

**Supplement Analysis**  
for the  
**Columbia River Basin Tributary Habitat Restoration**  
(DOE/EA-2126/SA-24)

**Cottonwood Creek Cole-Engle Diversion Project**  
**BPA project number 2007-397-00**  
**BPA contract number 89673**

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) (Tributary Habitat EA). The Tributary Habitat EA analyzed the potential environmental impacts of implementing habitat restoration actions in the Columbia River Basin and its tributaries.

Consistent with the Tributary Habitat EA, this Supplement Analysis (SA) analyzes the proposed Cottonwood Creek Cole-Engle Diversion Project (project) that would enhance in-stream conditions and fish passage for Endangered Species Act (ESA)-listed threatened Middle Columbia River steelhead (*Oncorhynchus mykiss*) in Cottonwood Creek, a tributary of the North Fork John Day River in Grant County, Oregon.

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 Tributary Habitat 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 Activities**

Bonneville proposes to fund the Confederated Tribes of the Warm Springs (CTWS) to remove an existing diversion structure consisting of sheet piling check boards and to create an improved irrigation diversion consisting of an engineered riffle along with headcut and grade stabilization to ensure fish passage for all life stages in Cottonwood Creek. The project would be done in partnership with the Monument Soil and Water Conservation District (MSWCD).

This project is located in Grant County, Oregon approximately 15 miles south of the town of Monument. Cottonwood Creek is a major tributary of the North Fork John Day River that provides critical spawning and rearing habitat to Middle Columbia River steelhead (ESA-listed, Threatened) and other aquatic species. In the project area, Cottonwood Creek has a terrace floodplain upstream of the diversion on

river left and access to the floodplain on river right. There is established riparian vegetation present and signs of beaver activity throughout the project area, contributing to wood and vegetative debris recruitment. The project area extends approximately 600 feet downstream of the existing diversion. The banks of Cottonwood Creek and associated riparian vegetation in the project area were impacted during construction of the diversion in 2010; however, that project included riparian planting. The plantings have become established and there is healthy riparian vegetation along the project reach. Vegetation in the surrounding uplands is scrub/shrub with sparse western Juniper trees as is typical of semi-arid central Oregon locations. Land use in the area surrounding the project is ranching and irrigated agriculture downstream of the diversion. The existing diversion structure was constructed in 2010; however, water rights associated with the diversion are certificated from 1912. There have likely been impacts from irrigation diversions along this reach for over a century. Human alterations within the Cottonwood Creek area have included valley bottom development for homesteads and livestock farming.

Streambed erosion is occurring at an irrigation point of diversion at about stream mile 12.8. The existing diversion structure consists of channel spanning sheet pilings, a fish passage structure and headgate that diverts water into an irrigation pipeline with an Oregon Department of Fish and Wildlife (ODFW) fish screen. The landowners currently install wooden check boards in the creek at the existing structure to provide water for irrigation during low flow. When the boards are removed and there is low flow, flow plunges over the metal sill creating a jump height greater than 6 inches, which becomes a barrier for juvenile fish. Additionally, the fish passage ladder is currently located immediately adjacent to the headgate which presents fish passage issues. Juvenile fish swimming through the fish passage structure are being pulled into the headgate and through the fish screen bypass back downstream, only to navigate back through the diversion's fish passage structure again and then pulled back into the headgate, thus creating an unintended entrainment loop. In addition to the fish passage issues associated with the diversion structure, record flows have exposed more than 3 feet of the 4-foot-deep sheet pilings, threatening the long-term integrity of the structure and exacerbating fish passage conditions.

The project has been designed as a solution for the erosion at the existing diversion structure that provides fish passage over the structure at all flows and eliminates the need to conduct future in-stream maintenance on the diversion. The project would replace the existing check board diversion structure and fish passage structure with an engineered riffle extending approximately 140 feet downstream from the diversion. In addition, four boulder weirs would be constructed. The proposed improvements would raise the streambed elevation to the height of the existing diversion to eliminate the need for wooden check boards and the fish passage structure. Large-scale roughness boulders would also be placed upstream of the diversion to help dissipate stream energy before reaching the proposed engineered riffle. The improvements would allow the stream to function naturally while continuing to provide the prescribed amount of water to the landowners for irrigation while providing fish passage.

Project work would occur both in-water and in riparian areas, staging and access would take place away from uplands. Work within Cottonwood Creek would include channel regrading and the placement of stream simulation material and rock riffles. Work within riparian areas would consist of embankment work to key in rock for the boulder weirs, as well as work to remove the existing diversion structure. A total area of up to 2.4 acres would be disturbed during construction. Disturbed riparian areas would be replanted with native woody species after construction.

The work would be carried out during the ODFW in-water work window for Cottonwood Creek, which is generally July 15 through August 31, but which has been extended by ODFW until September 30 for this project. A stream bypass would be installed, and work would occur in isolation from flowing water to minimize impacts to aquatic life and water quality. In-water work area isolation and fish salvage operations would follow the ordering, methodologies, and conservation measures specified in the BPA Habitat Improvement Program (HIP) IV Biological Opinion. Sediment and erosion control best management practices (BMPs) would be implemented during all phases of construction. Fish salvage would be performed, and block nets would be installed to isolate fish from the work area as needed. Because of the timing of the work, no direct effects to salmonids as a result of construction.

The work would involve the use of heavy machinery to construct the riffle and remove the diversion infrastructure. Existing access paths would be utilized; no new access roads would be constructed. Staging of rock and other project materials would be in uplands located between two access roads directly northeast of the project area.

The project is consistent with the actions considered in the Tributary Habitat EA categories of actions, which represent well-established aquatic and terrestrial restoration techniques that have been applied throughout the Basin and have been demonstrated to be effective in the support and restoration of aquatic and upland species and habitats. Specifically, the project actions were considered in Section 2.1.1.2, Consolidate or Replace Existing Irrigation Diversions (Tributary Habitat EA Category 1).

Funding the proposed activities fulfills commitments under the 2020 National Marine Fisheries Service Columbia River System Biological Opinion (2020 NMFS CRS BiOp). These proposed activities would support conservation of ESA-listed species considered in the 2020 U.S. Fish and Wildlife Service Columbia River System BiOp (2020 FWS CRS BiOp). These actions also support Bonneville's commitments to the Confederate Tribes of the Warm Springs Reservation under the 2020 Columbia River Fish Accord Extension agreement, while also supporting ongoing efforts to mitigate for effects of the FCRPS 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 project activities would disturb the substrate of the stream in order to regrade the streambed and construct the new engineered riffle and boulder weirs. The project would also result in damage to riparian vegetation and soils, temporary construction noise, and vehicle emissions; and would temporarily increase vehicle traffic and human activity in the project area. The typical environmental impacts associated with the Columbia River Basin Tributary Habitat EA are described in Chapter 3 of the Tributary Habitat EA, and are incorporated by reference and summarized in this document.

Below is a description of the potential site-specific effects of the Cottonwood Creek Cole-Engle Diversion Project and an assessment of whether these effects are consistent with those described in the Tributary Habitat EA. This project's actions are designed to improve fish passage for the long term, so the adverse effects to the streambed, soil and vegetation disturbance and mechanical activities, as detailed below, would be short-term and temporary.

## **1. Fish and Aquatic Species**

Cottonwood Creek is one of the most vital and productive watersheds in the North Fork John Day Basin for summer steelhead. It provides key migration, spawning, and rearing habitat. Cottonwood Creek is designated as critical habitat for Middle Columbia River steelhead, which are listed under the ESA. Redband trout are also present in Cottonwood Creek, which is not listed by the State of Oregon as threatened or endangered.

Temporary detrimental effects to fish and aquatic species would include short-term increases in noise and turbidity due to construction. Implementation of the project would result in long-term beneficial effects to fish and aquatic species by improving fish passage and removing structures that may cause entrapment. Ensuring fish have adequate access to habitat upstream of the Cole-Engle Diversion would be especially beneficial given the extensive restoration work conducted in the upper reaches by the Confederated Tribes of the Warm Springs Reservation and Grant Soil and Water Conservation District. By improving fish passage and habitat in the lower reaches of Cottonwood Creek, this project would allow steelhead to benefit from all restoration work conducted throughout the extent of the Fox/Cottonwood Creek watershed. These beneficial effects are consistent with the analysis in the Programmatic EA found in Section 3.3.1.2.2, Effects to Fish and Aquatic Organisms unique to the categories of action. Overall, project impacts would be consistent with Programmatic EA, Section 3.3.1.3, Effects Conclusion for the Proposed Action on Fish and Aquatic Species, which describes low impacts to fish and aquatic species after considering moderate short-term adverse effects from construction and beneficial long-term effects.

Consultation on potential effects of the project on ESA-listed species was completed under Bonneville's programmatic Fish and Wildlife Habitat Improvement Program (HIP4) biological opinion. HIP4 conservation measures would be applied during project implementation. The mitigation measures associated with the ESA consultations would be implemented to limit the temporary negative impacts, which are consistent with those evaluated in the Tributary Habitat EA.

Overall, short term impacts to fish and aquatic species would be low, consistent with the analysis in the Programmatic EA, Section 3.3.1.2.1, Short-Term Effects to Fish and Aquatic Species from Construction Activities. These effects include disturbance, injury, or inadvertent crushing as a result of equipment use.

## **2. Water Resources**

The project would regrade and stabilize the channel of Cottonwood Creek and would utilize boulder weirs and the addition of stream simulation materials to the channel bed to prevent percolation of streamwater into the ground and provide beneficial substrate. Water rights for downstream users would be maintained by the installation of the improved diversion structure. Construction activities would be the primary factor affecting water quality, with sedimentation, turbidity, and temperature being the primary variables of concern.

Short-term inputs of sediment would result from removal of the existing sheet pilings, stream regrading, the placement of streambed simulation material and boulders, and the installation of boulder weirs. The in-stream work area would be dewatered during construction. Proper design of channel capacity, form, gradient, and grade control structures, and the establishment of vegetation would limit the amount of erosion and turbidity created. The probability of potential fuel and fluid leaks from heavy equipment is low, and the contractor performing the work would be required to have a spill response kit on-site.

Impacts to water resources are consistent with the Tributary Habitat EA analysis in Section 3.3.2, Effects to Resources by Resource Type – Water Resources. The analysis concludes that overall, tributary restoration actions would create temporary, localized sediment inputs and increases in turbidity from work in and along Cottonwood Creek. Temporary disturbance to riparian vegetation from the installation of the boulder weirs could cause small increases in water temperature in the short term; however, woody native species would be replanted following construction (see Vegetation below). These are short-term, temporary effects that would also be lessened by the application of mitigation measures such as phased rewatering and replanting.

When the short-term, temporary effects are considered in the context of the long-term benefits of the project to fish passage, the overall effects on water quality would be low and consistent with those evaluated in the Tributary Habitat EA.

### 3. Vegetation

The project area was planted with native woody species after disturbance associated with the installation of the existing irrigation diversion. Previously planted riparian vegetation may be disturbed by the proposed project, and it may take several growing seasons for desired habitat conditions to be restored after replanting. Existing access paths would be used and no new access roads would be constructed. Staging would occur in a barren section of uplands that is essentially an island surrounded by vehicle access paths. Due to the use of previously-disturbed staging area and existing access roads, there would be little disturbance to upland soils or vegetation as a result of the project. For those riparian areas disturbed, they would be revegetated after construction, including containerized plant installation consisting of 93 red osier dogwood (*Cornus sericea*), 93 alder (*Alnus spp.*), and 93 willow (*Salix spp.*). Vegetation recovery would likely take several growing seasons to reestablish after planting.

The project area does not contain habitat for ESA-listed plant species (USFWS Information for Planning and Consultation (IPaC), 2022). There were no state-listed plant species identified within the project area. The Oregon Data Portal shows that two species of Oregon state-listed threatened vascular plants may be present in Grant County: *Astragalus diaphanous* (South Fork John Day milkvetch) and *Thelypodium eucosmum*<sup>1</sup> (Arrow-leaf thelypody). *Astragalus diaphanous* occurs on barren ash in stream bottom habitat of the South Fork of the John Day River. The project would not take place within this habitat or effect it, therefore the project would have no effect on *Astragalus diaphanous*. *Thelypodium eucosmum* is endemic to tributaries of the John Day River occurs with western junipers along streambanks, seasonally-moist areas, seeps, and under isolated juniper trees away from obvious moisture. This species has not been identified within the project area, and the history of heavy cattle grazing at the site makes it very unlikely that any populations would remain in the area.

Impacts to vegetation are consistent with the Tributary Habitat EA analysis Section 3.3.3, Effects to Resources by Resource Type – Vegetation and Section 3.1, Effects Common to Construction Activities. The analysis concludes that although the effects on vegetation from construction actions may be moderate in the short term, the long-term beneficial effects of increased riparian habitats and restored or improved vegetative conditions would be high, thus when the short- and long-term effects are considered together, the overall effects of this project would be moderate and would be consistent with those evaluated in the Tributary Habitat EA.

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<sup>1</sup> retrieved from <https://data.oregon.gov/dataset/Oregon-listed-plants-by-county-map-view/>, June 2022

#### 4. Wetlands and Floodplains

Impacts to wetlands and floodplains are consistent with the Tributary Habitat EA analysis in Section 3.2.1, Effects Specific to Category 1 - Effects of Fish Passage Restoration and Section 3.3.4, Effects to Resources by Resource Type – Wetlands and Floodplains. No wetlands have been identified in the project area, and no wetlands would be affected by project activities. The project would not alter flow regimes in such a way as to affect wetlands downstream of the project. The overall effects of this project on wetlands would be less than the low impact identified in the Tributary Habitat EA.

#### 5. Wildlife

The project area has the potential to contain habitat for ESA-listed gray wolf (*Canis lupus*) (USFWS Information for Planning and Consultation (IPaC), 2022). Gray wolves are highly mobile and would be able to easily avoid the project area during implementation. The project would have no effect on gray wolves, because they are very unlikely to be affected by the project or located near the project area. There are no wildlife species listed by the State of Oregon as threatened or endangered that may occur within the project area.

Wildlife may be disturbed by sound, movement, and shadows caused by human presence. Larger, more mobile species such as birds and small mammals may be temporarily displaced from their home territories. This would be sustainable for the short term if individuals could return to their former habitats once the human disturbance had passed. Other types of disturbance can affect wildlife apart from the restoration site. These include noise, turbidity, smells, etc., which can temporarily disrupt wildlife behavior and displace their habitats.

Vegetation removal could cause temporary displacement as it may take several growing seasons for desired habitat conditions to be restored after replanting. Riparian vegetation disturbance could 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.

Impacts to wildlife are consistent with the Tributary Habitat EA analysis in in Section 3.2.1, Effects Specific to Category 1 - Effects of Fish Passage Restoration and Section 3.3.5, Effects to Resources by Resource Type – Wildlife. The analysis concludes that the short-term effects on small 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 improved fish passage resulting from the project. The overall effects of this project would be low and consistent with those evaluated in the Tributary Habitat EA.

#### 6. Geology and Soils

The project would utilize existing roads and access paths, and therefore effects to upland soils would be negligible. Staging of heavy equipment and materials would occur in uplands in a highly altered area between two access paths. Staging may result in minor disturbance to the uppermost soil layers; however, no ground disturbance is proposed and erosion mitigation measures and BMP's would be followed. The project would result in the regrading and of the streambed within Cottonwood Creek; however, this would not result in effects to soils adjacent to the Creek or the underlying geology. Soils along the banks of the Creek would be disturbed by the embankment of the boulder weirs and the

installation of containerized plantings post-construction. Short-term impacts would include a temporary increase in elevated suspended sediments in Cottonwood Creek. The Cottonwood Creek floodplain would be stabilized by the native plantings following their establishment and growth.

Impacts to geology and soils from the project would be consistent with the Tributary Habitat EA analysis in in Section 3.2.1, Effects Specific to Category 1 - Effects of Fish Passage Restoration and Section 3.3.6, Effects to Resources by Resource Type – Geology and Soils..

## **7. Transportation**

The project site would be reached via Courtrock-to-Monument Road, which runs parallel to Cottonwood Creek east of the project area. From there, the site would be accessed using existing access paths across which equipment would be driven. The project would not modify the channel structure and hydraulic characteristics of Cottonwood Creek or the North Fork John Day River in such a way that changed flow conditions would affect downstream road prisms, culverts, or bridges. These impacts were considered in the project Basis of Design Report.<sup>2</sup> No actions are proposed that would alter, relocate, or decommission existing roads, or create new roads. During construction, there would be a minor increase in traffic from construction vehicles entering and leaving the project site. While vehicles transporting workers and equipment to the project site would share local roads with other traffic, there would be no other temporary or permanent effects to existing roads, such as closures or relocations.

Impacts to transportation are consistent with the Tributary Habitat EA analysis in in Section 3.2.1, Effects Specific to Category 1 - Effects of Fish Passage Restoration and Section 3.3.7, Effects to Resources by Resource Type – Transportation. The analysis concludes that, although project actions may impact roads for a short period, and some roads may be removed from the system, the overall effect on transportation would be low. The overall effects of this project would be consistent with those evaluated in the Tributary Habitat EA.

## **8. Land Use and Recreation**

Impacts to land use and recreation are consistent with the Tributary Habitat EA analysis in Section 3.2.1, Effects Specific to Category 1 - Reestablishing and Improving Fish Passage and Section 3.3.8, Effects to Resources by Resource Type – Land Use and Recreation. The analysis concludes that land use practices underlying project sites would not be changed for most projects. This specific project would not result in changes to land use or recreation opportunities. The site is on private land that cannot be accessed by the public for recreation. The landowners would be able to continue current land uses ongoing at the site. The overall effects of this project on land uses and recreation are expected to be low and would be consistent with those evaluated in the Tributary Habitat EA.

## **9. Visual Resources**

The project area is adjacent to Courtrock-to-Monument Road to the east and is visible to the road. The project is small in area and would not alter the visual character of the surrounding sparsely populated agricultural areas. The project site would be revegetated with native woody riparian vegetation, resulting in a more natural-looking environment.

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<sup>2</sup> Cottonwood Creek Cole-Engle Fish Passage Improvements Basis of Design Report, Anderson Perry & Associates; October 29, 2020.

Impacts to visual resources are consistent with the Tributary Habitat EA analysis in Section 3.2.1, Effects Specific to Category 1 - Reestablishing and Improving Fish Passage and 3.3.9, Effects to Resources by Resource Type – Visual Resources. The analysis concludes that the effects on scenic values from the proposed action would be low, but site-specific evaluations for each project would evaluate the landscape character and assess whether an action would appear compatible with existing features, or if it would contrast noticeably with the setting and appear out of place. This project would not change the surrounding landscape character, and the proposed engineered riffle would be more natural in appearance than the existing sheet pilings. The overall effects of this project on visual resources are expected to be low and would be consistent with those evaluated in the Tributary Habitat EA.

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

Air Quality. Construction equipment would emit some carbon monoxide, nitrogen oxide, unburned hydrocarbons, and particulates from tailpipe emissions and cause dust during ground disturbance and travel along unpaved access roads. These could affect air quality locally for short durations. Impacts from site-specific restoration actions would primarily occur from construction and would be temporary and localized in nature and would not have long-term impacts on air quality. Implementation of this project is not expected to generate long-term or short-term violations of state air quality standards.

Noise. Noise can be a concern when actions are located near sensitive receptor sites, such as schools or hospitals. The project, however, is located far from schools or hospitals, and these sensitive receptor sites would not be an issue. The project would involve the use of heavy equipment for short periods. The ambient noise level for the project area is estimated to be between 45-50 dBA (A-weighted decibel scale). Construction activities would elevate that level to between 80-100 dBA at the construction site. Such noise would come from construction, transportation, and site rehabilitation activities and the associated equipment (noted in the project description). High noise levels would not be constant, and while construction actions may produce extended periods of excessive noise, these would be hundreds of feet from the nearest residence. Over the long term, people living, working, or recreating near restoration sites would likely experience a decrease in human-created noise coming from diversion maintenance activities and an increase in natural sounds associated with a more natural stream habitat.

Public Health and Safety. The project would not hinder traffic flow or the resulting response time of emergency vehicles, as materials and equipment would be stored in the project area off of any roads. The short-term construction and restoration activities would not be expected to overburden the existing health and safety infrastructure near the project site. The potential health and safety risks to workers and the public during construction would not be greater than a standard construction project, and therefore the short-term effects of the action to health and safety would be low. Adequate signage and other routine safeguards for worker and public safety would be applied to minimize these effects.

Impacts to air quality, noise, and public health and safety are consistent with the Tributary Habitat EA analysis in Sections 3.2.1 (Effects Specific to Category 1 - Reestablishing and Improving Fish Passage) and 3.3.10 (Effects to Resources by Resource Type – Air Quality, Noise, and Public Health and Safety). The analysis concludes that the effects of noise from the proposed action on the human environment would be low and that the effects of the restoration program on air quality, public health, and safety would be low. The overall effects of this project would be consistent with those evaluated in the Tributary Habitat EA.



## **11. Cultural Resources**

Bonneville initiated consultation for Section 106 of the National Historic Preservation Act (NHPA) on October 22, 2020, (Bonneville Cultural Resources Project Number OR 2019 124) seeking comment from the consulting parties on a determination of “no effect to historic properties.” The consultation letter was sent to the Confederated Tribes of the Warm Springs Reservation, the Confederated Tribes of the Umatilla Indian Reservation, the Burns Paiute Tribes, and the Oregon State Historic Preservation Office (SHPO).

No response was received from the Confederated Tribes of the Warm Springs Reservation, the Confederated Tribes of the Umatilla Indian Reservation, the Burns Paiute Tribes, or the Oregon SHPO.

Prior to implementation, a professional archaeologist would buffer and flag the site boundaries for avoidance. Signs would be placed designating those areas as a “No work area.” An archaeological monitor would be present during project implementation to ensure the avoidance flagging is maintained, and to observe ground disturbing activities. 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.

Impacts to cultural resources are consistent with the Tributary Habitat EA analysis in Sections 3.2.1 (Effects Specific to Category 1 - Reestablishing and Improving Fish Passage) and 3.3.11 (Effects to Resources by Resource Type – Cultural Resources). Therefore, the implementation of the proposed project would result in no adverse effect to historic properties and effects to cultural resources would be low. These findings are consistent with the analysis in the Programmatic EA, Section 3.3.11.2.

## **12. Socioeconomics and Environmental Justice**

The project would result in small, temporary, beneficial impacts to socioeconomics by providing jobs for construction workers. It would not require individuals to leave the local area, or relocate within it. There would therefore 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. Implementation of the project would likely create short-term beneficial economic effects for local businesses in smaller communities through purchases of food, fuel, lodging, and materials associated with construction and restoration actions. The project would not displace residents or degrade residential suitability; nor would it cause changes to the tax base.

Impacts to socioeconomics and environmental justice are consistent with the Tributary Habitat EA analysis Section 3.2.1, Effects Specific to Category 1 - Reestablishing and Improving Fish Passage and Section 3.3.13, Effects to Resources by Resource Type – Socioeconomics and Environmental Justice. The analysis concludes that effects to the socioeconomics of the Basin as a whole with the implementation of the proposed action would be low due to the small scale and dispersed nature of the projects. Overall no permanent adverse effects to environmental justice populations would be expected. The overall effects of this project would be consistent with those evaluated in the Tributary Habitat EA.

## **13. Climate Change**

Greenhouse gas emissions associated with the project (primarily carbon dioxide, methane, and nitrous oxide) would be localized and temporary. These short-term emissions would be generated by construction equipment, off-road vehicles, on-road vehicles (including worker commuting and material

delivery), and dust from ground-disturbing activities. Given the short construction duration, low number of vehicles and equipment, and estimate of emissions well below EPA's reporting threshold of 25,000 metric tons of carbon dioxide equivalent per year during construction, the impact from greenhouse gas emissions would be low and therefore, the potential for the project to accelerate climate change would be low. The project would improve fish passage and potentially allow access to more cold-water refugia upstream, thereby ameliorating the effects of warming waters on aquatic species.

Impacts to climate change are consistent with the Tributary Habitat EA analysis in Section 3.2.1, Effects Specific to Category 1 - Reestablishing and Improving Fish Passage and Section 3.3.14, Effects to Resources by Resource Type – Climate Change. The overall effects of the proposed action on climate change would be low. The overall effects of this project would be consistent with those evaluated in the Tributary Habitat EA.

### **Findings**

The types of actions and the potential impacts related to the proposed project were examined, reviewed, and consulted upon and are similar to those analyzed in the Columbia River Basin Tributary Habitat Restoration Programmatic EA (DOE/EA-2126) and FONSI. There are no substantial changes in the proposed action and no significant new circumstances or information relevant to environmental concerns bearing on the proposed action or its impacts within the meaning of 10 CFR § 1021.314 and 40 CFR §1502.9(d). Therefore, no further NEPA analysis or documentation is required.

/s/ Thomas Sentner

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Concur:

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