

**Supplement Analysis**  
for the  
**Columbia River Basin Tributary Habitat Restoration**  
(DOE/EA-2126/SA-08)

**Upper Burns and Angle Point Stream Restoration**  
**BPA project number 2009-003-00**  
**BPA contract number 56662 REL 226**

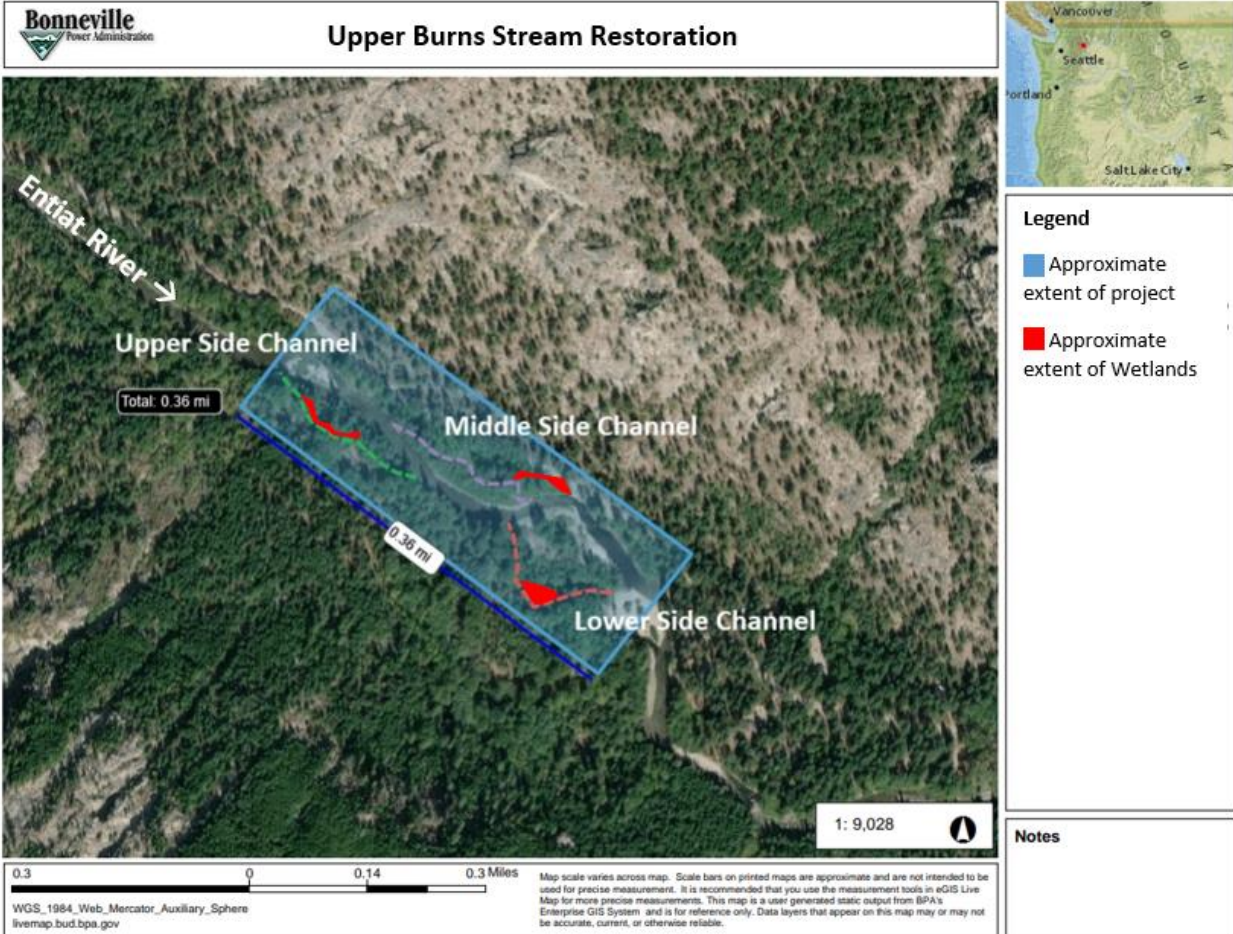
Bonneville Power Administration  
Department of Energy



**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 Upper Burns and Angle Point Stream Restoration Project (project) that would enhance in-stream and floodplain habitat conditions for Endangered Species Act (ESA)-listed endangered Upper Columbia spring Chinook salmon (*Oncorhynchus tshawytscha*), bull trout (*Salvelinus confluentus*), and threatened summer steelhead (*Oncorhynchus mykiss*) at river mile 25.8 of the Entiat River near the confluence with Burns Creek, approximately 25 miles north/northwest of Entiat, Washington in the Okanogan-Wenatchee National Forest (OWNF) on land managed by the US Forest Service (USFS) Entiat Ranger District in Chelan County, Washington. 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).



### Proposed Action

The project area sits at an elevation of about 1,800 feet and is characterized by riparian vegetation consisting of a mixture of deciduous trees and shrubs, including black cottonwood (*Populus trichocarpa*), alder (*Alnus incana*), aspen (*Populus tremuloides*), red osier dogwood (*Cornus sericea*), Wood's rose (*Rosa woodsii*), water birch (*Betula occidentalis*), Pacific willow (*Salix lasiandra*), coyote willow (*Salix exigua*), and common snowberry (*Symphoricarpos albus*) interspersed with mature western red cedar (*Thuja plicata*), ponderosa pine (*Pinus ponderosa*) and Douglas-fir (*Pseudotsuga menzeisii*). There are existing wetland complexes present in the project area, totaling 0.29 acres (denoted on the figure above). All property within the project area is owned by the USFS in the OWNF.

The proposed project would create increased rearing, holding, and overwintering habitat for spring Chinook salmon, steelhead, and other migratory and resident fish species including bull trout. Construction work would focus on creating three side channels and would include excavation of the floodplain, placement of large wood structures, and revegetation of the site. Excavated material for the upper and lower channels would be stored on site, but would be contoured and revegetated to blend in with the natural environment. Material excavated for the middle channel would be taken off-site and stored at an approved upland location.

Bonneville proposes to fund the Yakama Nation Fisheries (YN) to undertake the project, which would involve clearing and grubbing about 5.75 acres and excavating approximately 4,700 cubic yards (CY) to

create three side channels (upper, middle, and lower as depicted on the figure above) and salvaging approximately 930 CY of cobble from the mainstem Entiat River and lower side channel. Approximately 1,750 CY of additional excavation and coarse substrate placement would occur within the side channels. In addition, the project would involve placement of approximately 460 logs and 30 trees anticipated to be salvaged during excavation. Equipment, logs, and other temporary construction materials would be staged within designated areas. Spill kits would be onsite throughout all of the work areas. Stakes and/or flagging would be installed to delineate wetlands, equipment entry and exit points, staging and stockpile areas, and project limits.

The project would improve habitat for ESA-listed summer steelhead, bull trout, and spring Chinook salmon, as well as other fish and wildlife. The majority of the work would be implemented between July 16, 2021, and August 09, 2021. 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:

1. Reestablishing and Improving Fish Passage
2. Improving River, Stream, Floodplain, and Wetland Habitat
3. Invasive Plant Control and Vegetation Management
4. Piling Removal
5. Road and Trail Erosion Control, Maintenance, Decommissioning, and Construction
6. In-Channel Nutrient Enhancement
7. Irrigation, Water Delivery, and Water Use Action
8. Fish, Hydrologic, Wildlife, and Geomorphic Surveys
9. Riparian and Upland Habitat Improvements and Structures
10. Artificial Pond Development and Operation

The project fulfills commitments under the 2020 National Marine Fisheries Service Columbia River System Biological Opinion. These actions would support conservation of ESA-listed species considered in the 2020 ESA consultation with the US Fish and Wildlife Service (USFWS) on the operation and maintenance of the Columbia River System.

The project would include the following elements, with the corresponding Tributary Habitat EA category of action noted next to each element.

#### **Side Channel Construction** (Tributary Habitat EA Category 2)

This project would create three side channels along the Entiat River and would include excavation of the floodplain, placement of large wood structures, and revegetation of the site. Any material excavated during construction that needs to be stored on site would be contoured and revegetated to blend in with the natural environment. This project would restore wetlands, riparian areas, and streams that have been altered by previous land use and management practice.

Prior to earthwork activities, erosion control devices would be installed throughout the project areas. Best Management Practices (BMPs) to be employed would include: temporary cofferdams, silt curtains, silt fences, and straw wattles. A temporary sandbag cofferdam or sheet pile driven into the ground with a vibratory pile driver would be installed at the downstream and upstream ends of the side channel work area to isolate the construction activities; these cofferdams would comprise an estimated 1,100 linear feet.

Approximately 3,500 cubic yards of excavated material for the lower and upper side channels would be placed in the on-site soil disposal area (0.5 acre), which would be blended into the surrounding landscape following project completion. The excavated material for the middle side channel (approximately 3,000 cubic yards) would be hauled to the Preston Pit, two miles away. Any material not used in restoration and not native to the floodplain would be removed to a location outside of the 100-year floodplain for disposal. To the extent practicable, hauling excavated material across the temporary bridge would be avoided.

Natural materials used during project construction, such as large wood, slash, gravel, and topsoil, would be staged within the 100-year floodplain at predetermined stockpile areas within the project boundaries. Construction equipment and vehicle storage, fueling, servicing, and hazardous material storage would be located 150 feet or more from a natural water body or wetland, or on an adjacent established road area.

### **Large Wood Installation in Side Channel Alignment** (Tributary Habitat EA Category 2)

Riffle pools and log structures within the excavated side channel would be composed of logs installed horizontally into the bank with roots extending into the pool and slash placed loosely against the bank. The pool would be excavated into the bank. Trees and shrubs within clearing limits would be salvaged and used as logs and slash in habitat structures. Haul trucks would be used for transporting wood from the staging areas to installation sites and for installing all mainstem large wood structures.

Approximately 46 large wood structures would be placed in the side channels and at the Entiat River inlet to provide complex off-channel habitat for the full range of flow conditions.

### **Riparian Revegetation** (Tributary Habitat EA Category 9)

Extensive native woody and herbaceous riparian and transitional vegetation such as black cottonwood (*Populus trichocarpa*), coyote willow (*Salix exigua*), and small fruited bulrush (*Scirpus microcarpus*) would be planted throughout the project area after site excavation activities to create extensive new riparian/wetland habitats along the creek's periphery, protect against bank scouring, provide for long-term riparian resources, augment future large woody material recruitment, and provide shade to the Entiat River. Herbaceous wetland plugs would also be installed along stream margins and in backwater alcoves in areas of appropriate habitat.

### **Environmental Effects**

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 impacts of the Upper Burns and Angle Point Stream Restoration Project and an assessment of whether these impacts are consistent with those described in the Tributary Habitat EA.

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

The project would benefit ESA-listed endangered spring Chinook salmon and threatened summer steelhead by creating side channels to increase quantity and quality of rearing habitat for juveniles, as well as provide complex off-channel habitat for all fish species during all flow conditions. Bull trout would also benefit from the project, which would provide shelter and protection by increasing habitat complexity. The Entiat River is designated Final Critical Habitat for bull trout, steelhead, and Chinook

salmon. The project area is within the National Marine Fisheries Service's (NMFS) Upper Columbia sub-domain, a subset of the Interior Columbia Recovery Domain for anadromous ESA-listed salmon and steelhead in the Northwest Region. The Entiat River is considered essential fish habitat (EFH) under the Magnuson-Stevens Fishery Conservation and Management Act because it provides habitat for Chinook salmon. Work area isolation would be used in areas with water; no direct effects to salmonids as a result of construction are anticipated. Fish salvage, which could cause a direct effect to fish, would be performed prior to establishing the temporary cofferdams for the side channel excavation.

Bonneville designated the USFS as the lead agency for Section 7 of the ESA. The project would conform to the NMFS-issued ESA Section 7 Programmatic Consultation Conference and Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for Reinitiation of Aquatic Restoration Activities in States of Oregon and Washington (USDC NMFS 2013) and the USFWS-issued ESA Section 7 Consultation Programmatic Biological Opinion for Aquatic Restoration Activities in the States of Oregon, Washington and portions of California, Idaho and Nevada (USDI FWS 2013). These two Biological Opinions are collectively known as "ARBO II." The effects to threatened and endangered species and the associated designated critical habitat were documented as part of the ARBO II consultation for stream restoration projects. The project would have short-term negative impacts to steelhead, Chinook salmon, and bull trout; however, the long-term benefits of creating the proposed side channels include not only increased floodplain connectivity, but also periodic delivery of water, nutrients, and sediment to floodplains; flood attenuation and reduced stream energy; and increased stream length and riparian vegetation corridors. In addition, the placement of large wood as part of these actions would increase habitat structure and complexity, thereby creating shade zones, resting pools, spawning grounds, rearing habitat, and refugia, all of which are important components of aquatic species' habitats.

The YN would adhere to the conservation measures required under the ESA consultations with NMFS and the USFWS on the ARBO II to minimize impacts to bull trout, Chinook salmon, and steelhead during project implementation (Activity Categories 2, 3, 4, and 16). These measures include staging vehicles, equipment, and fuels 150 feet or more from any natural water body or wetland; placing sediment barriers prior to construction; minimizing the number and length of stream crossings; and re-stabilizing all disturbed areas. Dewatering of in-channel work areas would occur concurrently with fish rescue. All fish rescue efforts would be performed by a YN/aquatic biologist experienced with the collection and handling of salmonids from construction sites. All fish trapped in residual pools within the project area would be carefully collected by seine and/or dip nets and placed in clean transfer containers with adequate volume of fresh river water. Captured fish would immediately be released downstream of the project area.

Impacts to fish and aquatic species are consistent with the Tributary Habitat EA analysis in Sections 3.2.2 (Effects Specific to Category 2 - Improving River, Stream, Floodplain, and Wetland Habitat), 3.2.9 (Effects Specific to Category 9 – Riparian and Upland Habitat Improvements and Structures), and 3.3.1 (Effects to Resources by Resource Type – Fish and Aquatic Species). The analysis concludes that creating new self-sustaining side channel habitats would not only increase floodplain connectivity, but also provide periodic delivery of water, nutrients, and sediment to floodplains; provide flood attenuation and reduced stream energy; and increase stream length and riparian vegetation corridors. In addition, the placement of large wood and boulders as part of these actions would increase habitat structure and complexity, thereby creating or restoring shade zones, resting pools, spawning grounds, rearing habitat, and refugia, all of which are important components of aquatic species' habitats. Together, these results would produce more functional fish habitat. The long-term beneficial effects include restored riparian

habitats, improved shade and cover for instream aquatic species; and increased food and nutrient inputs into stream courses. Improved shade would also help reduce stream temperatures and maintain those temperatures within desirable ranges for native aquatic species. Short-term adverse effects would be low. These effects include disturbance, injury, or inadvertent crushing as a result of heavy equipment use. The mitigation measures noted above 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.

## **2. Water Resources**

Three categories of water quality are of concern for fish and wildlife habitats: toxic pollutants, temperature, and sedimentation. The project would change stream channels and the conditions of the bed, bank, and floodplain through which water may flow through the Entiat River reach. Connecting new channels with floodplains would not only increase floodplain connectivity, but also provide periodic delivery of water, nutrients, and sediment to floodplains. Construction activities in the short term 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 instream structure placement, opening of side channels, stream reconstruction, and other activities that occur inside the bankfull channel. 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 as the project's stream reach seeks equilibrium with the channel network. Another concern would be the potential fuel and fluid leaks from heavy equipment, but the probability of such an event is low, and the extent of the problem would likely be small given the mitigation measures that would be implemented for these actions.

Impacts to water resources are consistent with the Tributary Habitat EA analysis in Sections 3.2.2 (Effects Specific to Category 2 - Improving River, Stream, Floodplain, and Wetland Habitat), 3.2.9 (Effects Specific to Category 9 – Riparian and Upland Habitat Improvements and Structures), and 3.3.2 (Effects to Resources by Resource Type – Water Resources). The analysis concludes that overall, tributary restoration actions would create short-term, localized, sediment inputs from the actions of heavy equipment in and along streams (though not in amounts greater than what occurs naturally during annual, natural, high flow events); and the removal of riparian vegetation could cause small increases in water temperature in the short term (but would be offset to a degree by shade from new instream structures and deepened streams and pools). These are short-term effects and would also be lessened by the application of mitigation measures such as phased rewatering, existing vegetation protection, minimizing areas to be impacted, and replanting. The long-term effects of these actions, however, would be a decreased potential for unnatural sediment inputs, an increased potential of the floodplain to effectively manage its sediment loads, and a reduction of stream temperatures from stream form, instream habitat structure, and increased riparian vegetative cover. When the short-term, temporary effects are considered in the context of the long-term benefits of the project, the overall effects on water quality would be low and would be consistent with those evaluated in the Tributary Habitat EA.

## **3. Vegetation**

Vegetation in the project area primarily consists of a mixture of riparian deciduous trees and shrubs. There are no known ESA-listed plant species or critical habitat in the project area; therefore, the project would have no effect on federally listed plant species. If threatened or endangered plants were discovered during implementation, they would be protected/avoided.

Revegetation would use native plant species, and the area would be monitored and treated for invasive plants until native vegetation were re-established. BMPs to protect native vegetation include cleaning equipment and materials, including soil, gravel, mulch, and seed, prior to entering USFS land to ensure that they are weed-free; treating and monitoring invasive plants for three years; and replanting if revegetation were not successful. Efforts would be made to avoid disturbing groundwater flow to wetland areas along the hillside to maintain the unique habitat and biodiversity.

Removed vegetation would be incorporated into habitat structures. If excess material required disposal outside of channel work, it would be distributed on the floodplain. The project would avoid the removal of large trees (greater than 11 inches in diameter) of any species, but particularly western cedar (*Thuja plicata*) and Douglas-fir (*Pseudotsuga menziesii*). All trees removed within clearing limits would be removed whole with the rootwad attached and utilized in the project construction. Soil would be removed from the roots of salvaged trees prior to placing them in the waterway. If temporary vegetation removal were required for site access, vegetation would be cut to ground level (not grubbed).

Impacts to vegetation are consistent with the Tributary Habitat EA analysis in Sections 3.2.2 (Effects Specific to Category 2 - Improving River, Stream, Floodplain, and Wetland Habitat), 3.2.9 (Effects Specific to Category 9 – Riparian and Upland Habitat Improvements and Structures), and 3.3.3 (Effects to Resources by Resource Type – Vegetation). The overall effects of this project would be moderate and would be consistent with those evaluated in the Tributary Habitat EA.

#### **4. Wetlands and Floodplains**

Wetland assessments performed by Hamer Environmental in 2019 and 2020 identified three wetland areas within the project footprint. In the short term, construction would affect regulated waters in the project area. A small portion of excavation would occur below the ordinary high water (OHW) line of the Entiat River (approximately 0.66 acres). It is expected that approximately 600 CY (0.29 acres) of jurisdictional wetlands would be impacted from excavating the side channels. The YN would obtain Regional General Permit #8 (US Forest Service Pacific Northwest Region 6 Aquatic Restoration Program Within the State of Washington) as the project would disturb less than 0.5 acre of wetlands. This would satisfy US Army Corps of Engineers Clean Water Act Section 404 requirements and Washington Department of Ecology Section 401 Water Quality Certification requirements.

Portions of the work would occur in water, and shallow groundwater could be encountered throughout excavation areas.

In the long term, the project could potentially increase the acreage of wetlands and improve floodplain conditions. Additionally, wetland quality would improve due to the restoration of natural flow patterns and the replacement of invasive species with native plants. With greater floodplain connectivity at the site, it is anticipated that wetland hydrology would improve, which could expand the wetland area, re-establish native vegetative communities, and control the proliferation of invasive non-native plant species; specifically, reed canarygrass (*Phalaris arundinacea*).

A wetland monitoring plan would be developed to assess the success of wetland conservation measures and the potential for additional restoration work. Stakes and/or flagging would be installed to delineate wetlands prior to project implementation. Storage and refueling areas would be located 150 feet or more from any water body or wetland or on an adjacent, established road area. Equipment would be inspected daily for fluid leaks before leaving the vehicle staging area for operation within 150 feet of a

water body or wetland and would be thoroughly cleaned before operation below the OHW line. Biodegradable lubricants and fluids would be used in equipment operating in and adjacent to the stream channel and water. To minimize impacts to wetlands, temporary wetland mats would be placed where access roads crossed existing wetlands.

Impacts to wetlands and floodplains are consistent with the Tributary Habitat EA analysis in Sections 3.2.2 (Effects Specific to Category 2 - Improving River, Stream, Floodplain, and Wetland Habitat), 3.2.9 (Effects Specific to Category 9 – Riparian and Upland Habitat Improvements and Structures), and 3.3.4 (Effects to Resources by Resource Type – Wetlands and Floodplains). The analysis concludes that wetlands would be temporarily damaged or destroyed in the short term. However, wetlands would be permanently restored, expanded, or improved a few days or weeks later by that same action. Actions in Category 2 (River, stream, floodplain, and wetland restoration) would be among those most likely to initially damage then restore wetlands. Channel reconstruction is a restoration action, with the end result designed to improve the wetland condition and function in the project area. Though appreciable, the short-term effects would be temporary, with full or greater restoration being the end result. Other actions with no construction activity (e.g. planting) would have no or inconsequential short-term adverse effects, but would provide some long-term beneficial effect. The overall effects of this project would be low and consistent with those evaluated in the Tributary Habitat EA.

## 5. Wildlife

The project area has the potential to contain habitat for ESA-listed Canada lynx (*Lynx canadensis*), gray wolf (*Canis lupus*), yellow-billed cuckoo (*Coccyzus americanus*), marbled murrelet (*Brachyramphus marmoratus*), and Northern spotted owl (*Strix occidentalis caurina*). These species and their critical habitats are not present in the project area; therefore, the project would have no effect on ESA-listed wildlife.

The effects of the project are consistent with the USFS National Forest Management Act and the Forest Plan. The project would not contribute to a negative trend in viability of any wildlife Management Indicator Species (MIS), and would be consistent with the Migratory Bird Treaty Act (MBTA), the Migratory Bird Executive Order 13186, and regulations covering federally listed species under the ESA.

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 or permanent displacement as it may take three to ten 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.

The adverse effects described above would be short term; however, the resulting condition of the restoration action would be 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.

Impacts to wildlife are consistent with the Tributary Habitat EA analysis in Sections 3.2.2 (Effects Specific to Category 2 - Improving River, Stream, Floodplain, and Wetland Habitat), 3.2.9 (Effects Specific to Category 9 – Riparian and Upland Habitat Improvements and Structures), and 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 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 this project would be low and consistent with those evaluated in the Tributary Habitat EA.

## **6. Geology and Soils**

Impacts to soils would result from temporary construction activities, including vegetation clearing, grading, and compaction of soils by heavy equipment during construction. Clearing and grading would remove both vegetation and topsoil. Compaction from heavy equipment degrades soil structure, reducing pore space needed to retain moisture and promote gas exchange.

Short-term construction-related impacts would include a temporary increase in soil erosion or temporarily elevated suspended sediments in the Entiat River. These impacts would be mitigated by the use of erosion and sediment control devices such as silt fencing, drainage relief, and prompt, effective rehabilitation of disturbed sites, which would serve to maintain connectivity, hydrology, and sediment regimes. All exposed soils would be protected from erosion by mulching, hydroseed covering, or other approved measures within three days of grading. Excavated material would be placed in a spoils area. An Erosion and Sediment Control Plan would be provided by the contractor prior to project implementation.

Over the long term, soil impacts associated with restored sediment transport would be beneficial due to the restoration of the natural soil-forming process, sediment flushing, and floodplain function. Furthermore, the Entiat River floodplain would stabilize due to the installation of native plantings.

Impacts to geology and soils are consistent with the Tributary Habitat EA analysis in Sections 3.2.2 (Effects Specific to Category 2 - Improving River, Stream, Floodplain, and Wetland Habitat), 3.2.9 (Effects Specific to Category 9 – Riparian and Upland Habitat Improvements and Structures), and 3.3.6 (Effects to Resources by Resource Type – Geology and Soils). The analysis concludes that the effects of the proposed action on geology and soils would be moderate to high in the short-term, but with implementation of mitigation measures and the long-term benefits, the overall effects would be moderate. The overall effects of this project would be consistent with those evaluated in the Tributary Habitat EA.

## **7. Transportation**

Access to the project site and soil disposal area would be via Entiat River Road, Highway 19, which runs parallel to the project area to the northeast. A 90-foot long, 21-foot wide temporary bridge would be constructed to access the lower and upper side channels and soil disposal areas. The bridge would start at Entiat River Road, which runs parallel to the north bank of the Entiat River, where the road is closest to the middle side channel, and would extend across the Entiat River to the upper side channel. This

would allow haul trucks to access the sites. Using this bridge to cross the Entiat River, temporary construction access to the lower side channel would be gained from the northeast and southwest, utilizing one stream crossing. Temporary access to the middle side channel would be gained from the north and south, utilizing one stream crossing. Temporary access to the upper side channel would be gained from the northeast and southwest.

All access roads would be repaired/restored following project completion. Temporary access routes in areas prone to inundation during the in-water work window would be decommissioned before the end of the in-water work window. No actions are proposed that would alter, relocate, or decommission existing roads, or create new roads. The project would not modify the channel structure and hydraulic characteristics of the Entiat River in such a way that changed flow conditions would affect downstream road prisms, culverts, or bridges. These impacts were considered in the YN's review and approval of the project by requiring design engineers to disclose their data, analysis, and modelling of the stream and the action at various flood levels to ensure downstream infrastructure would not be placed at increased risk.

Impacts to transportation are consistent with the Tributary Habitat EA analysis in Sections 3.2.2 (Effects Specific to Category 2 - Improving River, Stream, Floodplain, and Wetland Habitat), 3.2.9 (Effects Specific to Category 9 – Riparian and Upland Habitat Improvements and Structures), and 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**

There are no recreational or other public uses currently or in the future for the Upper Burns & Angle Point project area. There are no existing access points, trails and/or roads within the project vicinity. All access would be temporarily created on-site during construction activities.

Impacts to land use and recreation are consistent with the Tributary Habitat EA analysis in Sections 3.2.2 (Effects Specific to Category 2 - Improving River, Stream, Floodplain, and Wetland Habitat), 3.2.9 (Effects Specific to Category 9 – Riparian and Upland Habitat Improvements and Structures), and 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. Some small acreages along stream course areas may revert from agricultural uses back to the wetland and riparian conditions from which they had historically been converted. The overall effects of this project on land uses and recreation are expected to be low to moderate and would be consistent with those evaluated in the Tributary Habitat EA.

## **9. Visual Resources**

The Entiat River is a proposed Wild & Scenic River. The YN works closely with the USFS to design projects that take visual resources into account and follows the guidelines provided by the USFS for selecting temporary access and crossing locations, as well as sight and height requirement restrictions from Entiat River Road for large woody material structures that may be seen from the road. To this end, the YN would snap wood pilings off at the top to give them less vertical height and a more natural, roughened appearance while still achieving their designed purpose.

Impacts to visual resources are consistent with the Tributary Habitat EA analysis in Sections 3.2.2 (Effects Specific to Category 2 - Improving River, Stream, Floodplain, and Wetland Habitat), 3.2.9 (Effects Specific to Category 9 – Riparian and Upland Habitat Improvements and Structures), 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. 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, would be implemented on public lands 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 project site would likely experience a decrease in human-created noise coming from restoration sites and an increase in natural sounds associated with restored riparian habitats.

Impacts to air quality, noise, and public health and safety are consistent with the Tributary Habitat EA analysis in Sections 3.2.2 (Effects Specific to Category 2 - Improving River, Stream, Floodplain, and Wetland Habitat), 3.2.9 (Effects Specific to Category 9 – Riparian and Upland Habitat Improvements and Structures), 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 designated the USFS as the lead agency for Section 106 of the NHPA and consultation under Section 106 of the NHPA has been completed for this project. Surveys of the area of potential effect for the project were conducted for Native American religious or cultural sites, archaeological sites, and historic properties under the USFS 1997 Programmatic Agreement with the Washington Department of Archaeology and Historic Preservation (Washington DAHP). The USFS consulted with the Confederated Tribes of the Colville Reservation and the YN throughout project planning. Section 106 concurrence was

received on June 10, 2020, and January 19, 2021. Both Tribes and the Washington DAHP concurred with the USFS's determination of No Historic Properties Affected.

On June 3, 2020, Bonneville sent a letter to the Washington DAHP notifying the office of Bonneville's involvement in the project (BPA CR Project No. WA 2020 165). The USFS OOWNF would continue to act as lead federal agency throughout the life of the project for Section 106. No further action is required on Bonneville's part.

If archaeological or historic materials were discovered during project activities, work in the immediate vicinity would stop, the area would be secured, and the Entiat River Ranger District and the consulting parties would be notified.

Impacts to cultural resources are consistent with the Tributary Habitat EA analysis in Sections 3.2.2 (Effects Specific to Category 2 - Improving River, Stream, Floodplain, and Wetland Habitat), 3.2.9 (Effects Specific to Category 9 – Riparian and Upland Habitat Improvements and Structures), and 3.3.11 (Effects to Resources by Resource Type – Cultural Resources). That is, the effect on cultural resources from the proposed action would be low because cultural resources would be avoided by project construction and effects would be appropriately resolved through the Section 106 consultation process. The overall effects of this project would be consistent with those evaluated in the Tributary Habitat EA.

## **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. Long-term benefits could result from natural scenery. 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 in Sections 3.2.2 (Effects Specific to Category 2 - Improving River, Stream, Floodplain, and Wetland Habitat), 3.2.9 (Effects Specific to Category 9 – Riparian and Upland Habitat Improvements and Structures), and 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 populations where environmental justice would be a consideration are 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 restoration of functional riparian, wetland, and floodplain habitats would expand the amount of wetland soils in which atmospheric carbon would be sequestered. By increasing stored carbon through the increase of wetland soils, the project would help mitigate for the release of greenhouse gases. The project would also provide for an increase of long-term water table inputs through restoring floodplain function and increasing connectivity of streams and rivers to their floodplains. It would also increase riparian shading of streams and rivers. Both of these results from the project would help lower water temperatures, thereby ameliorating the effects of climate change on aquatic species.

Impacts to climate change are consistent with the Tributary Habitat EA analysis in Sections 3.2.2 (Effects Specific to Category 2 - Improving River, Stream, Floodplain, and Wetland Habitat), 3.2.9 (Effects Specific to Category 9 – Riparian and Upland Habitat Improvements and Structures), and 3.3.14 (Effects to Resources by Resource Type – Climate Change). The analysis concludes that the short-term effects of emissions from motorized equipment operations during construction or implementation of the proposed activities would be offset to some degree by the ameliorating effects of restored floodplain function with increased water table inputs, increased carbon sequestration in expanded wetlands, and water temperature decreases from improved instream and riparian habitat conditions. 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**

Bonneville finds that the type of actions and the potential impacts related to the proposed Upper Burns and Angle Point Stream Restoration Project have been examined, reviewed, and consulted upon and are similar to those analyzed in the Columbia River Basin Tributary Habitat 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(c)(1) and 40 CFR §1502.9(d). Therefore, no further NEPA analysis or documentation is required.

/s/ Mandy Hope

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Concur:

/s/ Sarah T. Biegel

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