH
-  WILLOW LIVE POLE PLANTING
-  POOL
-  CONSTRUCTED ISLAND
-  INFILL

PLAN

SCALE: 1" = 80'



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C001

