

Supplement Analysis
for the
Columbia River Basin Tributary Habitat Restoration
(DOE/EA-2126/SA-31)

Silver Falls Habitat Restoration Project
BPA project number 2009-003-00
BPA contract number 89361

Bonneville Power Administration
Department of Energy



Introduction

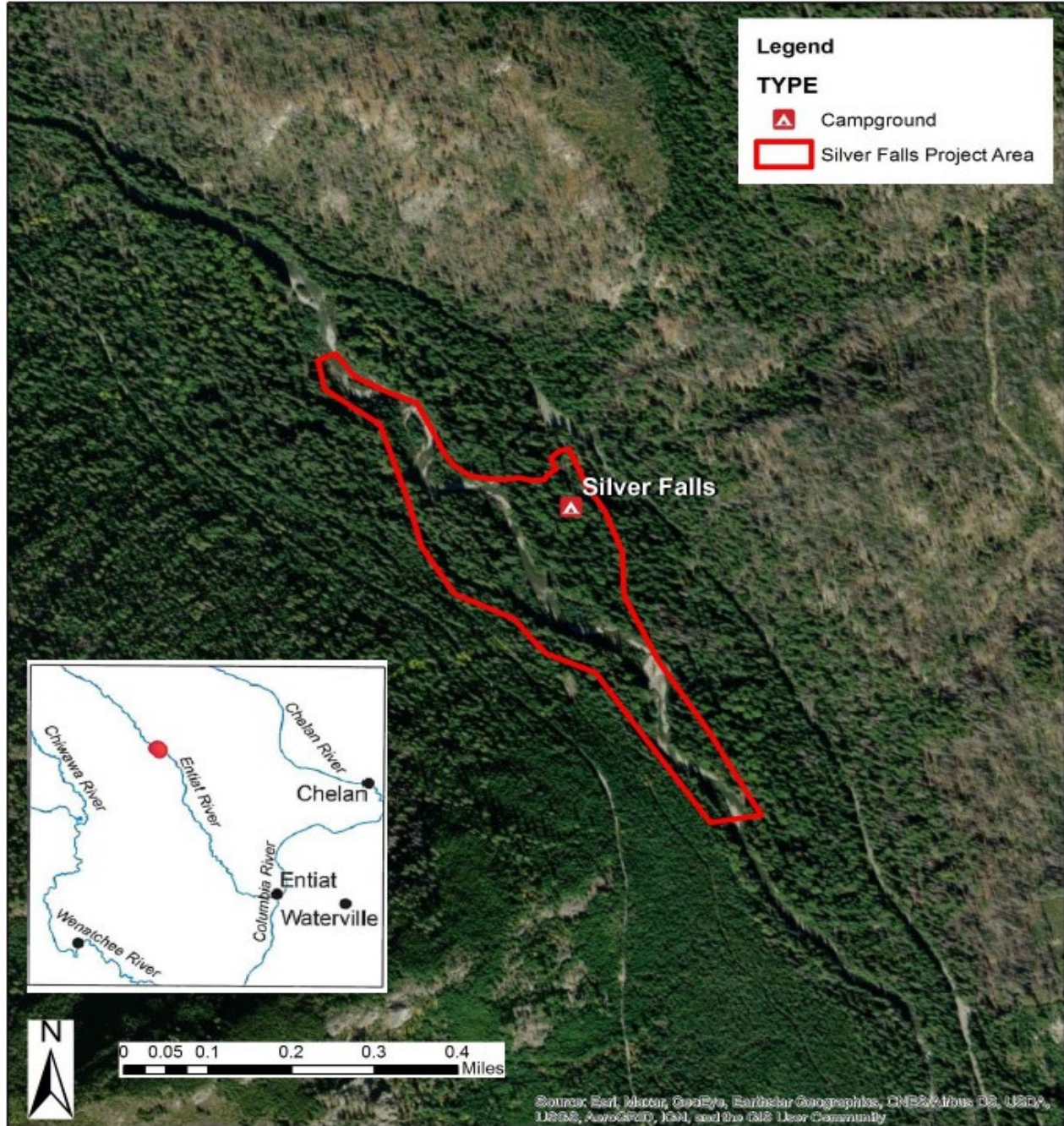
In December 2020, Bonneville Power Administration (Bonneville) and the Bureau of Reclamation completed the *Columbia River Basin Tributary Habitat Restoration Programmatic Environmental Assessment* (DOE/EA 2126) (Programmatic EA). The Programmatic EA analyzed the potential environmental impacts of implementing 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 *Silver Falls Habitat Restoration Project* that would implement many of the specific restoration actions assessed in the Programmatic EA in the Entiat River valley in Chelan County, Washington. The project objectives are to increase in-stream habitat diversity and off-channel habitat for the benefit of Endangered Species Act (ESA)-listed salmonids. This SA analyzes the site-specific impacts of the *Silver Falls Habitat Restoration Project* to determine if they are within the scope of the analysis considered in the Programmatic EA, including whether there are substantial changes to the proposal analyzed in the 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) and 10 CFR 1021 *et seq.*

Proposed Action

Bonneville proposes to fund Yakama Nation Fisheries (YNF) to implement the *Silver Falls Habitat Restoration Project*. The project would be located approximately 30 miles northwest of Entiat, Washington (WA), and extend for approximately 1.0 mile along the Entiat River (see Figure 1). The Entiat River flows southeast through a valley surrounded by forested mountains, and is a tributary of the Columbia River, joining the Columbia near Entiat, WA. Land use in the project area is dominated by forestry and recreation. Recreation within and near the project area includes a moderate level of camping and hiking occurring late spring through early fall at Silver Falls Campground and Silver Falls National Recreational Trail.

Figure 1 - Silver Falls Habitat Restoration Project Area and Vicinity Map



The project would occur on Okanogan-Wenatchee National Forest (National Forest) managed lands within and near the National Forest’s Silver Falls Campground. Habitat conditions within this area along the Entiat River have been measured to be at risk and unacceptable for supporting anadromous fish. Historical river clearing, logging, and campsite and road development have contributed to decreased cover habitat, decreased pools, and decreased side channel connectivity, all of which this project seeks to address.

The project would install approximately 65 loose-placement and about 15 large-wood habitat structures in and along the river and side channels; excavate a new side-channel inlet; enhance an existing side-channel inlet; and realign about 1,000 feet of side channel. Loose-placement habitat structures would consist of about 35 tipped trees and 80 helicopter-placed trees. Large-wood structures would consist of multiple pieces of small and large wood, anchored with wood pilings. Trees would come from stream banks, equipment access routes in the National Forest, as well as from non-federal lands via commercial purchase. Installation of large-wood structures and some loose-placement structures would include excavation of streambanks or scour pools to facilitate placement of the wood at the designated elevation. Excavated streambank soil and stream gravel would be stockpiled on site for use as additional ballast for the large-wood structures. Site-specific work areas for each treatment would typically be less than 1,000 square feet; the duration of each restoration action would be about a few hours; and work areas would be separated from each other, typically by about 50 to 150 feet.

The existing National Forest campground road would be utilized for access and staging of materials and equipment. A 90-foot temporary bridge would be utilized for work activities along the river across from the campground. An existing hiking trail would be utilized for construction access within and near the campground. Wood would be staged and placed at strategic locations by helicopter to reduce access through the floodplain, and placed by a combination of helicopter and land-based heavy equipment. A helicopter landing fly-yard would be located approximately 9 miles southeast of the project area within an existing National Forest log yard. In the side channel area where wetland disturbance would be unavoidable to reach project sites, a wetland mat would be installed prior to any heavy equipment crossing. In areas requiring dewatering (large-wood habitat structures), sheet-pile cofferdams would be installed to isolate the in-water work. The project area would be replanted and seeded in disturbed areas. In addition, the project area would be monitored closely in future years and adaptively managed to ensure survivability success to achieve desired in-stream and riparian habitat values, such as: structural integrity of installed habitat structures, extent of plant cover in replanted and seeded areas, and treatment of invasive plants. All other activities would take place in 2023 at the start of the in-water work window (July 1 – August 15). The environmental effects of these types of restoration actions were evaluated in the Programmatic EA.

These actions would support conservation of ESA-listed species considered in the 2020 ESA consultations with both the National Marine Fisheries Service and US Fish and Wildlife Service on the operations and maintenance of the Columbia River System. This project also supports ongoing efforts to mitigate for effects of the Federal Columbia River Power System on fish and wildlife in the mainstem Columbia River and its tributaries pursuant to the Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Northwest Power Act) (16 U.S.C. (USC) 839 *et seq.*).

Environmental Effects

The implementation of this project would require the use of heavy equipment and a helicopter for placing wood. The felling of trees, planting, and seeding would all be conducted by hand. To protect aquatic species and provide fish passage during in-stream construction activities, temporary sheet-pile cofferdams would be installed in some work locations. Fish and aquatic species would be salvaged from the isolated work areas and translocated downstream of the in-stream work areas. All of these restoration actions would disturb and displace soil in and along the river and side channels; damage vegetation; create noise and vehicle emissions; stress handled fish; and temporarily increase vehicle traffic and human activities in the project area. The typical effects associated with the environmental

disturbances created by the 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 *Silver Falls Habitat Restoration 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 habitat conditions 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 heavy equipment and manually working in and along the river and side channels 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 considering moderate short-term adverse effects and beneficial long-term effects.

Two fish species listed under the ESA are present in the project area: Upper Columbia River (UCR) spring Chinook salmon and UCR steelhead. Consultation on the effects of the project on these species was completed under the US Forest Service's programmatic Aquatic Restoration Activities in the States of Oregon, Washington and portions of California, Idaho and Nevada (ARBO II) consultation. The conclusion of the consultation was the project would likely adversely affect these species and their designated critical habitat in the short term, but would not likely result in jeopardy to the continued survival of these species or result in destruction or adverse modification of their designated critical habitat.

The short-term adverse effects of the project would expose, displace, reconfigure, or compact earth through the use of heavy equipment within and along the river and side channels, and likely create conditions where sediment would be released for short periods of time following construction activities. The amount of sediment anticipated from the project would be moderate because there would be instream excavation. However, the use of helicopters to deliver wood is designed to minimize ground disturbance by heavy equipment, and mitigation measures as detailed in the Programmatic EA (e.g., requiring in-stream work areas to be isolated during construction) would be applied. The sediment inputs would be typical of the amounts that fish and other aquatic species naturally encounter in their environment during high flow events, but well below the larger amounts evaluated in the Programmatic EA at Section 3.3.1.2.1.

The work area isolation, fish salvage, and instream construction activities would displace fish from work areas until the work activities are completed. Small aquatic organisms that could not be salvaged would likely be destroyed. The newly constructed in-stream areas would be re-colonized by fish and other aquatic organisms with near-full recovery likely in a matter of weeks, and full recovery likely following the first seasonal flushing flows. The anticipated amount of activity and the level of aquatic species disturbance, however, is consistent with the analysis in the Programmatic EA at Sections 3.1.3.1 and 3.3.1.2.1. In the Programmatic EA, direct, harmful, and sometimes fatal impacts to aquatic species are disclosed, and movement, sounds, and vibrations of human and mechanical activities are discussed as likely to disturb fish and displace them from their preferred habitat for as long as that movement, sound, and vibration are present.

The project's long-term beneficial effects include creation of more complex instream habitat through the addition of wood structures (where low levels and limited potential for natural wood recruitment exist), thereby creating or restoring pool habitat, fish cover, spawning gravel, and rearing habitat for

adult and juvenile steelhead and spring Chinook salmon. 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 heavy equipment and manually working in and along the river and side channels 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 considering moderate short-term adverse effects and beneficial long-term effects. There would be a beneficial long-term effect of this project on water quantity. This project would provide for an increase of long-term water table inputs through restored floodplain function and increased connectivity of the river and side channels to their floodplains.

Overall, this project would create short-term, localized, sediment inputs from the impacts of heavy equipment working in and along the river and side channels. Each restoration action would likely disturb up to 50 feet of stream or river bank in each treatment work area (the Programmatic EA evaluated actions that would disturb hundreds of feet of river bank), and the sediment produced from this restoration action 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 floodplains to effectively and naturally function (e.g., manage sediment loads); and a reduction of stream temperatures from improved stream form, instream habitat structure, and increased riparian vegetative cover. These long-term beneficial effects are consistent with those described in the Programmatic EA.

3. Vegetation

The effects of using heavy equipment and manually working in and along the river and side channels 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 considering moderate short-term adverse effects and beneficial long-term effects. No plant species listed under the ESA or other sensitive plant species have been documented within these project areas.

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 1,000 square feet (0.02 acre) 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 occur from heavy equipment turning soil, and plants being uprooted, buried, crushed, or torn apart. However, disturbance to plants would only occur when absolutely necessary either to reach a site or during excavation activities. The project has been designed to minimize impacts to native vegetation. Vegetation would be restored through seeding and planting native species in disturbed areas following project implementation. Trees removed during construction would be saved to be used during placement of wood structures. This level of effect would be moderate in the short term. The long-term beneficial effects of restored or improved vegetative conditions would

be moderate. The overall effects of the project would be moderate in the longer term and would be consistent with those evaluated in the Programmatic EA.

4. Wetlands and Floodplains

The effects of using heavy equipment and manually working in and along the river and side channels 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 considering short-term adverse effects and beneficial long-term effects.

This project is anticipated to have less impact than that described in the Programmatic EA. With this project, there would be less short-term (weeks) adverse effects to floodplains and wetlands: there would be less extensive earth-moving; heavy equipment operations would be used in less than half an acre of wetland (for which a Clean Water Act Section 404 permit and 401 Water Quality Certification have been issued to the YNF); and no temporary dewatering of stream channels. In contrast, the Programmatic EA evaluated more extensive impacts to wetlands from the actions of more 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 channels and the floodplains from the newly installed wood structures. There would also be some flow redirection as wood structures would facilitate more natural lateral movement and sinuosity of channels, and this would slow water velocities, facilitate more effective connection between the channels and the floodplains, and provide for more efficient sediment movement and retention in the floodplains. This level of effect would be low and consistent with the analysis in the Programmatic EA.

5. Wildlife

The effects of using heavy equipment and helicopters, and manually working in and along the river and side channels 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 considering short-term adverse effects and beneficial long-term effects.

Two wildlife species listed under the ESA are present in the project area: gray wolf and northern spotted owl. Consultation on the effects of the project on these species was completed under the US Forest Service's ARBO II consultation with the conclusion that the project "*may affect, but is not likely to adversely affect*" these species. No additional sensitive wildlife species have been documented within these project areas.

The disturbance of wildlife by the movement, sounds, and vibrations of human and mechanical activity during construction would disturb wildlife and likely displace them temporarily from their preferred habitat for as long as that movement, sounds, and vibrations are present. The project area is essentially forested and has some potential for screening human activity that would be conducted within and along the river and side channels. The anticipated amount of activity and the level of wildlife disturbance would be low, as is stated in the Programmatic EA.

Vegetation removal could cause temporary or permanent displacement of wildlife as it may take one or more growing seasons for desired habitat conditions to be restored. Riparian vegetation removal could also affect non-mobile species such as invertebrates and amphibians that could not escape for the

duration of the activity, as there would be unavoidable disturbance and changes in habitat structure. Additional impacts to non-mobile species could include stress (disrupted feeding, breeding, hiding, etc.) and mortality from crushing by heavy equipment. These adverse effects would be short term (one or more years); however, the resulting condition of the restoration action would provide habitat conditions that would be restored over what had been there previously, with the intended vegetative conditions having a higher carrying capacity for both dependent and generalist wildlife than current conditions. Long-term benefits include increased plant species richness and diversity, increased habitat structural diversity, increased habitat heterogeneity, and increased extent of riparian habitat.

The short-term effects on small, individual wildlife species may be moderate to high for individuals that are harmed or killed by construction activities, but effects would be comparatively minor for larger animals that may only be displaced from habitats rendered unsuitable for occupancy for a short period of time. The long-term effects on wildlife populations, however, would be beneficial from the increased habitat quality and carrying capacity resulting from the project. The overall effects of the project would be low and consistent with those evaluated in the Programmatic EA.

6. Geology and Soils

The effects of using heavy equipment and manually working in and along the river and side channels 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 this project would be less than those analyzed in the Programmatic EA because the planned restoration actions 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 heavy equipment used, so there would be some localized soil compaction and disturbance as the equipment travels across the project areas and maneuvers at each construction site. However, the limited use of heavy equipment is much less of an impact than was considered in the Programmatic EA, and mitigation measures designed to minimize adverse effects, such as minimizing the area of impact through the use of a helicopter, and applying erosion control measures, would also be applied. The level of effect from heavy equipment would be moderate on geology and soils.

7. Transportation

The effects of the proposed project in and along the river and side channels 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.

This project, along the Entiat River, 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 main effect that 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 and consistent with the analysis in the Programmatic EA.

8. Land Use and Recreation

The effects of the proposed project in and along the river and side channels are consistent with the analysis in the Programmatic EA, Section 3.3.8, "*Land Use and Recreation*." The Programmatic EA, Section 3.3.8.3, states that overall effects on land uses and recreation would be low to moderate.

There would be no effect on land use, and minimal effect on recreation from the proposed project. Land uses would not change, and public recreational opportunities on the river at this location would result in short-term displacement of recreational users from the immediate project area. Temporary displacement of recreational users would occur at the proposed project area, in Silver Falls Campground, for about 4 weeks. There are other recreational opportunities in the areas to serve as alternatives during the displacement. Kayaking occurs in the upper three miles of the Entiat River within the Glacier Peak Wilderness Area during high flows in late spring and to a minimal degree within the project area at Silver Falls during high flows. There would be no effect on kayaking from the proposed project which would be implemented after the high flows in late spring. No permanent change in land use or recreation would occur from the proposed project. This level of effect is consistent with that described in the Programmatic EA at Section 3.3.8.2, which describes low to moderate impacts to land use and recreational opportunities.

9. Visual Resources

The effects of the proposed project in and along the river and side channels 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 are far from any major highway or other potential viewpoint and thus, would not be visible to anyone other than the recreators visiting the river reach. 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, and consistent with the analysis in the Programmatic EA.

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

The effects of the proposed project in and along the river and side channels 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 are far from any major population center or public use area; thus, the only potential impacts to the public would be from sharing the roads when workers travel to and from work site. Air quality and noise would be affected by operations and emissions from the construction machinery, including the helicopter, and equipment to be used during construction. 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 the potential to impact public safety infrastructure (e.g., roads, telecommunications) or place a substantial burden on emergency services (e.g., police, fire, ambulance). This level of impact would be low, and consistent with the analysis in the Programmatic EA.

11. Cultural Resources

The effects of the restoration action in and along the river and side channels is 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 and potential effects would be appropriately resolved through the Section 106 consultation process under the National Historic Preservation Act.

A cultural resource survey was conducted, and consultations with the Washington State Department of Archaeology and Historic Preservation (DAHP), Confederated Tribes and Bands of the Yakama Nation (YN), and Confederated Tribes of the Colville Reservation (CTCR) were completed for the area potentially affected by the proposed project. The results of that survey and consultations were that no cultural resources were identified and no historic properties would be affected. CTCR concurred on March 23, 2022, and DAHP concurred on March 31, 2022, that the project would have no effect on historic properties. A response was not received from the YN.

12. Socioeconomics and Environmental Justice

The effects of this restoration project in and along the river and side channels are consistent with the analysis in the Programmatic EA, *"Socioeconomics and Environmental Justice,"* Section 3.3.13. The Programmatic EA, Section 3.3.13.3, describes low impacts to socioeconomics and environmental justice.

As described in the Programmatic EA, the restoration action would not generate a requirement for additional permanent employees or 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 from lands being restored, or from lands near the site. 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 on the National Forest lands that could be affected by this project, therefore there would be no impacts to environmental justice populations.

13. Climate Change

The effects of this project in and along the river and side channels are consistent with the analysis in the Programmatic EA, Section 3.3.14, *"Climate Change."* The Programmatic EA, Section 3.3.14.3, describes low impacts to climate change.

Due to the short duration of construction and the relatively small number of construction vehicles and the helicopter, emissions associated with project construction activities are anticipated to be short-term and low. Therefore, the project would have a low level of greenhouse gas production and would have a low contribution to climate change from short-term emissions from motorized equipment operations during implementation of the restoration actions. Further, these greenhouse gas emissions would be offset to some degree by the ameliorating effects of restored floodplain function such as increased carbon sequestration in expanded wetlands. This project would also provide for an increase of long-term water table inputs through restored floodplain function and increased connectivity of the river and side channels to their floodplains. It would also increase riparian shading along the river and side channels. Both of these results could ameliorate the effects of climate change on aquatic species. The overall effects on climate change and greenhouse gas production would be low.

Findings

The types of actions and the potential impacts related to the proposed *Silver Falls Habitat Restoration Project* 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 Programmatic EA's Proposed Action and no significant new circumstances or information relevant to environmental concerns bearing on the Programmatic EA's

Proposed Action or its impacts within the meaning of 10 CFR § 1021.314 *et seq.* and 40 CFR §1502.9(d). Therefore, no further NEPA analysis or documentation is required.

/s/ Brenda Aguirre

Brenda Aguirre
Environmental Protection Specialist

Concur:

/s/ Sarah T. Biegel

Sarah T. Biegel
NEPA Compliance Officer

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