Supplement Analysis
for the
Aquatic Restoration Environmental Assessment
(DOE/EA-2119/SA-02)

Desolation Creek Reach 3 Restoration Project
BPA project number 2000-031-00
BPA contract number 73982

Bonneville Power Administration
Department of Energy

Introduction

In November 2019, Bonneville Power Administration (BPA) adopted the US Forest Service (USFS) Umatilla National Forest's Aquatic Restoration Environmental Assessment (EA)(DOE/EA-2119). The Aquatic Restoration EA analyzed the potential impacts of restoration activities occurring within and on lands adjacent to the Umatilla National Forest in Umatilla, Grant, Morrow, Walla Walla, Wallowa, Wheeler, and Union counties of Oregon and Asotin, Columbia, Garfield, and Walla Walla counties of Washington.

Consistent with the EA, this supplement analysis (SA) analyzes the effects of the proposed Desolation Creek Reach 3 Restoration Project (project) that would implement many of the restoration actions assessed in the EA in Grant County, Oregon. This SA analyzes the site-specific impacts of the proposed project to determine if the project is within the scope of the analysis considered in the EA. It also evaluates whether the proposed project represents significant new circumstances or information relevant to environmental concerns that were not addressed by the EA. The findings of this SA determine whether additional National Environmental Policy Act (NEPA) analysis is needed pursuant to 40 Code of Federal Regulations (CFR) § 1502.9(d) and 10 CFR 1021 *et seq*.

Proposed Action

BPA proposes to fund the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) to implement the Desolation Creek Reach 3 Restoration Project on Desolation Creek, a tributary to the North Fork John Day River in Grant County, Oregon (Figure 1). The project would primarily occur on private property inholdings within the USFS-managed National Forest System lands, and a small area within the adjoining Umatilla National Forest. The watershed has experienced a history of fur trapping, livestock grazing, timber harvest, wildfires, mining, road building, and sparse settlement. These combined watershed-scale land uses and impacts have degraded habitat throughout Desolation Creek. Specific actions that have led to degraded habitat include construction of roads, berms, floodplain grading, and intensive cattle grazing. Early in the 20th century, an access road was constructed along much of Desolation Creek, with an associated bridge abutment and road embankment located in the lower portion of the project reach. The road access facilitated intensive cattle grazing and floodplain manipulation which resulted in a degraded floodplain and confined channel. Desolation Creek has been lined with riprap to prevent channel migration into the access road. Additionally, a network of historical berms, likely for flood protection, are also scattered throughout the floodplain for the length of the

project reach. These various structures throughout the reach all had the effect of limiting flood inundation and confining flows to the main channel. The proposed project would improve habitat for Endangered Species Act (ESA)-listed Mid-Columbia steelhead (*Oncorhynchus mykiss*) and bull trout (*Salvelinus confluentus*), as well as other non-ESA listed fish and wildlife species, including spring Chinook salmon (*O. tshawytscha)* and lamprey.

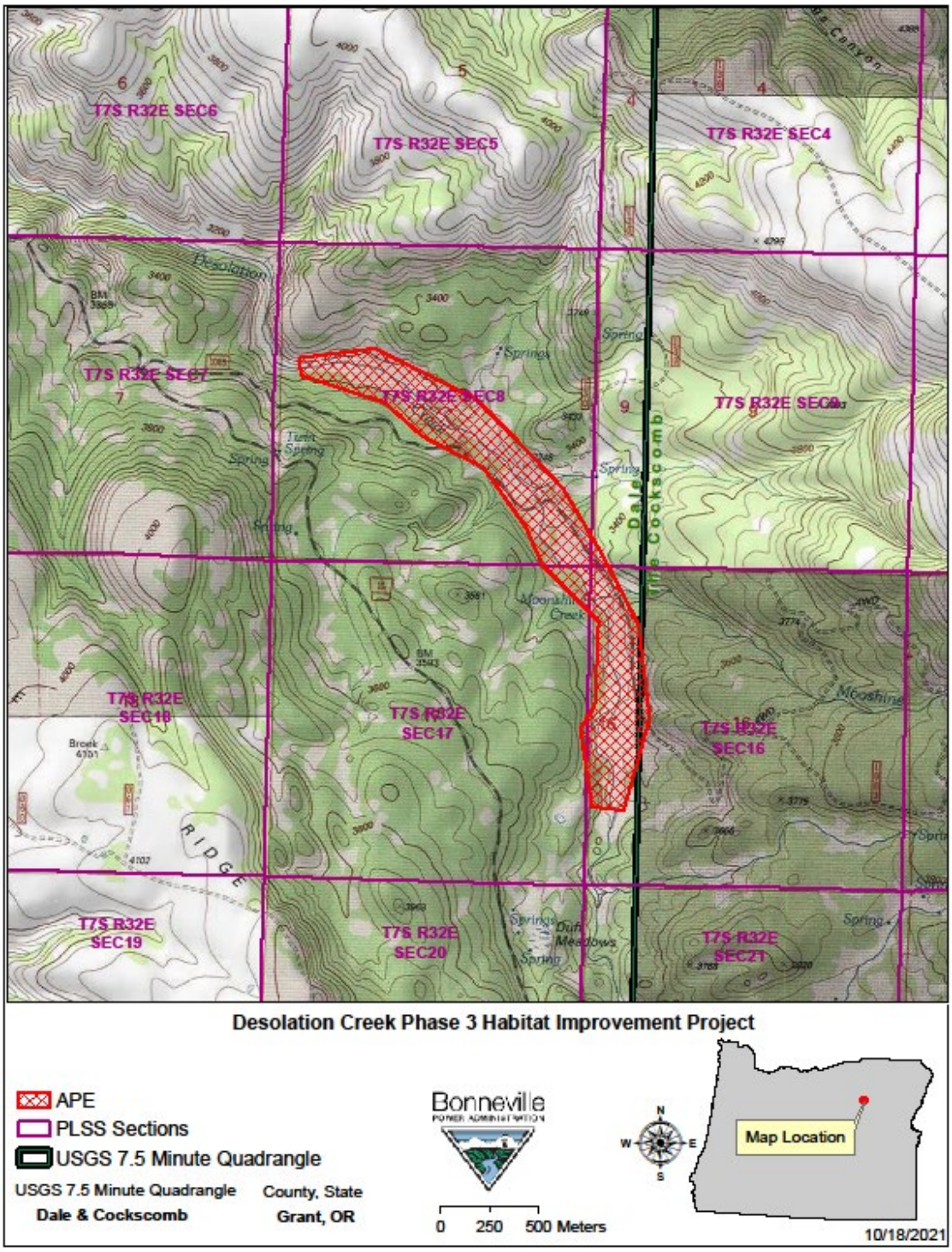

Figure 1. Location of Proposed Desolation Creek Reach 3 Restoration Project.

The proposed project would recreate key functional attributes that support sustainable fish, wildlife, and riparian habitat conditions within the constraints of project area boundaries and available funding. The restoration would be conducted in riverine and floodplain areas to help restore aquatic functions and structure, and plant species composition that would have occurred pre-disturbance.

Project activities would involve using heavy equipment to remove/replace a road, reconstruct stream channels and place a variety of large woody debris (LWD) habitat enhancement structures, including: apex jams, bank meander rootwads, beaver dam analogs, buried rootwads, channel spanning rootwads, longitudinal logs, single log – tree structures, and single log – rootwad structures. Realigning, connecting, and creating channels for this effort consists of a combination of treatments. The estimated acres of floodplain reconnected at the annual peak flow due to berm removal, large wood placement, and floodplain grading include 19.5 acres of riparian habitat and 11.5 acres of wetlands. Access routes and stockpile locations needed to assist with the construction of these structures are contained within the project area, with access routes following established USFS roads. There would be an expected net removal of approximately 6,000 cubic yards (CY) of road debris and material that would be taken to an approved site.

Specific restoration elements of design discussed below include road obliteration and setback, floodplain and channel grading, LWD elements, and other features:

- Project Element 1 - Road Relocation. Road relocation efforts would result in 0.4 mile of the National Forest (NF) 1003 Road being relocated out of a wetland area associated with Moonshine Creek and an unnamed creek's entry into Desolation Creek's floodplain. The new road would be routed to an old road scar along the floodplain margin. The relocation of the road outside of the floodplain and subsequent road removal within the floodplain would facilitate the reestablishment of wetlands, resolution of associated fish passage barriers, and improvement in floodplain connectivity. The decommissioned road area would be recontoured to match adjacent floodplain grade and excess material from the decommissioning would be hauled to approved quarry sites for disposal in accordance with cultural resource and additional environmental clearances. The relocation would result in the removal of two existing culverts incapable of passing debris and aquatic species at Moonshine Creek and an unnamed creek. These culverts would be replaced by culverts along the new alignment adhering to Oregon Department of Fish and Wildlife, Habitat Improvement Program (HIP), and Aquatic Restoration Biological Opinion (ARBO II) design criteria with 8- and 7-foot culvert widths and stream simulation material in the culvert bed. Heavy equipment would be used to remove and construct the road and culverts in accordance with the design documents. To maintain access to adjacent forest land, the new road and culverts would be installed prior to old culvert removal.

- Project Element 2 - Floodplain and Channel Grading. The floodplain and channel grading would include areas of floodplain grading and berm removal facilitating the reconnection of historical floodplains and riverine wetlands. Manipulated or artificially higher areas (including berms and historical roadbeds) would be graded to promote broad floodplain engagement by stream flows. Berms to be removed through grading have been estimated at one mile in length. Grading areas are sited to avoid existing wetland areas, and limit disturbance to mature vegetation. The target elevations of floodplain grading were determined to achieve maximum floodplain activation while producing material for fill areas. Excavated material from floodplain grading would be used for constructed riffles, large woody debris ballast, a landslide jam, and fill for channel narrowing, thereby decreasing channel capacity and increasing floodplain engagement.

- Project Element 3 – Aquatic and Floodplain Complexity. Aquatic and floodplain complexity would be improved through the construction of 213 LWD features consisting of deflector jams, apex jams, channel-spanning structures, emulated landslides, side channel jams, partially-buried single logs, floodplain wood, habitat wood, and beaver dam analogs using approximately 480 wood pieces. LWD structure development would increase stream channel and floodplain complexity, thereby increasing in-channel habitat diversity and slowing river flow. The slower flows would improve sediment sorting and retention, create and maintain aquatic micro habitats, and disperse and attenuate peak flows. This would also promote growth of native vegetation resulting in increased stream shade and large wood entrainment, and promote robust aquatic species inhabitation, both of which are dependent upon complex habitat assemblages in stream channel and floodplain aquatic habitats. LWD would be provided by the construction contractor and up to 93 trees greater than 12" diameter at breast height (DBH) and 250 pieces of small wood and slash (<6" DBH) without root wads would be obtained in the area included in Figure 1.

- Project Element 4 – Fencing and Restoration Planting. Approximately 850 linear feet of riparian cattle exclusion fence in the lower portion of the project area would be relocated to expand the protected area to allow for dynamic side channel and floodplain function activation in the lower project reach. This would increase cattle exclusion within the expanded riparian area by approximately 4 acres. Upon completion of the construction efforts, native hard and soft woods including black cottonwood, ninebark, quaking aspen, red-osier dogwood, Douglas hawthorn, and serviceberry, would be planted and appropriate grass and sedges seeded in areas disturbed through implementation. Native seed mix distribution would occur where moist ground is available during implementation or upon the return of fall rains in September/October. Native hardwoods not associated with wood structures would be planted in October/November following implementation. A phased approach to hardwood plantings may result in plantings held in reserve to better reflect site conditions as the design evolves over time to increase planting success.

The project activities would be conducted in accordance to BPA's HIP biological opinions and are consistent with project categories identified in the Aquatic Restoration EA (Table 1).

Table 1. HIP Biological Opinion (BO) Categories of Actions Identified in the Desolation Creek Reach 3 Restoration Project and Equivalent Aquatic Restoration EA Project Categories

HIP BO Categories of Action	Aquatic Restoration EA Project Categories
1f - Bridge and Culvert Removal or Replacement	1. Fish Passage Restoration (Stream Simulation Culvert and Bridge Projects; Headcut and Grade Stabilization; Fish Ladders; Irrigation Diversion Replacement/Relocation; and Screen Installation/Replacement)
1h - Installation of Fords	9. Livestock Fencing, Stream Crossings, and Off-Channel Livestock Watering
2a - Improve Secondary Channel and Wetlands	5. Off- and Side-Channel Habitat Restoration
2b - Setback or Removal of Berms, Dikes, and Levees	7. Set-back or Removal of Existing Berms, Dikes, and Levees
2c - Protect Streambanks Using Bioeng. Methods	6. Streambank Restoration

HIP BO Categories of Action	Aquatic Restoration EA Project Categories
2d - Install Habitat-Forming Natural Structures	2. Large Wood (LW), Boulder, and Gravel Placement (LW and Boulder Projects; Engineered Logjams; Porous Boulder Weirs and Vanes; Gravel Augmentation; Tree Removal for LW Projects)
2e - Riparian Planting	15. Riparian Vegetative Planting
2f - Channel Reconstruction	4. Channel Reconstruction/Relocation
2g - Beaver Habitat Restoration	17. Beaver Habitat Restoration
5b - Road Decommissioning	11. Road and Trail Erosion Control

The project would begin in 2022 with initial efforts focused on staging of wood and rock in staging areas, followed by grading and large wood placement within floodplain areas. Final efforts on the in-water work components would be completed in 2023. Issues identified after construction would be addressed in accordance with the project's adaptive monitoring and management plan.

The project would support conservation of ESA-listed species considered in the 2020 ESA consultations with the National Marine Fisheries Service and United States Fish and Wildlife Service on the operations and maintenance of the Columbia River System. This action also supports BPA's commitments to the Confederated Tribes of the Umatilla Indian 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*.). Despite short-term adverse impacts from turbidity and habitat loss due to construction activities, the overall impacts would be beneficial to ESA-listed species as natural functions return to Desolation Creek.

Environmental Effects

The typical environmental impacts associated with the Aquatic Restoration EA are described in Chapter 3 of the EA, and are incorporated by reference and summarized in this document. Below is a description of the potential site-specific impacts of the Desolation Creek Reach 3 Restoration Project and an assessment of whether these impacts are consistent with those described in the Aquatic Restoration EA.

1. **Aquatic Resources – Hydrology and Fishes**

Although the proposed project activities are designed to improve aquatic habitat conditions for salmonids and other aquatic species over the long term, short-term adverse effects to water quality, fish, and other aquatic organisms may occur because of construction activities.

Water quality would be affected by short-term impacts related to construction, including turbidity resulting from channel excavation, floodplain and channel re-contouring, placement of natural wood structures, and other similar actions. Turbidity-related impacts would be minimized by implementing the appropriate best management practices (BMPs) and adhering to applicable regulatory requirements and permit conditions, and would, therefore, be low. Construction activities would comply with an erosion control plan to minimize the amount of sediment from entering waterbodies. Temporary and permanent erosion and sedimentation control BMPs could include, but would not be limited to, the use of turbidity curtains, straw bales, coir wattles, sediment fencing, check dams, coir matting, and erosion control blankets.

The project is expected to have permanent direct impacts resulting from earthwork activities (e.g. cut, fill), and indirect impacts in which wetland areas would likely be converted to side channels. In addition

to the short-term, negative effects to wetlands, the new inundation levels would either enhance existing wetlands or create new wetland areas. Removal of NF 1003 road is also expected to benefit wetland function. Appropriate Clean Water Act wetland and waterbody permitting would be obtained prior to any wetland or waterbody disturbance. These negative impacts are expected to be moderate, but in the long term would be beneficial to wetlands as natural functions are reestablished.

Construction equipment (such as excavators, bulldozers, dump trucks) would pose a risk for accidental spills of fuel, engine fluids, and other contaminants. Additionally, construction-related discharges could occur during vehicle washing, pumping for work-area isolation, or other construction-related water use. Discharges could carry sediments or contaminants to nearby water bodies, floodplains, wetlands, or riparian areas. During construction, BMPs to avoid or minimize potential negative impacts to water quality from accidental spills and discharges would be in place. These would include, but would not be limited to: conducting machinery maintenance, staging, and refueling in designated areas away from waterbodies or sensitive areas or in fully contained areas, and conducting regular checks of machinery for leaks prior to starting work. Thus, potential impacts to water quality related to accidental spills of contaminants would be low.

During project construction, some fish injury or mortality may occur during fish salvage, dewatering, and in-stream construction of the project elements and may impair water quality. The project-related construction effects would be short term and localized to the immediate project area and adjacent shoreline. Long term, the project would improve hydrological regimes, enhance water quality, and increase habitat area and access for the benefit of native fish. The construction of the proposed project would result in low to moderate short-term effects to fish in the project area; however, after construction, fish species that use this portion of Desolation Creek would find improved habitat conditions for all life stages, and the long-term outcomes would be beneficial.

Following construction, the restored channels would provide and maintain consistent ingress and egress for juvenile salmonids at a variety of flow conditions, and restore seasonal inundation patterns to the wetland and floodplain areas, resulting in a long-term benefit to hydrological processes. Increased fine sediment deposition, expansion of riparian vegetation, and cooler water temperatures would be provided to Desolation Creek.

As consistent with the Aquatic Restoration EA, BPA consulted with the US Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) under Section 7 of the ESA and is implementing this project in accordance with the HIP biological opinion and Essential Fish Habitat consultation for impacts to ESA-listed fish. Categories of action included in the HIP and relevant to the Desolation Creek Restoration Project include those in the 'River, Stream, Floodplain and Wetland Restoration' category (Table 1).

In addition to ESA-listed species, the USFS also tracks the regional forester's sensitive species list (RSSL) and Management Indicator Species (MIS) to determine the effects of management activities on their populations and the populations of other species with similar habitat needs. The amount and quality of habitat is used as a proxy for determining the effects of projects on RSSL and MIS, all of which exhibit largely overlapping ranges and similar vulnerability to effects with the ESA-listed fish. Based on the habitat that would be affected, the USFS determined that the project "may impact individuals, but is not likely to cause a trend toward Federal listing or loss of viability within the planning area." This determination is based on the USFS' monitoring of previous ARBO II projects (on file at the USFS' Supervisor's Office, Pendleton Oregon) and general findings that the nature of instream projects would

be beneficial in the long term, even if short-term impacts may be negative. Direct effects to instream habitat are of high magnitude (localized turbidity increases) but the duration is short and limited (episodic over two to three weeks with downstream effects of generally less than a few hundred feet) as allowed under the ARBO II, HIP, and Clean Water Act permitting.

These impacts are consistent with the analysis in the Aquatic Restoration EA, Chapter 3, Aquatic Resources – Hydrology and Fisheries, which describes overall low impacts to Aquatic Resources after moderate short-term adverse effects during construction and highly beneficial long-term effects. The expected long-term beneficial effects would include increased low-flow surface water connectivity within the floodplain and restoration of natural floodplain processes which would ultimately benefit plant, fish, and wildlife species that utilize habitat at the project site. The following project categories were considered in the EA to provide immediate and long-term benefits to Aquatic Resources: Fish Passage Restoration; Large Wood, Boulder, and Gravel Placement; Channel Reconstruction/Relocation; Streambank Restoration; Livestock Fencing, Stream Crossings, and Off-Channel Livestock Watering; Set-back or Removal of Existing Berms, Dikes, and Levees; Road and Trail Erosion Control and Decommissioning; and Off- and Side-Channel Habitat Restoration. The remaining project activities described in the EA that are relevant to this project may not provide immediate benefits but would provide long-term benefits: Riparian Vegetative Planting and Beaver Habitat Restoration. These project categories and their equivalent HIP categories of action are also noted in Table 1.

2. **Wildlife**

In the short term, noise and visual disturbance during construction would likely cause wildlife to avoid the project area during the construction period. If present during construction, nesting birds, smaller ground-dwelling mammals, reptiles, and amphibians could be harmed or killed incidentally during construction. In the longer term, effects to wildlife are expected to be beneficial.
Long-term improvements to topographic and vegetative diversity would increase with restoration actions, which would benefit certain wildlife. Overall, semi-terrestrial mammals such as beaver, as well as amphibians, waterfowl, shorebirds, and insect-eating birds, would have expanded and improved wetland and aquatic habitat for feeding and breeding in the long term as a result of this project.

The USFS tracks ESA-listed, RSSL, and MIS within their project area to determine the effects of management activities on their populations and the populations of other species with similar habitat needs. The amount and quality of habitat is used as a proxy for determining the effects on RSSL and MIS. Of the species tracked by USFS within the Umatilla National Forest, only one has the potential to be within the project area and affected by project implementation.

There is one wildlife species protected under the ESA with the potential to be in the Desolation Creek project area: gray wolf (*Canis lupus*). There are no known den sites in the project area, and gray wolf usually occur in remote areas with sources of ungulates and water nearby. Temporary human disturbance to the site is the only potential effect that this project would have on gray wolf. The construction activity would likely disturb ungulates and other wildlife that were utilizing the area. If wolves were hunting in the area, this activity would likely disturb them. Wolves and deer would be able to use the area without human disturbance at night. Wildlife disturbed by construction activity would be able to move to adjacent areas. This temporary human disturbance would not result in any reductions to deer or other wildlife populations. It would not reduce prey availability for gray wolf and “may effect, but would not likely adversely affect” the gray wolf.

The impacts discussed in the Aquatic Restoration EA, Chapter 3, Wildlife include: noise or visual disturbance leading to displacement of individual animals, and habitat conversion. The project would avoid and minimize wildlife impacts by observing buffer zones and timing restrictions developed by BPA and USFWS to avoid adverse effects if any ESA-listed or sensitive wildlife are found within the project work areas. These impacts are consistent with the Aquatic Restoration EA. Overall, there would be a moderate and beneficial impact to wildlife in the long term.

3. **Botany**

Two species of concern, world thelypody (*Thelypodium eucosmum*) and Douglas's clover (*Trifolium douglasii*) are known to exist in the National Forest. Umatilla National Forest personnel conducted a botanical survey within the project area to identify sensitive species on May 23 and July 7, 2022. No Federal or state endangered, threatened, or candidate species were observed during the surveys.

To implement the project, construction equipment would need to have access to the river bank in areas with existing vegetation. In the short term, these constriction activities would result in a loss of grasses, shrubs, and trees at specific spots in the project area. Construction access and staging was one of the preliminary criteria used to identify areas where construction activities would occur to ensure that equipment access would result in minimal disturbance to what little high quality vegetation existed. There are very few areas where mature vegetation (older than 20 years) exists. The areas where mature vegetation does exist would not be disturbed by project construction.

The vegetation impacts would be temporary and would be mitigated through the adherence to HIP conservation measures and permit requirements. In the long term, the proposed project would include a planting plan that would restore areas affected during construction.

Therefore, the impacts associated with the Desolation Creek Reach 3 Restoration Project, which include short-term impacts and long-term benefits, are expected to be low to moderate, consistent with those described in the Aquatic Restoration EA Chapter 3, Botany.

4. **Soils**

All of the proposed project elements would have impacts to soils, through compaction, removal, and mixing of soil strata.

Excavation of soil would occur to create and modify the floodplain and main channel, install the habitat features, and improve site access. The use of heavy machinery would disrupt soils in the project area as a new channel is excavated and the soils and topography are altered. Much of the excavation material cut from the floodplain grading would be used to elevate and plug the old channel bed in several areas. This would promote the frequency, duration and extent of floodplain inundation as well as encouraging more side channel flow. While much of the excavated soils would be relocated within the project site, about 6,000 CY of road debris material would be removed offsite.

Within the main channels and floodplain, natural LWD structures would be installed to establish instream habitat and improve floodplain connectivity, and would be placed in locations where they would increase scour of the river bottom to create instream or wetland habitat. The material that is displaced from these areas would be moved downstream until it reached a depositional area where slower moving water would cause it to settle back into the river bed and remain in the system. In addition, some of the structures would direct water towards the opposite bank, rather than straight downstream, and the energy from this flow would cause the erosion of the river bank and lateral

channel migration. In areas where structures would result in the lateral migration of the stream channel soils in the stream, banks would be eroded and moved downstream. Where those materials are deposited would depend on the size of the material. Larger rocks and cobbles would drop out and settle on the river bed fairly quickly.

During construction, the movement of equipment at staging areas and along temporary access routes would result in some soil compaction, and road maintenance would be needed to ensure roads to the upland tree removal sites do not erode during or after the project. The project design was developed to avoid and minimize impacts by finding the most direct routes to construction areas and reducing the size of staging areas.

Overall, construction would result in some temporary erosion or soil loss. In the short term, erosion and sediment control measures would be used during construction to manage temporary soil loss and accelerated sediment delivery to the river. During construction, erosion protection and sediment control measures would reduce soil impacts to low levels, depending on the area disturbed, site stability, weather, and other factors. These impacts would be temporary and would be mitigated through the BMPs. In the long term, the proposed project would have topography and stream geomorphology more consistent with historical conditions and would include riparian plantings that would restore any areas affected during construction.

The proposed project would be restoring the natural processes of the river that occurred historically and so the effects to soils would be low to moderate, consistent with the Aquatic Restoration EA, Chapter 3, Soils.

5. **Silviculture**

Approximately 93 trees greater than 12” DBH and 250 small trees (<6” DBH) and slash trees would be removed for LWD elements. These would be removed from the project area to allow for access routes/temporary roads, channel construction, and the floodplain grading. A reduction in tree density would increase the growing space of residual trees providing more available moisture, nutrients, and light. Reduced tree densities, especially juniper, would improve the availability of groundwater and improve the overall health of the ecosystem. Revegetation efforts would increase tree density in disturbed riparian areas.

Therefore, the impacts associated with the project, which include short and long-term benefits, are expected to be low to moderate, consistent with those described in the Aquatic Restoration EA Chapter 3, Silviculture.

6. **Fire and Fuels**

Trees removed due to floodplain grading would be used in LWD structures, which would redistribute the fuel load and would return fuel variability to treated areas. The trees present less of a fire risk once they are used in LWD structures due to the natural ability of riparian microclimates to resist fires as available moisture in riparian areas is greater.

Therefore, the impacts which include short- and long-term benefits, are expected to be low to moderate, consistent with those described in the Aquatic Restoration EA Chapter 3, Fire and Fuels.

7. **Air Resource**

Construction could impact air quality in the project area as a result of the required earth moving and emissions from vehicles. Dust would likely be generated during excavation and transport of soils. In general, excavated soils would likely be moist as they would be excavated from lower-lying areas where moisture is most persistent; therefore, dust from excavation would be minimal.

Climate change could alter precipitation patterns and river hydrology. This could result in potential increases in the magnitude and duration of flow events, alteration of the timing of snowmelt, increased flow regimes, and changes in lake levels. Increases in velocities and erosive forces along streambanks and shorelines and impacts on water temperatures also could likely occur. All of these factors could influence physical sites and biological communities, affecting species assemblages, timing, and use of Desolation Creek, and could also lead to changes in noxious and invasive weed cover.

However, impacts would not result in violations of state air quality standards and the Desolation Creek Reach 3 Restoration Project's impact on air quality would be low both in concentration and duration. This level of impact is consistent with the Aquatic Restoration EA and the impacts described in Chapter 3, Air Resource, which include: temporary and localized increase in dust, pollutants, and greenhouse gas emissions.

8. **Range**

This project area is not currently used for livestock grazing; and is degraded from past use. However, the project site is used as a passage corridor for the movement of cattle from one side of the valley to the other. The project design has included the construction of fords for cattle to localize and minimize impacts due to cattle crossing. There may be some removal of existing grasses and forbs due to construction of project elements and tree removals. These short- and long-term impacts are expected to be low, and outweighed by revegetation activities, improved and increased habitat, and the planned cattle crossing which would allow for passage between grazing sites. This level of impact is consistent with the Aquatic Restoration EA and the impacts described in Chapter 3. These activities generally have positive effects to herbaceous vegetation as the canopy opens and grasses and forbs increase in growth until the canopy closes again, and the forest floor becomes shaded and grass decreases.

9. **Heritage Resources**

Site-specific National Historic Preservation Act (NHPA) Section 106 consultation for the Desolation Creek Reach 3 Restoration Project was completed in November 2021 by BPA. A pedestrian survey was conducted to evaluate the Area of Potential Effect in September of 2021. No resources were identified, and as a result, BPA determined that the project would have no adverse effect on historic properties. This determination was submitted to the Oregon State Historic Preservation Office (SHPO), Confederated Tribes of the Warm Springs Reservation of Oregon, Confederated Tribes of the Umatilla Indian Reservation, and the Burns Paiute Tribe on October 22, 2021. On November 14, 2021, BPA received an automated response from Oregon SHPO. No further comments were received and consultation ended on November 21, 2021.

The impacts discussed in the Aquatic Restoration EA regarding cultural resources noted historic sites are not routinely associated with stream or riparian areas and traditional cultural properties are generally not in conflict with aquatic restoration projects. Impacts to cultural resources as a result of this action would be low, which is consistent with the analysis in the Aquatic Restoration EA, Chapter 3, Heritage Resources.

10. **Recreation**

Land ownership in the project area includes the private ownership within the Umatilla National Forest. The project is proposed to be implemented on private lands with landowners' consent. Long-term impacts to the recreational values are expected to be positive in the long term.

The Desolation Creek Reach 3 Restoration Project is expected to have impacts to transportation infrastructure, because of the removal and replacement of NF 1003 road. However, the impacts are expected to be low because the road would be replaced to USFS standards prior to removal. There is also potential for a slight delay in vehicle traffic due to the construction and hauling of materials, but the impact is expected to be short term and restricted to daylight hours during the construction period.

Visual resources would be negatively impacted in the short term, but positively impacted in the long term as the project area is not readily visible to the public, with the exception of the landowners. During construction, equipment and workers would be present on the site for a short period. The alteration of the physical landscape through the removal of existing dredge materials and post-construction revegetation would shift the character of the site from a somewhat human-engineered landscape to a more natural-looking area.

Implementing the project would result in short-term and minimal noise and hazardous waste impacts related to construction and maintenance activities. While there are landowners within the project area, they are aware of the potential for noise disturbance during the period of project implementation. Workers at the construction site would also experience increased noise levels. Workers would wear adequate hearing protection as appropriate and in accordance with the project health and safety plan and applicable occupational health and safety regulations.

Low impacts on recreation are expected from the reconstruction of channels within the project area. The impacts discussed in the Aquatic Restoration EA, are consistent with the Aquatic Restoration EA, Chapter 3, Recreation, which described low to moderate impacts to recreation, transportation infrastructure, and visual resources.

11. **Socioeconomics and Environmental Justice**[1]

The project is located in Grant County, OR, and Dale, OR (unincorporated) is the closest community at approximately 3 miles west of the project. John Day (population 1,774), the largest city in Grant County, is located about 45 miles south of the project.

The Aquatic Restoration EA did not anticipate that associated projects would have adverse human health or socioenvironmental impacts or disproportionately affect low-income or minority populations including impacts from: short-term employment opportunities, local short-term traffic or lifestyle disruptions due to construction, land use conversion, and improvements to fisheries. The project area is remote and not easily accessible by the public; however, there would be a temporary loss in access to the site during construction. Local users have been notified of road closures and public use is typically minimal in this area. Socioeconomic impacts would be limited in duration, and the adjacent lands would

[1] Section 3.12, Relevant Laws, Regulations, Policies, Guidance, and Plans, of the EA also refers to other applicable laws. However, these were addressed in the resource-specific sections (e.g., ESA was discussed in Botany, Wildlife, Hydrology and Fishes; NHPA was discussed in Heritage Resources), and therefore, only Environmental Justice is considered here.

provide a surrogate space for recreational, and hunting and fishing activities. The project area would be reopened to the public shortly following construction and revegetation efforts.

The project would result in small, temporary, beneficial impacts to socioeconomics by providing jobs for construction workers, and long-term benefits could result from the improvement of fish runs and natural scenery. The project would not displace residents or degrade residential suitability; nor would it cause changes to the local or regional tax base. The project would result in little to no socioeconomic impacts. This is consistent with the conclusion of Aquatic Restoration EA, Chapter 3, Relevant Laws, Regulations, Policies, Guidance, and Plans, which determined there would be no cumulative impacts since there are no direct or indirect effects to environmental justice populations, and no minority or low-income populations are expected to be affected by implementation of any of the alternatives.

Mitigation

Specific minimization and mitigation measures identified in the Umatilla National Forest's Aquatic Restoration EA Appendix B to reduce potential impacts associated with the Desolation Creek Reach 3 Restoration Project are provided in the mitigation Table 2 below.

Table 2. Desolation Creek Reach 3 Restoration Mitigation Measures and Implementation Timeline

MINIMIZATION AND MITIGATION MEASURE	IMPLEMENTATION
Aquatic Resources – Hydrology and Fishes	
Design projects to minimize impacts to water quality.	During design (BPA/Contractor)
Schedule construction activities and manage flows and water levels to work in dry working conditions as much as possible.	Before and during construction (BPA/Contractor)
Locate staging areas, storage sites (e.g., fuel, chemical, equipment, and materials), and potentially polluting activities, away from water resources.	Before construction (Contractor)
Wash heavy equipment before delivery to project site to remove oils, fluids, grease, etc.	Before construction (Contractor)
Isolate in-water work areas and conduct fish salvage and relocation, as needed.	During construction (Contractor)
Follow established protocols (legal and scientific) for handling ESA-listed species.	During construction (Contractor)
Maintain fish passage around isolated in-water work areas.	During construction (Contractor)
Follow project-specific Clean Water Act permit protection measures.	During construction (Contractor)
Implement erosion control and stormwater pollution prevention plans.	During construction (Contractor)
Monitor turbidity during project implementation	During construction (Contractor)
Perform all non-emergency maintenance of equipment off-site.	During construction (Contractor)
Inspect machinery daily for fuel or lubricant leaks.	During construction (Contractor)
Operate machinery for in-water work from dry areas as much as possible.	During construction (Contractor)
Wildlife	
Implement appropriate protective measures (e.g. timing restrictions, noise levels, activity buffers, etc.) as identified in site-specific analyses and consultation with regulatory agencies.	Before and during construction (BPA/Contractor)

Botany	
Inspect and wash equipment as necessary to avoid transport of invasive plants.	Before construction (Contractor)
Identify and flag sensitive plant locations as no-work areas.	Before and during construction (BPA/Contractor)
Protect and retain existing native vegetation as much as possible.	Before and during construction (Contractor)
Use appropriate native seed mix and plants in post-project rehabilitation plans.	After construction (Contractor)
Soils	
Develop and implement soil stabilization plans (e.g. seeding, planting, mulching, etc.).	During design (BPA/Contractor) and after construction (Contractor)
Minimize the size of disturbed areas in access routes and staging areas to avoid unnecessary impacts to soils and vegetation.	During design (BPA/Contractor) and construction (Contractor)
Implement BMPs for erosion and sediment control measures.	During construction (Contractor)
De-compact and restore construction roads and staging areas.	After construction (Contractor)
Silviculture	
Use appropriate native trees in post-project rehabilitation plans.	After construction (Contractor)
Fire and Fuels	
Follow BMPs to reduce impacts (erosion/air quality/ etc.) and risk of wildfire.	During construction (Contractor)
Air Resource	
Apply dust control measures (e.g. watering trucks, low speeds, apply gravel to access roads, etc.) as needed.	During construction (Contractor)
Regularly inspect, maintain, and replace (as needed) mufflers and other emission control devices on all construction equipment.	During construction (Contractor)
Range	
Work with affected landowners to address grazing impacts.	Before construction (Contractor)
Heritage Resources	
Meet any NHPA requirements.	Before construction (BPA)
Mark known cultural resource sites as avoidance areas on construction drawings and flag as no-work areas.	Before and during construction (BPA/Contractor)
Implement mitigation or other measures as instructed by agency cultural resource specialist.	Before and during construction (BPA/Contractor)
Implement Inadvertent Discovery Plan: An Archaeological/Cultural Resource Inadvertent Discovery Plan would be available on site to protect any unanticipated cultural resources discovered during construction as follows: Stop all work; Cover and protect find in place; and Notify Project Manager and agency cultural resources specialist immediately.	Before and during construction (BPA/Contractor)
Recreation	
Provide opportunity for public input for projects likely to be of interest or concern.	During design (BPA)
Develop and implement a Spill Prevention Control and Countermeasures Plans (SPCC).	Before construction (Contractor)
Limit the use of products containing hazardous materials (e.g. wood	Before and during construction

preservatives, petroleum products, asphaltic compounds, asbestos, lead, etc.) in restoration projects.	(Contractor)
Limit restoration construction work hours to typical working hours as much as possible and minimize construction noise-generating activities (equipment, pumps) at night.	During construction (Contractor)
Use flaggers and signage as necessary to avoid vehicle and other conflicts.	During construction (Contractor)
Dispose of non-hazardous wastes in approved landfills.	During construction (Contractor)
Dispose of hazardous wastes according to applicable federal and state laws.	During construction (Contractor)
Remove all equipment, materials, supplies, and waste from project site.	During and after construction (Contractor)
Repair damage to roads and trails due to project activities.	After construction (Contractor)
Socioeconomics and Environmental Justice	
Design and mitigate restoration actions to prevent losses to adjacent property owners.	During design and construction (BPA/Contractor)
Use local labor and materials as possible.	Before and during construction (Contractor)

Findings

This SA finds that the types of actions and the potential impacts related to the proposed Desolation Creek Reach 3 Restoration Project have been examined, reviewed, and consulted upon and are similar to those analyzed in the Aquatic Restoration EA (DOE/EA -2119) and Finding of No Significant Impact. There are no substantial changes to the EA's proposed action and no significant new circumstances or information relevant to environmental concerns bearing on the EA's proposed action or its impacts within the meaning of 10 CFR § 1021.314 *et seq.* and 40 CFR §1502.9(d). Therefore, no further NEPA analysis or documentation is required.

/s/ Israel Duran
Israel Duran
Environmental Protection Specialist

Concur:

/s/ Sarah T. Biegel Date: *August 15, 2022*
Sarah T. Biegel
NEPA Compliance Officer

References

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