Supplement Analysis
for the
Columbia River Basin Tributary Habitat Restoration Project
(DOE/EA -2126/SA-35)

Murderers Creek Habitat Improvement Project
BPA project number 1984-021-00
BPA contract number 84041

Bonneville Power Administration
Department of Energy

Introduction

In December 2020, Bonneville Power Administration (BPA) 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 Murderers Creek Habitat Improvement Project (Project) that would implement some of the specific restoration actions assessed in the Programmatic EA in Murderers Creek in Grant County, Oregon. The objective is to address limiting factors at Murderers Creek for the benefit of Endangered Species Act (ESA)-listed Mid-Columbia River steelhead (*Oncorhynchus mykiss*) and its designated critical habitat.

This SA analyzes the site-specific impacts of the Project to determine if the Project is within the scope of the analysis considered in the Programmatic EA. It also evaluates whether the Project presents significant new circumstances or information relevant to environmental concerns that were not addressed by the Programmatic 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 Activities

BPA is proposing to fund the Oregon Department of Fish and Wildlife (ODFW) to implement the Project. The Project would be located 13 miles south of Dayville, 3 miles upstream of the confluence with South Fork of the John Day River at Murderers Creek in Grant County, Oregon (Figure 1). This Project is also within the ODFW-managed Phillip W. Schneider Wildlife Area, which is an inholding within Federal lands managed by the Forest Service and the Bureau of Land Management. The Project would address some of the limiting factors identified at Murderers Creek (habitat diversity, sediment input, temperature, and key habitat quantity) along 2.5 miles of Murderers Creek. Habitat complexity and floodplain connectivity would be enhanced by wood installations, anthropogenic feature removal, and floodplain treatments; disturbing approximately 76 acres, with 45 acres of floodplain expected to be activated during higher flow events post-construction.

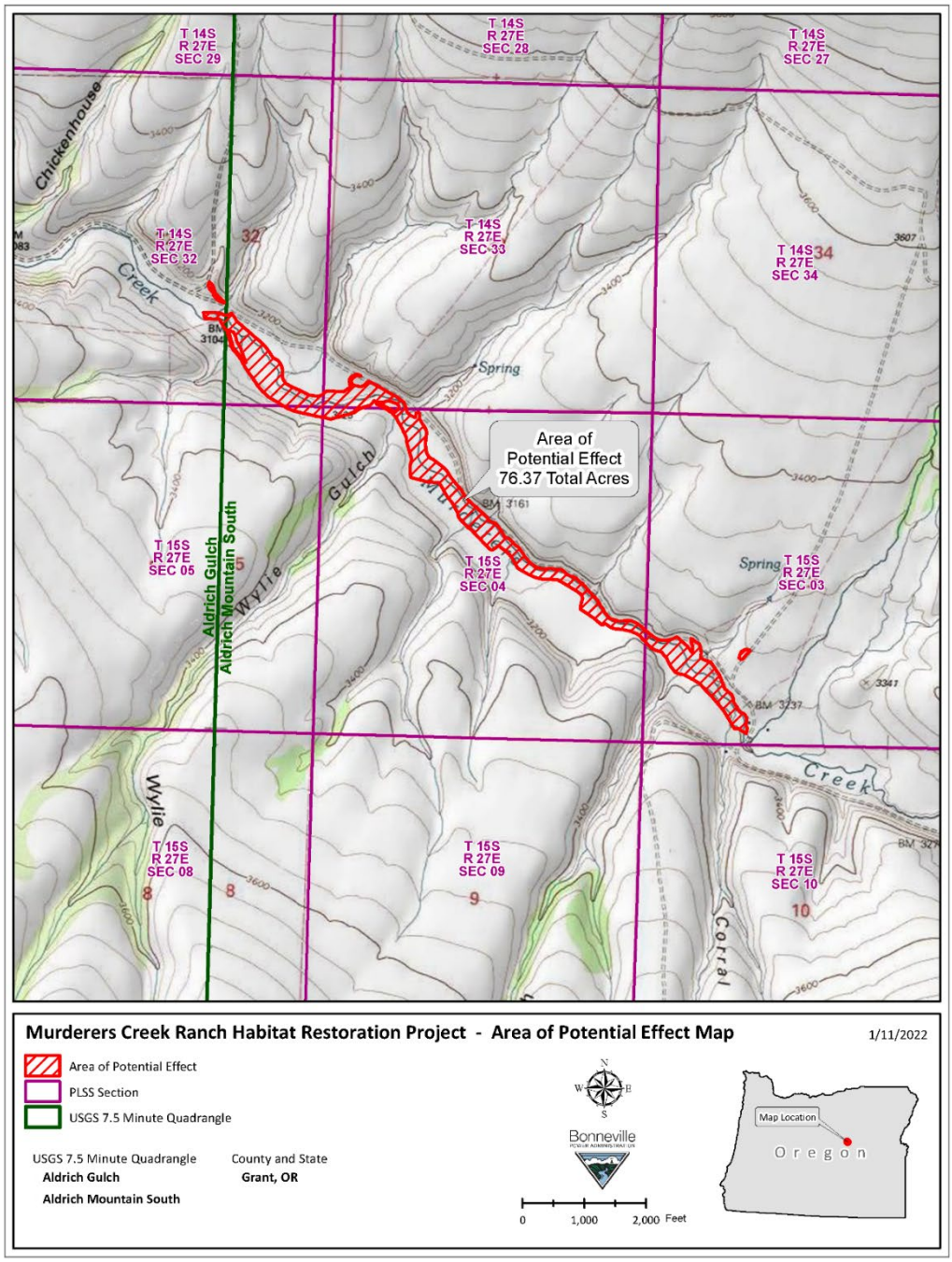

Figure 1. Murderers Creek Habitat Improvement Project Location.

Historically, Murderers Creek within the project area was a mix of single- and multi-thread channels with interconnected beaver wetland complexes. Land cover featured denser stands of vegetation, with deciduous species that prefer riparian environments including alder, willows, and cottonwoods with understories of grasses and shrubs dominating the valley bottom, and juniper and ponderosa pine dominating upland areas. Anthropogenic impacts over the decades include removal of beaver, in-stream wood removal and stream channelization projects, riparian timber harvests, and past grazing management practices which have altered fluvial and geomorphic processes within Murderers Creek.

Currently managed by ODFW as part of the Oregon Conservation Strategy (OCS), The Phillip W. Schneider Wildlife Area is open for wildlife-oriented recreational activities including viewing, photography, bird watching, and sightseeing.

The treatments include:

WOOD INSTALLATION

The Project would use 250 individual logs in 48 apex jams, 32 channel spanning jams, 91 deflector jams, 36 post line weaves, and 85 post deflectors from previously sourced wood.

ANTHROPOGENIC FEATURE REMOVAL

Anthropogenic features within the project area such as riprap, rock barbs, and approximately 1,400 feet of berm would be removed to improve floodplain connection. A small amount of existing riprap and rock barb material would be re-purposed for ballast or instream habitat features (or a combination of both). Suitable berm material would be placed instream and along the channel margins, as mid-channel bars, and incorporated into large wood structures. Non-native materials such as large angular rock would be disposed of in identified upland disposal areas.

FLOODPLAIN

The floodplain would be graded to produce swales, channel banks, and other floodplain features. A total of approximately 660 feet of side channel inlets would be excavated at 13 locations. Sections of the existing riparian fence would be removed.

Project construction is anticipated to begin with pre-construction activities in May 2023 with staking, access route and staging development, staging and floodplain work in the dry. All instream work would occur during July 15 to August 31, 2023.

Wood installations, floodplain grading, berm and riprap removal, and excavation all would require the use of heavy machinery (medium/large excavators, ten-wheeler and off-road trucks, small skidsteer loaders, front end loader, and potentially telehandlers) and be completed by a subcontractor hired by the South Fork John Day Watershed Council and funded by the Oregon Watershed Enhancement Board. ODFW project staff would oversee and assist with the habitat implementation treatments and conduct post-project planting efforts.

Following instream work and construction efforts, fencing would be installed and all areas of disturbance would receive restoration planting treatments ranging from seed and mulch to 1,000 live plants (cottonwoods, willows, alders, and 200 red osier.) Approximately 2.6 acres would be planted and two miles of fencing, including two associated water gaps, would be installed. Fence support structures would be either treated wood or metal.

There may be additional work as needed to address issues identified after construction that would be managed in accordance with the Project's adaptive monitoring and adaptive management plan[1].

These actions would support conservation of ESA-listed species considered in the 2020 ESA consultations with National Marine Fisheries Service (NMFS) on the operation and maintenance of the Columbia River System, 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

[1] Murderers Creek Restoration Monitoring and Adaptive Management Plan V2, ODFW; October 18, 2019.

pursuant to the Pacific Northwest Electric Power Planning and Conservation Act of 1980, 16 U.S.C. 839 *et seq*.

Environmental Effects

Implementation of this Project would require the use of heavy equipment for staging, hauling, and excavation of materials, and placement of large wood structures. All of these restoration actions during construction would disturb and displace soil in and along the stream, damage vegetation, create noise and vehicle emissions, stress fish, 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 summarized in this document. Below is a description of the potential site-specific effects of the Project, and an assessment of whether these effects are consistent with those described in the Programmatic EA. Because the Project is designed to improve both aquatic and riparian habitats for the long term, adverse effects from soil and vegetation disturbance and human and mechanical activity would be short-term effects only.

1. **Fish and Aquatic Species**

The effects of using mechanized equipment and manually working in and along Murderers 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 ("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.

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. Murderers Creek supports ESA-listed Mid-Columbia River steelhead and its designated critical habitat. Consultation with National Marine Fisheries Service (NMFS) on the effects of this Project on this ESA-listed species was completed under BPA's programmatic Fish and Wildlife Habitat Improvement Program. NMFS concluded 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 continued existence of this species or result in destruction or adverse modification of its 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, 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 and ameliorated through the use of mitigation measures.

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 not survive. The newly constructed in-stream areas would be re-colonized by fish and other aquatic organisms with full recovery likely within the following months to years. 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 for the benefit of Chinook salmon through the addition of wood structures and floodplain reconnection treatments thereby creating or restoring pool habitat, fish cover, spawning gravel, and rearing habitat. 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 Murderers Creek and floodplain 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 because it would increase 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. Sediment produced from this restoration action and subsequent rewatering 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 mechanized equipment and manually working in the Murderers Creek floodplain are consistent with the analysis in Section 3.3.3 of the Programmatic EA ("Vegetation"). Section 3.3.3.3 of the Programmatic EA ("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 special-status species of concern or ESA-listed or state-listed plant species are present within the project area.

The construction activities are anticipated to have impacts consistent with those described in the Programmatic EA. Installing the temporary access, grading the floodplain, and constructing side channels would remove vegetation from those sites, though all impacted sites would be planted or seeded following construction activities. Section 3.3.3.2 of the Programmatic EA ("Environmental Consequences for Vegetation") evaluated constructed features that could disturb large areas of acreage; the area impacted by the Project would measure about 76 acres. Impacts to vegetation would also include trampling of herbaceous vegetation by mechanized equipment and human foot traffic (from which the vegetation would be anticipated to recover well). The completed project area would be

seeded and planted with native riparian shrubs and trees. This level of effect would be beneficial and consistent with that described in the Programmatic EA.

4. **Wetlands and Floodplains**

The effects of using mechanized equipment and manually working in and along Murderers Creek and its floodplain are 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 ("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.

The Project is anticipated to have impacts similar to those described in the Programmatic EA. Specifically, there would be short-term (i.e., weeks-long) adverse effects to floodplains due to earthwork. Appropriate Clean Water Act permitting would be obtained by ODFW prior to any waterbody disturbance.

Consistent with the Programmatic EA, Project implementation would also have long-term beneficial effects. It would create conditions in this stream reach with increased connectivity to the floodplain, improve groundwater exchange, diversify wetland conditions, and thereby increase the amount and quality of wetlands in the Project area. There would also be some flow redirection as wood structures would facilitate more natural lateral movement and sinuosity of channels, 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 after considering short-term adverse effects and beneficial long-term effects, and is consistent with the Programmatic EA.

5. **Wildlife**

The effects of using mechanized equipment and manually working in and along Murderers Creek are consistent with the analysis in Section 3.3.5 of the Programmatic EA ("Wildlife"). Section 3.3.5.3 of the Programmatic EA ("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.

ESA-listed gray wolf (*Canis lupus*) may be present within Grant County, but suitable habitat is not located within or near the Project site, and the Project would thus have no effect on gray wolf. Several OCS species have been identified within the Philip J. Scheiderman Wildlife Area: great gray owl (*Strix nebulosi*), ferruginous hawk (*Buteo regalsi*), Swainson's hawk (*Buteo swainsoni*), flammulated owl (*Psiloscops flammeolus*), burrowing owl (*Athene cunicularia*), greater sage grouse (*Centrocerus urophasianus*), Lewis's woodpecker (*Melanerpes lewis*), white-headed woodpecker (*Picoides albolarvatus*), black-backed woodpecker (*Picoides articus*), pileated woodpecker, (*Dryocopus pileatus*), upland sandpiper (*Bartrammia longicauda*), olive-sided flycatcher (*Contopus cooperi*), California myotis (*Myotis californicus*), fringed myotis (*Myotis thysanodes*), hoary bat (*Lasiurius seminolus*), long-legged myotis (*Myotis volans*), and pallid bat (*Snytozous palidus*). No other ESA-listed, state-listed, or other sensitive wildlife species are present within the Project area.

The disturbance of wildlife by the movement, sounds, and vibrations of human and mechanical activity during construction displace them temporarily from their preferred habitat while those activities are present. No work would occur during breeding or nesting season. The Project would create conditions within this reach that are conducive for beaver recolonization. Upland areas would not be revegetated; the newly-opened areas would provide additional winter forage areas and would be beneficial to local wildlife species in the long term.

The Project's short-term effects would be consistent with those analyzed in the Programmatic EA. The actions of humans and machines in this area would temporarily displace wildlife from their preferred locations and prevent them from reoccupying the site until construction is complete, at which point that habitat would be more diverse but vegetatively similar. The 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 temporarily displaced. The long-term effects on wildlife populations, would be beneficial from the increased habitat quality and carrying capacity resulting from the Project. The overall effects of the Project would be beneficial and consistent with those evaluated in the Programmatic EA.

6. **Geology and Soils**

The effects of using mechanized equipment and manually working in Murderers Creek and its floodplain are 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 ("Effects Conclusion for the Proposed Action on Geology and Soils") describes moderate impacts to geology and soils.

The Project is anticipated to have impacts consistent with those described in the Programmatic EA. Floodplain grading and constructing wood structures and berm removal would require excavation and thereby cause soil displacement, compaction, and mixing of soil horizons. The Programmatic EA considered actions that could disturb large areas at any one site. The area impacted by this action would be about 76 acres. Design criteria, mitigation measures, and best management practices such as stockpiling of topsoil, dust abatement, and erosion protection measures would all be applied as described in Section 2.4 of the Programmatic EA ("Mitigation Measures and Design Criteria") to minimize impacts and maintain long-term soil productivity.

The Project does not specifically target soils for restoration or enhancement (as it does fish habitat and hydrologic functions), but the proposed actions could result in maintaining and improving soil properties and functions as hydrologic function is restored within the floodplain and from revegetation efforts. The level of effect would be beneficial, consistent with the effect level described in the Programmatic EA.

7. **Transportation**

The effects of this Project in and along Murderers Creek are consistent with the analysis in Section 3.3.7 of the Programmatic EA ("Transportation"). Section 3.3.7.3 of the Programmatic EA ("Effects Conclusion for the Proposed Action on Transportation") describes low impacts to transportation.

This Project is adjacent to Murderers Creek Access Road and 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. No work would be conducted from the highway or its shoulders. As part of the Project, vehicles transporting workers and equipment to project sites would be sharing local roads with other traffic during construction, and the Philip J. Scheiderman Wildlife Area would remain open. This level of impact would be beneficial, consistent with the Programmatic EA.

8. **Land Use and Recreation**

The effects of the proposed Project in and along Murderers Creek 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 effects on recreation from the proposed Project. Land uses would not change, and public recreational opportunities at this location would result in short-term displacement of recreational users from the immediate project area. There are other recreational opportunities in the areas to serve as alternatives during the displacement. 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 impacts to land use and recreational opportunities. These impacts would be adverse in the short-term, but overall beneficial as recreational opportunities return.

9. **Visual Resources**

The effects of the proposed Project in and along Murderers Creek would be consistent with the analysis in Section 3.3.9 of the Programmatic EA ("Visual Resources"). Section 3.3.9.3 of the Programmatic EA ("Effects Conclusion for the Proposed Action on Visual Resources") describes low impacts to visual resources.

The proposed restoration actions are immediately adjacent to Murderers Creek Access Road, an unimproved road, and most activities would be readily visible to travelers along this route. As described in Section 3.3.9.2 of the Programmatic EA ("Environmental Consequences for Visual Resources"), Project-related construction would accordingly result in some short-term visual impacts, including some disturbance that detracts from the view and the visible presence of newly planted grasses, forbs, and shrubs. However, these visual impacts would last for only a few weeks during staging, construction, and replanting. When construction is complete, the river would gradually appear less disturbed as the newly planted seeded grasses and forbs grow. Within a year or two, the matured vegetation would provide the same natural scenery that can be seen elsewhere along this road. This level of impact would be beneficial, as stated in the Programmatic EA.

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

The effects of the proposed Project in and along Murderers Creek would be 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 ("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 is about 13 miles from Dayville, Oregon, which is too far for noise, dust, or exhaust from construction activities to affect the residents during the few weeks of construction activities; and no long-term source of emissions or noise would be created. Impacts to safety would come from workers sharing the roads when travelling to and from work sites; and the visual distraction that construction work close to the road might pose to passing motorists. This Project has no potential to impact public safety infrastructure (e.g., roads, telecommunications equipment, etc.) and some potential to burden emergency services (e.g., police, fire, and emergency medical services), which would be ameliorated through the use of mitigation measures, such as flagging, preconstruction safety identification and proper safety gear. This level of impact would be adverse in the short term, but beneficial in the long-term, consistent with the Programmatic EA.

11. **Cultural Resources**

The effects of this Project 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 ("Effects Conclusion for the Proposed Action on Cultural Resources") describes low impacts to cultural resources, with any potential effects being amenable to resolution through the Section 106 consultation process under the National Historic Preservation Act.

The Bureau of Reclamation initiated consultation with the Confederated Tribes of the Warm Springs of Oregon, Confederated Tribes of the Umatilla Indian Reservation, Burns Paiute Tribe, Oregon State Historic Preservation Office, and ODFW on August 15, 2018. On January 22, 2022, BPA transitioned to the role of lead Federal agency for Section 106 compliance for this undertaking and submitted consultation to the above listed parties. BPA submitted a determination of no adverse effect to historic

properties to the consulting parties on February 14, 2023, starting the 30-day comment review period. The 30-day comment review period ended March 16, 2023, and no comments were received.

12. **Socioeconomics and Environmental Justice**

The effects of this restoration Project along Murderers Creek would be consistent with the analysis in Section 3.3.13 of the Programmatic EA ("Socioeconomics and Environmental Justice"). Section 3.3.13.3 of the Programmatic EA ("Effects Conclusion for the Proposed Action on Socioeconomics and Environmental Justice") describes low socioeconomic and environmental justice impacts.

Consistent with the effects described in the Programmatic EA, the Project would not generate a requirement for additional permanent employees nor would it require individuals to leave the local area, or relocate to 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 it. 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 beneficial in the long-term, consistent with the Programmatic EA.

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 impact environmental justice populations elsewhere.

13. **Climate Change**

The effects of this Project in and along Murderers Creek are consistent with the analysis in Section 3.3.14 of the Programmatic EA ("Climate Change"). Section 3.3.14.3 of the Programmatic EA ("Effects Conclusion for the Proposed Action on Climate Change") describes low impacts on climate change.

Due to the short duration of construction and the relatively small number of construction vehicles and other gas-powered equipment, 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 beneficial.

Findings

BPA finds that the types of actions and the potential impacts related to the proposed Murderers Creek Habitat Improvement 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 and 40 CFR §1502.9. Therefore, no further NEPA analysis or documentation is required.

/s/ Israel Duran
Israel Duran
Environmental Protection Specialist

Concur:

/s/ Sarah T. Biegel Date: *May 23, 2023*
Sarah T. Biegel
NEPA Compliance Officer