Supplement Analysis
for the
Columbia River Basin Tributary Habitat Restoration
Programmatic Environmental Assessment
(DOE/EA-2126/SA-87)

Lookingglass Creek Floodplain Restoration
BPA project numbers 1992-026-01 / 1996-083-00
BPA contract numbers 97249 / 96598

Bonneville Power Administration
Department of Energy

Introduction

In December 2020, Bonneville Power Administration (BPA) completed the Columbia River Basin Tributary Habitat Restoration Programmatic Environmental Assessment (Programmatic EA) (DOE/EA-2126). The Programmatic EA analyzed the potential impacts of implementing fish and wildlife restoration projects across the Columbia River Basin, ranging from constructing fencing and planting vegetation to relocating roads and excavating new stream channels.

Consistent with the Programmatic EA, this supplement analysis (SA) analyzes BPA's proposal to provide funding to the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) to implement the Lookingglass Creek floodplain restoration project. The project would seek to restore roughly three river miles of stream and floodplain in northern Union County, Oregon, to improve habitat conditions for Endangered Species Act (ESA)-listed salmonids which use the river for spawning and rearing habitat.

This SA analyzes the site-specific impacts of these activities to determine if the action is within the scope of the analysis considered in the Programmatic EA. It also evaluates whether the proposed action presents substantial new circumstances or information relevant to environmental concerns or about the significance of the adverse effects that bear on the Programmatic EA analysis. The findings of this SA determine whether additional National Environmental Policy Act (NEPA) analysis is needed pursuant to Department of Energy (DOE) NEPA Implementing Procedures.

Proposed Actions

Lookingglass Creek is a tributary of the Grande Ronde River, a major tributary of the Snake River. From its headwaters high in the Blue Mountains of northeastern Oregon, Lookingglass Creek travels through the Umatilla National Forest collecting snowmelt and runoff from more than 125 miles of streams throughout its drainage until it reaches the confluence with the Grand Ronde roughly 10 miles northeast of Elgin, Oregon. Lookingglass Creek historically hosted extensive populations of spawning and rearing Chinook salmon (*Oncorhynchus tshawytscha*) and steelhead (*O. mykiss*), as well as resident bull trout (*Salvelinus confluentus*) due to the presence of cooler water during the summer.

The proposed project area sits on a valley floor that was purchased by CTUIR in the mid-2010s for fish and wildlife conservation. Lookingglass Creek historically ran eastward down the center of the valley floor, with an extensive floodplain that would be inundated each year during springtime high flows. During the mid-20th century, the stream was channelized and confined to a narrow corridor along the southern edge of the valley by a series of extensive levees and berms to open more space for agriculture and ranching. A private access road, two bridges across the creek, and ponds to create fishing and cattle watering areas were also constructed around this time, further limiting the river's interaction with its historical floodplain. As a result, conditions for fish in this reach of Lookingglass Creek have been

severely degraded. Today, Lookingglass Creek has a steep gradient and a highly incised channel, leaving the stream as little more than a rapidly flowing chute with limited floodplain interaction and poor-quality fish habitat.

Beginning in the summer of 2026, CTUIR proposes to restore roughly 130 acres of the historical floodplain along three miles of Lookingglass Creek by removing constructed earthworks; re-grading a portion of the valley floor; partially filling the existing channel; relocating and removing built infrastructure; installing fish habitat-forming structures; and planting native vegetation. Funding for this project would support conservation of ESA-listed species considered in the 2020 ESA consultations with the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS) on the operations and maintenance of the Columbia River System. These actions also support Bonneville's ongoing efforts to mitigate for effects of the Federal Columbia River Power System on fish and wildlife in the mainstem Columbia River and its tributaries pursuant to the Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Northwest Power Act) (16 U.S.C. §839 *et seq*.). The proposed actions are expected to take two years to fully construct, and CTUIR would continue to monitor and adaptively manage the property to ensure that restoration goals are being met. Construction would require the use of heavy equipment like excavators, bulldozers, and large trucks. Project actions would include:

Bridge and road relocations and structure removal

Lookingglass Creek is currently confined by a private access road that crosses the stream at two points of the property. One bridge, at the far western edge of the property, would be left in place, with minor improvements to its abutments proposed. The other bridge is located roughly 3,700 feet upstream of the first, closer to the center of the valley. While the bridge is in usable condition, the location and width of the crossing constrains the channel of the creek and necessitates heavy bank armoring that prevents floodplain interaction both above and below its location. By moving this crossing further downstream, the historical floodplain would be available to reconnect with the stream.

The bridge would be removed, and the crossing relocated roughly 900 feet downstream. The new bridge location would allow for an additional six acres of potential riparian floodplain to be created by removing the channel constriction caused by the current crossing. The new bridge location would be a 75-foot span on cast-in-place concrete abutments armored with rock and gravel riprap to re-channelize the stream as it leaves the floodplain. The new bridge would also be wide enough to allow heavy vehicles, such as construction machinery and fire equipment, to cross.

The road which leads to the crossing is the main access route across the Lookingglass Creek property. It runs from U.S. Forest Service Road 63 on the east end of the property through the middle of the floodplain. The access road is typically used to access the property by CTUIR personnel for maintenance and monitoring, as well as occasionally by local wildfire control teams. The road is not a public highway and is largely an unimproved dirt and gravel track for much of its length.

The road would be relocated out of the center of the floodplain. Roughly 5,000 feet of the current road prism would be obliterated and the route adjusted to run for most of its length along the northernmost edge of the valley in order to open as much of the central valley floor for natural floodplain development. The new road would be roughly the same length but would be located outside of the floodplain to reduce impacts on natural stream functions. The road would not be significantly improved and would remain compressed dirt and gravel for its length.

A number of dilapidated manmade structures are also present on the property, including an old cabin, sheds, and a concrete pad. These structures were built by previous landowners and were already in disrepair before CTUIR purchased the property. Their conditions have only further deteriorated since, and the buildings are no longer safe for human use, nor are they in use for any authorized activities. A cabin located in the middle of the historical floodplain of Lookingglass Creek channel would be removed. The cabin is located less than 50 feet from the current channel of the stream and would need to be removed for floodplain grading and new channel construction actions. Removal would not require decommissioning of any underground septic system or oil tanks. The cabin is built on a post-and-beam

foundation that does not have extensive underground foundations and would not require large-scale excavation that could disturb below-ground contaminants during removal. The total footprint of the cabin is less than 200 square feet. Additionally, the remnants of a concrete pad with an area of roughly 300 square feet would be removed. This concrete pad is currently little more than broken concrete blocks embedded in the historical floodplain of Lookingglass Creek. The concrete pad is located roughly 300 feet north of the current Lookingglass Creek channel in the middle of the floodplain. The concrete pad would be removed to allow for floodplain grading actions. Small above-ground corrugated metal and wood sheds in the floodplain would also be removed in areas that would be graded. Debris from these removed structures would be hauled off-site and disposed of at a local landfill. No new structures would be constructed to replace these buildings.

Stream channel and floodplain excavation

For much of its length in the project area, Lookingglass Creek is highly channelized, incised, and confined to the southern edge of the valley floor by a series of constructed levees. CTUIR would remove these barriers, fill this channel, and re-grade the valley floor to reconnect the stream with its historical floodplain.

This would involve CTUIR excavating a bypass channel for Lookingglass Creek along the northern edge of the valley. The bypass channel would be roughly three feet deep and four feet wide to contain the flow of Lookingglass Creek during construction. Mitigation, conservation, and design measures such as straw wattles and temporary dirt berms would be erected between the bypass channel and the remainder of the floodplain to reduce the potential for construction activities to affect the diverted creek. Once the diversion channel is fully excavated, CTUIR would divert the stream flow of Lookingglass Creek by installing impermeable barriers at the upstream confluence of the existing channel and bypass. The existing channel would be dewatered in stages to permit fish and aquatic wildlife in the stream to exit, and staff would conduct fish salvage to remove any fish that remain in the stream prior to full dewatering following the procedures included in BPA's Habitat Improvement Program programmatic biological opinion (HIP4 BiOp).

Once diverted, CTUIR would begin excavating the floodplain. Levees and manmade barriers would be obliterated and the spoils used to fill the existing stream channel and manmade ponds throughout the center of the floodplain. The valley floor would be graded to a more uniform elevation and slope to reset it closer to the conditions that would have existed prior to the anthropogenic changes to the valley. Grading would be conducted in two phases, with the upstream third of the valley excavated in 2026 and the remainder of the valley in 2027. The project is designed so that cut and fill would be balanced and would not require any soil to be imported or removed from the property. Roughly 27 total acres of the project site would be graded, with additional amounts of excavation throughout the valley as necessary to develop the desired characteristics.

A low-flow channel about 4,000 feet in length would also be excavated through the center of the valley floor. This channel would be roughly half a foot deep and lined with gravel and fine sediments. The channel would contain the flow of Lookingglass Creek during low flows in the late summer to ensure that fish passage is possible through the reach year-round. During high flows in the spring, this channel would not have the capacity to contain the full volume of Lookingglass Creek, inducing the stream to overflow the channel and inundate its floodplain.

Habitat structures and riparian improvements

CTUIR would install fish habitat-forming structures throughout the floodplain and new channel of Lookingglass Creek. These habitat structures would take a variety of forms, including large wood debris jams, engineered rock riffles, constructed scour pools, and stands of native willow (*Salix spp*.) that would emulate beaver dams.

Wood debris jams would range from individual logs and rootwads to engineered jams with multiple trees, slash fill, and racking material. These debris jams would be placed throughout the floodplain and low-flow channel of Lookingglass Creek to retain water and sediment, create cover and resting habitat for fish, and naturally excavate scour pools and backwaters during high stream flows. Materials for

constructing these debris jams would be locally sourced from vegetation removed during construction when possible. The locations of individual debris jams would be determined following on-the-ground assessments by CTUIR staff during construction.

Engineered rock riffles and scour pools would also be created in the floodplain. Rock riffles would be constructed by placing small boulders, gravel, and wood debris across the channel centerline to create backwatering effects and reduce stream channel velocity. Scour pools would be created by excavating depressions roughly four to six feet deep with gradual slopes. Wood debris and rootwads would be placed at the downstream end of these depressions to capture water and induce further scour during high flows. These pools would retain water and provide resting habitat and sanctuary from predation for fish.

Stands of willow would also be planted throughout the floodplain. Willow stakes would be closely planted in roughly three-foot-deep excavated trenches then backfilled until most of the plant is covered. During high flows, these willows would impound water and catch debris floating downstream, mimicking the effects of beaver dams. Similarly to the other habitat structures, these willow trenches would be placed based on on-the-ground conditions determined by CTUIR staff for locations with the highest potential for fish habitat creation and improvement.

Following the completion of construction, CTUIR would plant and seed disturbed areas with native grasses, forbs, and small trees to enhance vegetation throughout the valley. Plants in lower elevation areas of the floodplain would include native wetland grass and forb species, such as beaked sedge (*Carex rostrata stokes*), Baltic rush (*Junicus arcticus*), and camas lily (*Camassia quamash*). Elevated areas expected to develop into riparian zones would be planted with larger vegetation like chokeberry (*Prunus virginiana*), blue elderberry (*Sambus cerulea*), and black cottonwood (*Populus trichocarpa*). CTUIR would salvage existing vegetation that is already present for these plantings when possible and obtain additional plants and seed from local nurseries. Vegetation would be monitored and adaptively managed in future years, including removing any noxious, invasive, or undesirable weeds and replanting desirable native vegetation if necessary.

Environmental Effects

The typical environmental impacts associated with habitat restoration activities in the Programmatic EA are described in Chapter 3 of the EA. Below is a description of the potential site-specific impacts of the Lookingglass Creek floodplain restoration project and an assessment of whether these impacts are consistent with those described in the Programmatic EA.

1. **Fish**

The effects of the proposed actions on fish are consistent with the analysis in the Programmatic EA, Section 3.3.1, which concluded that project actions would cause moderate short-term adverse effects on fish but provide long-term benefits, making the overall impacts on fish low.

The portion of Lookingglass Creek which runs through the project area currently hosts limited suitable habitat for fish, despite historical conditions that provided for spawning and rearing habitat for ESA-listed Chinook salmon, steelhead, and bull trout. Despite the small amount of quality habitat in the local area, these fish are regularly documented at the Lookingglass Creek fish hatchery weir located roughly three miles downstream of the project site.[1] No other ESA-listed or Oregon special-status fish species have been documented in Union County.[2] Non-listed fish species in the area include resident

[1] Pacific States Marine Fisheries Commission. "StreamNet Mapper." Accessed March 30, 2026. https://www.streamnet.org/home/data-maps/.; U.S. Fish and Wildlife Service. "Information for Planning and Consultation (IPaC)." Accessed March 30, 2026. https://ipac.ecosphere.fws.gov/.

[2] Oregon Department of Fish and Wildlife (ODFW), Wildlife Division. "Threatened, Endangered, and Candidate Fish and Wildlife Species." Accessed March 30, 2026. https://www.dfw.state.or.us/wildlife/diversity/species/threatened_endangered_candidate_list.asp.

populations of rainbow trout (*Oncorhynchus mykiss*), redband trout (*O. m. gairdneri*), and mountain whitefish (*Prosopium williamsoni*).

All project actions would be conducted subject to the conservation measures contained in the HIP4 BiOp. The HIP4 BiOp includes conservation measures designed to minimize negative effects on ESA-listed fish species, and thereby other species of non-listed fish which would also be present in the project area. All project actions were reviewed in accordance with the HIP4 BiOp review process during project development, which included proposal and design review by both USFWS and NMFS, to ensure consistency with the BiOp (HIP PNF#2026053). Conservation measures for fish include handling and salvage procedures, turbidity monitoring, and work area isolation.

Section 3.3.1.2.2.2 of the Programmatic EA analyzes the effects of channel reconstruction and stream restoration activities on aquatic species. Consistent with this section of the Programmatic EA, there would be short-term adverse effects on fish from project actions but also long-term benefits. In order to minimize the effects on fish, CTUIR would only conduct work in wetted areas during approved in-water work windows determined by the Oregon Department of Fish and Wildlife (ODFW). Additionally, the channel of Lookingglass Creek would be diverted into a temporary bypass channel prior to floodplain grading and channel fill activities. The bypass would provide fish passage through the project site during construction and allow CTUIR to fully implement channel filling and grading activities without substantially affecting any fish in the area. Nevertheless, there would still be short-term adverse effects on fish in the project area during construction. Noise and vibrations from machinery and human presence would be disruptive, as would handling fish during salvage while de-watering the existing stream channel. The combination of timing restrictions and mitigation measures would reduce these impacts. Other proposed actions, such as planting vegetation, moving the road, removing dilapidated structures, and constructing wooden habitat structures in the historical floodplain, would all occur in dry areas outside of the stream channels and have no effect on fish.

The long-term effects of the proposed actions on fish would be beneficial. The Lookingglass Creek channel is currently highly incised and channelized and as a result provides only a limited amount of high-quality habitat for fish. Restoring the historical conditions of the floodplain and channel would improve conditions for fish. The addition of new habitat forming wood debris structures, reconnecting with the historical floodplain, and reducing the stream velocity would provide more spawning and rearing habitat for fish.

In summary, there would be low short-term negative effects on fish from the proposed actions, mitigated by the use of conservation and mitigation measures, resulting in beneficial long-term effects. The overall effects on fish would therefore be low, consistent with the analysis in the Programmatic EA.

2. **Water Resources**

The effects of the proposed actions on water resources are consistent with the analysis in the Programmatic EA, Section 3.3.2, which concluded that the impacts on water resources would be low.

Section 3.3.2.2.1 of the Programmatic EA analyzes the effects of actions on water quantity. There would be low effects on overall water quantity from the proposed actions. There are no new diversions or water withdrawals proposed. However, there would be changes to the rate of downstream water flow as a result of the modified hydrology of Lookingglass Creek. The project would increase the interaction of the stream with its historical floodplain, which would retain more water in the valley floor, especially during late-spring and early-summer high flows. Reduced channelization would also reduce flow velocity through the reach, with hydraulic modeling estimating that maximum flow velocity would be reduced for spring median flows by roughly 32%. Retention of more water in the floodplain and reduced channel velocity would also increase groundwater saturation in the area, the effects of which would vary based on the season. While these represent changes from the current conditions, the overall volume of Lookingglass Creek would not be significantly altered, merely the rate at which the creek discharges downstream. There would accordingly be a low effect on water quantity, consistent with the Programmatic EA.

Section 3.3.2.2.2 of the Programmatic EA analyzes the effects of actions on water quality. The Lookingglass Creek project was designed consistently with BPA's HIP4 BiOp, which includes a number of measures for reducing and mitigating the short-term adverse effects of project actions on water quality. CTUIR would implement these measures during project implementation. Downstream turbidity monitoring would be conducted every two hours as required by the HIP4 BiOp, and work would cease if turbidity greatly exceeds background levels due to construction. Machinery would be stored and refueled only in designated and isolated staging areas to reduce the potential for spills into local waterbodies. Erosion and turbidity controls, such as staking straw wattles along riverbanks and staging areas, installing lined coffer dams for isolating instream work, and regular monitoring of both upstream and downstream conditions would mitigate the adverse effects of construction on water quality. Additionally, prior to filling in and grading the existing Lookingglass Creek channel and nearby floodplain, CTUIR would divert the stream through an excavated temporary bypass channel. The bypass channel would be bordered by staked straw wattles and a temporary berm to prevent stream flow from interacting with areas of the project site which are being graded, filled, and disturbed. By shifting the stream flow into the bypass channel, CTUIR would further reduce the potential for negative impacts on the water quality in Lookingglass Creek during project construction. There would likely be short-term increases in stream turbidity when construction is complete and disturbed areas are first re-wetted as fines and dust are flushed downstream. This turbidity plume would be temporary and mitigated by the implementation of mitigation measures prescribed in the HIP4 BiOp such as pre-washing and staged re-watering.

The long-term effects of the proposed actions would be to reduce the flow velocity of Lookingglass Creek and reconnect the river with its historical floodplain. The addition of wood debris and habitat structures would reduce the amount of scour the creek is currently undergoing. This would improve water quality in the river by retaining more sediment locally and reducing channel erosion. Increased floodplain and riparian vegetation would further improve these conditions. The short-term negative effects on water quality would be low through the implementation of mitigation measures, and beneficial in the long-term. The overall effects on water quality would therefore be low, consistent with the Programmatic EA.

In summary, there would be low effects on water quantity and low effects on water quality. The overall effects on water resources would therefore be low, consistent with the Programmatic EA.

3. **Vegetation**

The effects of the proposed actions on vegetation are consistent with the analysis in the Programmatic EA, Section 3.3.3, which concluded that there would be moderate short-term adverse impacts on vegetation and long-term positive effects, making the overall effects moderate.

No ESA-listed plant species have been documented at or near the Lookingglass Creek project site.[3] Oregon state-listed Oregon semaphore grass (*Pleuropogon oregonus*) has been recorded in Union County.[4] No known populations of semaphore grass are present at or near the Lookingglass Creek project site. Oregon semaphore grass is typically found in relatively wet riparian areas at medium-high elevations. The current deteriorated conditions, particularly the disconnection of the stream from its floodplain, make it highly unlikely that any semaphore grass is present at the Lookingglass Creek project site. There would therefore be no effect on Oregon semaphore grass from the proposed actions.

The proposed actions would have moderate short-term adverse effects on the vegetation in the project area. Plants present in areas which would be graded or excavated would be removed during construction. CTUIR would largely avoid stands of high-quality riparian vegetation in the upstream area of the project site. CTUIR would also salvage large plants and trees in disturbed areas and re-plant these plants following construction when possible. CTUIR would minimize the effects on local vegetation by limiting excavation to the smallest extent needed to accomplish the project goals. Nevertheless, due to

[3] USFWS. "IPaC."
[4] Oregon Department of Agriculture. "Listed Plants." Accessed March 31, 2026. https://www.oregon.gov/oda/plant-conservation/pages/listed-plants.aspx.

the nature of the work, the proposed actions would result in the removal of some amount of local vegetation in the short term. As a result, the overall short-term effects on vegetation during construction would be moderate.

The long-term effects on local vegetation would be beneficial. Reconnecting Lookingglass Creek with its historical floodplain would improve the conditions for riparian vegetation in the project area by increasing the amount of groundwater available for plants and the extent of annual inundation of the floodplain. The current channel would be replaced by a smaller low-flow channel that would regularly overflow its banks and inundate its floodplain during high flows in the spring and early summer. This would greatly expand the available area for riparian and wetland plants to colonize in the valley. CTUIR would plant native plants throughout the project site along the new stream channels, while also spreading native grass and forb seed mixtures in disturbed areas to jump-start the development of these new wetlands and riparian zones. Planted and seeded areas would be further monitored in future years to ensure that a self-sustaining ecosystem of riparian plants develops. CTUIR would engage in adaptive management to remove undesirable vegetation which attempts to colonize the area and re-plant areas with additional native species as needed. The long-term effects would therefore be beneficial to the quality and quantity of vegetation in the project area.

In summary, while the short-term adverse effects on local vegetation would be moderate, the long-term effects of the proposed actions would be beneficial to vegetation in the project area. The overall effects on vegetation would therefore be low-to-moderate, consistent with the Programmatic EA.

4. **Wetlands**

The effects of the proposed actions on wetlands are consistent with the analysis of the Programmatic EA, Section 3.3.4, which concluded that some wetlands would be temporarily damaged or destroyed by actions but would be restored, expanded, and improved over the long-term, making the overall impacts on wetlands low.

There are mapped wetlands present on the Lookingglass Creek project site, largely limited to the vegetated upstream portion along the stream channel near the western edge of the project site.[5] Additionally, CTUIR completed a wetland survey and delineation to identify any additional wetlands on the site. The wetland delineation identified three additional wetlands on the site, two of which are located around the manmade ponds near the center of the project site, and the last of which is near the stream channel at the southeastern corner of the project site. [6]

Actions are proposed which would occur within these wetlands and include earthmoving and excavation. CTUIR would obtain a Clean Water Act (CWA) permit for the proposed actions in these wetlands through the U.S. Army Corps of Engineers' Regional General Permit #6. Construction would not begin until this permit has been issued. CTUIR would adhere to mitigation measures and best practices required under the CWA permit to reduce impacts to wetlands. The manmade levees which surround the pools would be obliterated and the area re-graded to be more consistent with historical conditions on the property that were present before anthropogenic modification. Wetlands in these locations would be removed due to the grading of this area, but new wetlands could be created in this area as part of the project.

The long-term effects of the proposed actions would be to expand and improve these wetlands. Due to Lookingglass Creek's highly incised channel and extensive diking, the existing wetlands on the project site are largely limited to areas that are already inundated, with little potential for further expansion or improvement. By filling this channel and re-grading the floodplain, a larger portion of the valley floor would be seasonally inundated and could develop wetland vegetation. Hydraulic modeling of the proposed post-construction conditions estimate that more than 30 additional acres of floodplain would be inundated during median springtime flows, with up to 13 acres remaining inundated during the lower

[5] USFWS. "National Wetlands Inventory." Accessed April 1, 2026. https://www.fws.gov/program/national-wetlands-inventory/.
[6] Zatkos, Lauren, Amanda Bintliff and Joe Rudolph, *Lookingglass Creek Wetland Determination Final Technical Memorandum* (Wolf Water Resources, January 22, 2026).

summertime median flows. This would represent more than a doubling of area for potential wetlands to form on the property. CTUIR would further enhance these wetlands by planting and maintaining native wetland vegetation after construction is complete.

In summary, while the short-term effects on wetlands would include adverse impacts to existing wetlands, the long-term effects would be to expand the potential area of wetlands on the Lookingglass Creek property. The overall effects would therefore be low, consistent with the Programmatic EA.

5. **Wildlife**

The effects of the proposed actions on wildlife are consistent with the analysis in the Programmatic EA, Section 3.3.5, which concluded that short-term adverse effects on wildlife would be moderate for individuals disrupted by construction activities but would provide long-term benefits, making the overall impact on wildlife low.

ESA-listed North American wolverine (*Gulo gulo luscus*) may potentially be found in Union County.[7] It is highly unlikely that wolverine would be present at the project site during construction. The typical hunting and denning habitat for wolverine is cool regions with snowpack that persists late into the spring and early summer. In areas like eastern Oregon, this typically means that wolverine habitat is limited to boreal forest and subalpine tundra at high elevations. The Lookingglass Creek project site is, by contrast, a grass-dominated valley floor with an average elevation below 2,800 feet. As wolverine are very unlikely to be found near the project site during construction, there would be no effect on wolverine.

Oregon special-status wildlife species gray wolf (*Canis lupus*) is known to be present in Union County.[8] The Lookingglass Creek project site falls within the range of two monitored gray wolf packs; the Noregaard Pack and the Balloon Tree Pack. Both packs were most recently recorded in their ranges by ODFW personnel in April 2025.[9] While wolves are present in the region, it is highly unlikely that they would be found around the project site during construction. Wolves generally avoid human presence and noise, and no known denning sites are located near the project area. Noise from construction activities would likely deter wolves from regular presence near the project site during construction. Any wolves in the area would temporarily move to other parts of their range because of this disturbance. Following construction, wolves would once again be free to use the area, and there would be no long-term adverse effects. As a result, there would be no-to-mild effects on gray wolves during construction.

There would be similar low, short-term adverse effects on other non-ESA-listed wildlife present near the project site during construction. Wildlife would be disturbed by human presence and noise, particularly caused by construction machinery and equipment. These effects would be limited in duration and would end once the project has been fully constructed. Additionally, these disturbances would be limited to the valley floor project area, and wildlife outside of the valley would not be affected. Wildlife would temporarily move to other areas and would be free to return to the project area once construction is complete. The proposed actions would not include capturing, trapping, or forced relocation of wildlife.

The long-term effects of the Lookingglass Creek floodplain restoration project would be to improve conditions for wildlife in the area. Improving the integration of Lookingglass Creek with its historical floodplain would improve the quality and extent of vegetation in the area, providing additional opportunities for shade, resting habitat, and forage for local wildlife. However, the extent of these impacts would be relatively minor, as the primary focus of the project actions is to improve conditions for instream fish habitat.

In summary, there would be low short-term adverse effects on wildlife and low beneficial long-term effects. The overall effects on wildlife would therefore be low, consistent with the Programmatic EA.

[7] USFWS. "IPaC."
[8] ODFW. "Threatened, Endangered, and Candidate Fish and Wildlife Species."
[9] ODFW. "Wolves in Oregon." Accessed March 30, 2026. https://dfw.state.or.us/wolves/index.html.

6. **Geology and Soils**

The effects of the proposed actions on local geology and soils are consistent with the analysis in the Programmatic EA, Section 3.3.6, which concluded that the short-term adverse effects on geology and soils would range from moderate to high but would be mitigated by conservation measures included in the HIP4 BiOp. Given the implementation of the conservation measures and the expected beneficial long-term benefits from the proposed action, the overall effects would be moderate.

The proposed actions would require extensive earthmoving and excavation and, as a result, adversely affect soil at the project site. Sizable portions of the valley floor would be graded and cut, with these spoils used to modify the channel and floodplain of Lookingglass Creek. The project designs plan for nearly balanced cut and fill. Soil would not be removed from the site, merely relocated from one area to another within the project footprint. The majority of expected fill, more than two-thirds of the total, would be in and around the current channel of Lookingglass Creek. The remainder would be used to fill the manmade ponds and grade the floodplain. Roughly 28 total acres of the floodplain and Lookingglass Creek channel would be affected by floodplain and channel earthmoving actions.

Additional minor excavation would be necessary for planting vegetation; installing wood habitat structures throughout the floodplain; removing structure foundations; and removing the existing bridge crossing and constructing the new bridge. The excavation for these actions would be small and occur largely in areas that are already disturbed by floodplain grading. This excavation would not substantially increase the amount of disturbance beyond what is already occurring for floodplain and channel grading.

CTUIR would mitigate the effects of earthmoving on local geology and soils by employing the conservation measures included in the HIP4 BiOp and CWA permitting BMPs and conditions. Access to the project site would be via an existing private roadway and would not require any additional disturbance. CTUIR would establish marked temporary access routes that machinery would use for access while the road is being decommissioned and moved. Staging for equipment and materials would be in designated areas that are isolated from the work sites with measures like staked straw wattles and impermeable storage pads to reduce potential impacts to soil outside of the staging areas. Dust abatement measures like using water spray during excavation to reduce particulates and dust would be implemented if necessary. The long-term effects of the proposed actions, such as planting new vegetation and reconnecting Lookingglass Creek with its floodplain, would improve sediment and soil retention in the area and improve the quality of local soil.

In summary, the effects of the proposed actions on local soils and geology would be moderate in the short-term, mitigated by the use of mitigation measures, and low-to-moderate in the long term. Taken together, the overall impacts from project actions on soils and geology would therefore be moderate, consistent with the Programmatic EA.

7. **Transportation**

The effects of the proposed actions on transportation are consistent with the analysis in the Programmatic EA, Section 3.3.7, which concluded that the impacts to transportation would be low.

Access to the property is via a private road that runs to U.S. Forest Service Road 63, which borders the property to the east. While there would be an increase in traffic along the road from personnel, machinery, and supplies traveling to and from the project site during construction, this would not appreciably affect the usual traffic patterns or impact the public's overall use of the road. No actions are proposed that would require road closures or large-scale changes in traffic patterns on public roadways. The private access road on the property would be closed, decommissioned, and rebuilt along a new route during construction, but this road is not a public highway, nor does it lead to any private residences or businesses. Access to the property along this access road would once again be available once construction is complete.

In summary, the effects of the proposed actions on transportation would be low, consistent with the Programmatic EA.

8. **Land Use and Recreation**

The effects of the proposed actions on land use and recreation are consistent with the analysis in the Programmatic EA, Section 3.3.8, which stated that underlying land use practices of project sites would not be changed for most projects and concluded that the effects on recreation would be low.

The Lookingglass Creek project site is fully owned by CTUIR. CTUIR purchased the property with the goal of preserving it for fish and wildlife habitat and for use by Tribal members for recreation and exercising Tribal treaty rights to harvest fish. Historically, the property was used primarily for agriculture and ranching. The property has not been used for these purposes since CTUIR purchased it. The Lookingglass Creek project site would be temporarily closed to access during construction. This closure would not be permanent and would not change long-term ability of Tribal members to access the property for authorized purposes. Following construction, the property would once again be open for use, and no long-term changes to the current uses of the property are proposed.

In summary, there would be no long-term changes to land use and low short-term effects on recreation but no long-term changes. The overall effects would therefore be low, consistent with the conclusions of the Programmatic EA.

9. **Visual Resources**

The effects of the proposed action on the visual quality of the project area are consistent with the analysis in the Programmatic EA, Section 3.3.9, which concluded that the impacts to visual resources would be low but evaluated on a site-specific basis for each proposed project.

The current visual quality of the Lookingglass Creek project site is typical of the surrounding region. The project site is a valley floor that has been heavily affected by past agricultural practices. Much of the valley is grassland, broken up by a series of manmade levees, remnant agricultural ponds, and a limited number of dilapidated buildings. The proposed actions would change this visual quality by removing many of the manmade features and restoring historical vegetation and stream characteristics. While these changes would be notable, they would not be out of character with the visual quality of other similar valleys in the region and would be more consistent with the historical aesthetic quality of the project site before anthropogenic modification.

In summary, there would be changes to the current visual quality of the project site, but these changes would not be out of character for the region. The overall effects on visual resources would therefore be low, consistent with the conclusions of the Programmatic EA.

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

The effects of the proposed actions on air quality, noise, and public health and safety are consistent with the Programmatic EA, Section 3.3.10, which concluded that the impacts on air quality, noise, and public health and safety would be low.

Construction would temporarily affect local air quality and generate noise. Excavation and earthmoving would require the use of heavy construction machinery like excavators, bulldozers, and skid steers, which would generate exhaust and noise while in use. Dust and particulates from earthmoving would also affect local air quality. CTUIR would employ dust abatement measures contained in the HIP4 BiOp, such as spraying water to reduce the drift of particulates in the air, to mitigate these effects. Effects on air quality and noise would be temporary, limited to construction of the proposed actions, and would not affect areas beyond the local project site. No actions are proposed that would result in long-term changes to air quality or local noise levels. The effects of the proposed actions on air quality and noise would therefore be low, consistent with the Programmatic EA.

The proposed actions would have a low effect on public health and safety. The project area is located on Tribally owned land that is not accessible to the general public. Moreover, the proposed actions would not create any new long-term risks to public health and safety. The cabin being removed would not require decommissioning of any septic system or oil tanks, nor require extensive below-ground excavation which could disturb contaminants. Sheds which would be removed are built of corrugated

metal and wood. All debris would be properly disposed of at a local landfill. There would be risks to construction personnel on-site from general construction activities, such as risks from operating machinery. All personnel would use best practices to ensure worker safety during construction, including requiring that all equipment be operated by trained and licensed personnel. The project would also structure the implementation schedule to allow for construction to proceed at a deliberate and careful pace to reduce the danger to personnel that would be caused by a rushed implementation. The effects of the proposed actions on public health and safety would therefore be low, consistent with the Programmatic EA.

11. **Cultural Resources**

The effects of the proposed actions are consistent with the analysis in the Programmatic EA, Section 3.3.11, which concluded that the impacts to cultural resources from project actions would be low because cultural resources would be avoided by project construction and effects would be appropriately resolved through the process set forth in Section 106 of the National Historic Preservation Act (Section 106 process).

BPA initiated the Section 106 process for the Lookingglass Creek floodplain restoration project (BPA CR Project No. 2022 081) by identifying an area of potential effects (APE) for the project site, access roads, and staging areas. The APE was surveyed between 2023 and 2025. Sites of cultural and historic resources were identified in the APE during these surveys and evaluated for their eligibility for inclusion on the National Register of Historic Places. Project designs were modified to avoid cultural and historic sites and mitigation measures were developed through the Section 106 process to further reduce the potential for impacts to these sites.

On April 22, 2026, BPA determined that the proposed actions would have no adverse effect on historic properties and cultural resources. Consulting parties were the Oregon State Historic Preservation Office (SHPO), the Nez Perce Tribe, and CTUIR. On April 24, 2026, SHPO confirmed the receipt of the determination and the report on the surveys of the APE. No other responses were received. The consultation period ended on May 22, 2026.

To minimize the potential effects on cultural resources, CTUIR would implement mitigation measures developed through the Section 106 process. These measures include avoiding cultural resource sites with 30-meter buffers; limiting access to existing roads where they are remaining in-place and along only marked temporary access routes in locations where the road is being decommissioned; regularly inspecting access routes and placing protective matting if ruts begin to develop from vehicle passage; having a cultural monitor on-site during work that would occur within the buffer zones of cultural sites; and halting work in the event that cultural material is inadvertently discovered until BPA and consulting parties can assess the finds.

In summary, the effects on cultural resources would be low and minimized by employing mitigation measures developed through the Section 106 process, consistent with the Programmatic EA.

12. **Socioeconomics**

The effects of the proposed actions on socioeconomics are consistent with the analysis in the Programmatic EA, Section 3.3.13, which concluded that impacts on socioeconomics would be low to moderate.

The Lookingglass Creek project site is located entirely on land owned by CTUIR in northern Union County, Oregon. Union County has a total population of around 26,000, roughly half of which live within the city limits of La Grande, Oregon. The nearest population center to the Lookingglass Creek project site is the city of Elgin, Oregon, roughly 10 miles to the south of the project site. The area surrounding the project site is rural and isolated, with private residences spread sparsely throughout the area. The U.S. Forest Service maintains much of the land surrounding the Lookingglass Creek property. CTUIR does not maintain any permanent staffing or residential presence on the property.

The proposed actions would not require any new permanent employees or create any new permanent jobs. There would be no effect on housing or property appropriate for housing available for local populations. The structures on the property which would be removed are dilapidated and unsuitable for habitation. The short-term effects on local socioeconomics from construction staff hired to complete the proposed actions would be limited to minor local economic impacts from workers purchasing fuel, meals, and other products from local businesses in Elgin and the surrounding area. These effects would not persist beyond the construction of the project and would not result in substantial changes to the local socioeconomic conditions of the region.

In summary, the effects of the proposed actions on socioeconomics would be low, consistent with the Programmatic EA.

13. **Climate Change**

The effects of the proposed actions on climate change are consistent with the analysis in the Programmatic EA, Section 3.3.14, which concluded that impacts on climate change would be low.

Generation of greenhouse gases from the proposed actions would be limited to exhaust from construction machinery, such as excavators, skid steers, and trucks. These effects would be limited in duration to the construction of the proposed actions and would not result in any long-term generation of greenhouse gases. CTUIR would avoid running equipment when it is not in use to conserve fuel and reduce exhaust emissions. The short-term generation of greenhouse gases would further be offset to a limited degree by the ameliorating effects of the restored floodplain and increased vegetation in the area. More expansive riparian vegetation would sequester additional greenhouse gases than the current, limited riparian corridor and could reduce the impacts caused by exhaust from construction. These effects would be minor.

In summary, the effects of the proposed actions on climate change would be low in the short-term and have low beneficial long-term effects. The overall effects would therefore be low, consistent with the Programmatic EA.

Findings

BPA finds that the types of actions and the potential impacts related to the proposed Lookingglass Creek floodplain restoration project are consistent to those analyzed in the *Columbia River Basin Tributary Habitat Restoration Environmental Assessment* (DOE/EA-2126) and Finding of No Significant Impact. There are no substantial changes in the EA's Proposed Action and no substantial new circumstances or information about the significance of the adverse effects that bear on the analysis in the EA's Proposed Action or its impacts within the meaning of NEPA and the DOE NEPA Implementing Procedures. Therefore, no further NEPA analysis or documentation is required.

THOMAS DELORENZO
Digitally signed by THOMAS DELORENZO
Date: 2026.06.03 09:23:52 -07'00'

Thomas DeLorenzo
Environmental Policy Analyst

Concur:

KATEY GRANGE
Digitally signed by KATEY GRANGE
Date: 2026.06.03 09:28:17 -07'00'

Katey Grange
NEPA Compliance Officer

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