Supplement Analysis
for the
Columbia River Basin Tributary Habitat Restoration
Programmatic Environmental Assessment
(DOE/EA-2126/SA-51)

Lostine River Mile 5.7 Habitat Enhancements
BPA project number 2007-393-00
BPA contract number 84044 REL 26

Bonneville Power Administration
Department of Energy

Introduction

In December 2020, the Bonneville Power Administration (BPA) completed the Columbia River Basin Tributary Habitat Restoration Environmental Assessment (Programmatic EA)(DOE/EA-2126). The Programmatic EA analyzed the potential impacts of implementing tributary fish and wildlife restoration projects across the Columbia River Basin, ranging from fencing and planting to bridge construction, instream habitat improvements, and invasive plant treatments. These actions could be funded by BPA to mitigate for effects of the development and operation of the Federal Columbia River Power system on fish and wildlife.

Consistent with the Programmatic EA, this supplement analysis (SA) analyzes the proposed funding of the Nez Perce Tribe's (the Tribe) stream enhancement projects at River Mile 5.7 (RM5.7) of the Lostine River, including constructing new stream channels, removing bank armoring, planting new riparian vegetation, and installing wood habitat structures, with the goal of improving in-stream habitat for Endangered Species Act (ESA)-listed fish 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 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).

Project Background

The Lostine River is a 31.4-mile-long tributary of the Wallowa River in northeastern Oregon. The Wallowa River is a major tributary to Grande Ronde River, which collects runoff from across the southeastern corner of the Columbia Plateau and funnels it into the Columbia River. Fed year-round by snowmelt from the nearby Wallowa Mountains, the Lostine River runs northward from its headwaters at Minam Lake in the Wallowa-Whitman National Forest until it meets the Wallowa River roughly 13

miles northwest of the city of Enterprise, Oregon. Historically, the cool summertime water of the Lostine River provided extensive spawning and rearing habitat for a variety of anadromous fish species, including Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*O. kisutch*), steelhead (*O. mykiss*), and Pacific lamprey (*Entosphenus tridentatus*), as well as year-round habitat for bull trout (*Salvelinus confluentus*) and other resident fish and wildlife species.

The glaciated valley through which the Lostine River runs, nestled between the U-shaped arms of the Wallowa Mountains, has hosted human habitation since time immemorial. The first permanent non-indigenous settlers to the area began arriving in the late 19th century, quickly transforming the valley into a patchwork of agricultural fields and cattle ranches. These settlers took advantage of the ample springtime water available in streams like the Lostine River that crisscrossed the relatively flat floor of the valley and extensively modified to the Lostine River. The river was straightened, and numerous irrigation diversions were constructed along its length to support the burgeoning local population and industry.

By the middle of the 20th century, these changes had profoundly affected the river, its nearby habitat, and the fish and wildlife that relied on that habitat. Bank armoring and channelization resulted in a quick-flowing, laterally confined stream that no longer supported the extensive riparian vegetation and multi-threaded channels in which salmonids spawn and rear, push-up dams and constructed diversions created passage barriers for migrating fish, and over-withdrawals for irrigation reduced the flow of the stream during their springtime migrations. Coho salmon and lamprey were completely extirpated from the Lostine River by the middle of the century, while annual run counts of Chinook barely numbered in the low double-digits by the mid-1990s.

In the late 1990s, government agencies, local non-governmental organizations, and Tribes began to develop plans for habitat restoration throughout the Grande Ronde basin, including the Lostine River, to restore the historical conditions and expand habitat for salmonids, with the long-term goal of restoring their annual runs and reintroducing the species which had been extirpated. The Tribe has conducted numerous habitat restoration and fish passage improvement projects along the Lostine River as part of these efforts. The Lostine RM5.7 project is the latest of the Tribe's projects in this watershed.

The project seeks to restore a portion of the mainstem channel and floodplain of the Lostine River near the city of Lostine, Oregon. The project site is located on 13.5 acres of privately-owned land directly to the west of the city. The Lostine River runs northward along the eastern edge of this area alongside a sheer bluff that separates it from the city. The river in this area has been highly channelized and confined with extensive rock riprap installed along the banks. This channelization has completely detached the river from its historic floodplain along the western bank of the river. This historical floodplain was extensively grazed by cattle rand is largely fallow grass fields. Remnant scars and depressions throughout the floodplain imply that the area used to host a multi-threaded riparian corridor, but the current conditions are not conducive to developing this kind of extensive habitat.

Proposed Actions

The Tribe would restore 13.5 acres of the Lostine River's floodplain by excavating new secondary channels, removing bank armoring, regrading the floodplain, installing woody habitat structures, and planting new riparian vegetation.

Project staging would begin in summer of 2024. A staging area located in the uplands of the project site would be established for storage of materials and equipment. The staging area and access routes through the site would be lined with straw wattles anchored into the ground to reduce erosion and reduce the potential for spills into the river. The site would be accessed via a temporary access road which would run to the closest public road, Wallowa Street, north of the project area.
Project implementation would begin once the local in-water work window prescribed by the Oregon Department of Fish and Wildlife (ODFW) opens in late July. This period also coincides with the typical lowest annual flows of the river. The current channel for the Lostine River runs along the eastern edge of the project area, hewing to a steep bluff to the east. Bank armoring and small levees along the western bank of the river further contribute to the current channel structure. To improve these conditions, the Tribe would reconstruct the channel into a multi-threaded complex. A new secondary channel would be excavated in the historic floodplain along the western bank of the current channel. This new channel would remain fully inundated year-round and function as a co-dominant channel by splitting the river's flow into both channels. By splitting the main flow into two channels, the velocity and depth of the river would be reduced, encouraging interaction with the historical floodplain to develop more fish habitat. The Tribe would also contour the floodplain to encourage the development of seasonal side channels that would activate during higher stream flows in the spring. In total, roughly 2,000 feet of the existing channel would be modified.

Concurrently with the channel construction, the Tribe would remove the existing bank armoring and re-grade the levees that are confining the current river channel. Rocks and cobble removed from these sections would be sorted and the smaller pieces used for establishing in-channel roughness and complexity, with larger pieces used for out-of-channel fill. The Tribe would isolate these sections of the banks during implementation using cofferdams constructed out of polypropylene woven fabric bulk bags filled with washed cobble. These bags would be placed alongside each other and draped with an impermeable plastic sheet secured with sandbags to form a barrier and allow for work along the banks of the river without impacting the water.

Spoils from the excavation would be retained on-site. This soil would be used for re-grading and filling scoured areas to restore the topography of the area to its historical conditions. Spoils would be sorted into alluvial soils (gravel, cobble, clay) and topsoil and moved to appropriate areas for each type of soil.

Alluvial soil would be used to fill portions of the current channel of the Lostine River. The soil would be used to restore a more natural slope and reduce the depth of the channel. Larger cobble and gravel gathered would be placed in the river to increase the roughness of the channel. This fill would help increase interaction with the floodplain, encourage natural stream migration, and reduce the flow velocity of the river to help retain sediment and habitat forming material. Additional soil would be placed along the section of the main channel which runs alongside the bluff to the east of the project area. This section of the channel is heavily scouring the channel walls and the addition of cobble and clay would restore a more natural slope to the banks and reduce this scour. Some of the excavated alluvial soil would also be used to fill depressions in the northwestern corner of the project area. These depressions were excavated sometime before 2017 to form a cattle watering pond and are roughly 10-15 feet deeper than the rest of the floodplain in the area.

Topsoil would be retained for use in areas in which vegetation would be planted. This soil would be used to fill around new plantings. Disturbed areas used for staging and access roads would also be covered with topsoil spoils prior to re-seeding.

Along the channels, the Tribe would install habitat forming structures consisting of tree trunks, rootwads, vegetation, and racking material. These structures would be placed throughout the channels and floodplain to create scour pools, provide shade and predation protection, and increase the roughness and complexity of the floodplain during high flows when salmonids are most often using the area for migration and rearing.
Engineered wood apex jams would be constructed by first erecting 6 to 10 logs vertically in a roughly triangular pattern. These logs would be used to secure between 5 and 10 horizontally laid logs and rootwads extending into the channel. The area between these logs would be filled with small pieces of racking wood, vegetative cuttings like willow (*Salix*) for stability, and slash fill. The structures would then be backfilled into the banks to reduce movement. Roughly a dozen of these structures would be constructed, placed at locations in the channel in which high velocity scour is expected to occur in order to reduce the stream velocity and catch and retain sediment and small racking material flowing down the river.

Additional wood habitat structures would be placed throughout the channels and floodplain. The majority of these structures would consist of individual logs and rootwads placed along the sides of channels. The logs would be partially buried in the banks to anchor them. Depending on the length of the logs available, some channel-spanning trees would also be placed throughout the area. Full trees with branches would also be used where appropriate. Between 30 and 40 of these logs and trees would be placed throughout the channels, with the majority concentrated along the new co-dominant channel and floodplain channel complex in the western area of the project site. These wood structures would help reduce flow velocity, retain sediment and racking material, and provide cover and habitat for fish in the area. Additional trees would be spread throughout the floodplain to catch water and form habitat pools during high flow periods when the floodplain is inundated.

The Tribe would also plant vegetation throughout the project area. A limited number of large trees are present along the banks of the river. These trees would largely be left in-place and project actions would engineer around them. Additional trees would be planted throughout the new riparian corridor for both the current river channel and the new engineered co-dominant channel. Interspersed with these trees, the Tribe would plant a variety of native local forbs and bushes to provide forage, cover, and habitat for fish and wildlife. In upland areas, the Tribe would spread native grass and forb seed.

Following construction, disturbed areas would be restored to current conditions. Access roads and the staging area would be spread with topsoil and seeded with a native grass and forb mix. Disturbed areas outside the access routes would be similarly treated as needed. All planting would be completed by the end of November. These areas would be monitored in future years and adaptive vegetation management programs continued until the area has developed a self-sustaining local ecosystem. This would include removal of any invasive and noxious weeds which colonize the area and outcompete desirable vegetation. Larger plantings which do not survive would be removed and re-planted, and areas with poor growth or in which weeds are removed would be re-seeded and re-planted as needed. Habitat structures and the side channels would also be regularly surveyed to document how well they are fulfilling the objectives of the project.

Figures:

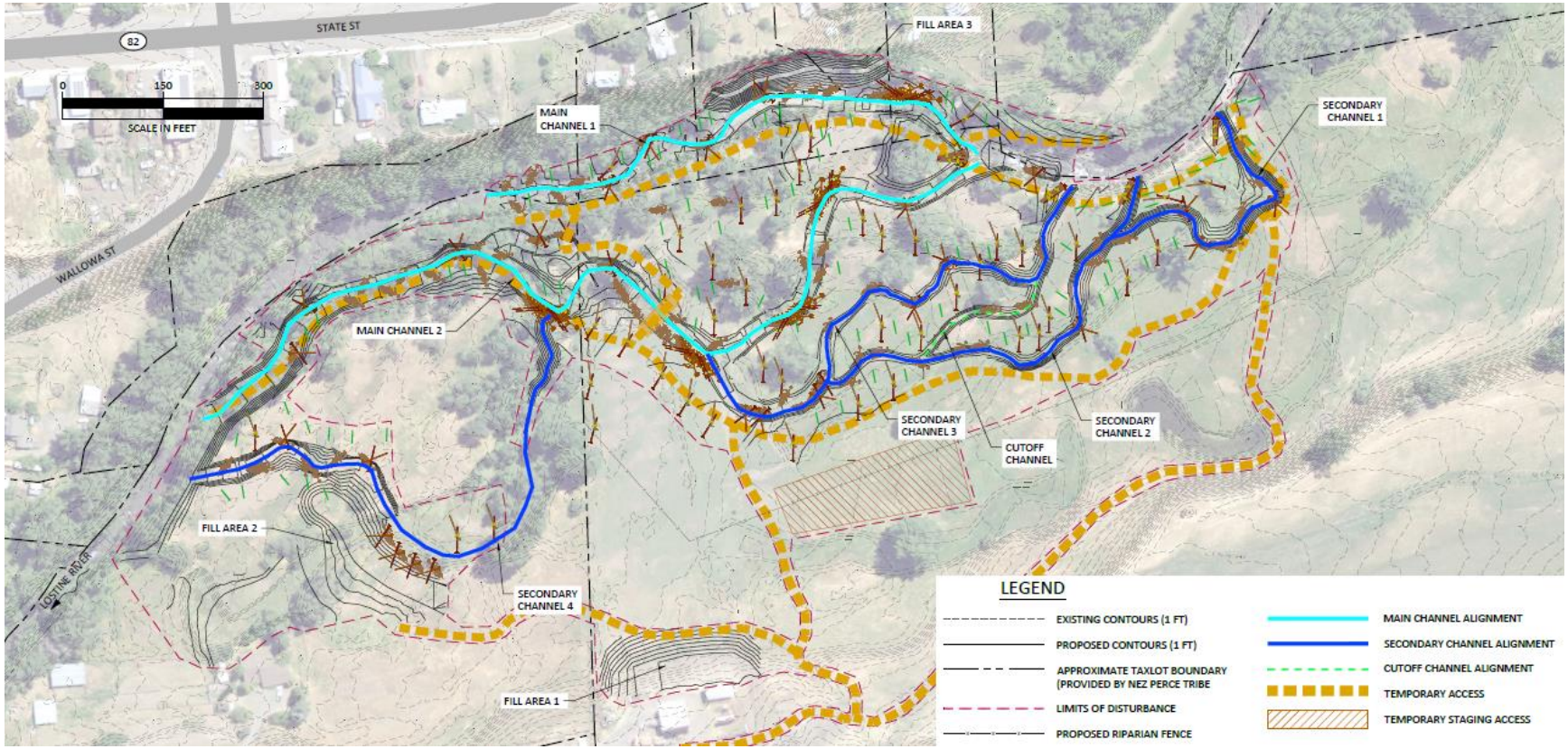

Figure 1: Overview of the project area showing the main channel, new secondary channels, and access and staging.

Environmental Effects

The typical environmental impacts associated with the project actions contemplated by the Programmatic EA are described in Chapter 3 of the EA and summarized in this document. Below is a description of the potential site-specific impacts of the Lostine RM5.7 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 the adverse effects on fish would be moderate in the short-term but provide beneficial long-term improvements, making the overall impacts to fish low.

The Lostine River currently hosts spawning and rearing habitat for ESA-listed Chinook salmon, steelhead, and bull trout, and historically provided similar habitat for Pacific lamprey and coho salmon.[1] No separately listed Oregon Conservation Strategy species of fish have been documented in Wallowa County.[2] Non-listed fish species observed in the project area include resident rainbow trout (*O. mykiss*). The project actions are aimed at improving the habitat for these fish species and would have long-term beneficial effects.

All project actions would be conducted subject to the mitigation measures prescribed in BPA's Habitat Improvement Program Programmatic Biological Opinion (HIP4 BiOp).[3] The HIP4 BiOp includes mitigation measures designed to minimize impacts to Endangered Species Act (ESA)-listed fish species, and thereby most other species of fish which would be present in the project area. All project actions were reviewed in accordance with the HIP4 BiOp review process during project development (HIP PNF#2024012). The Tribe would follow both the general project and species-specific conservation measures included in the HIP4 BiOp when implementing the project, and any deviations from the conservation measures during implementation would be reported promptly to BPA Environmental Compliance staff.

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, the short-term effects on fish from project actions would be outweighed by the long-term benefits. In order to minimize effects of fish to the greatest extent practicable, the Tribe would only conduct work in the mainstem of the Lostine River during the local in-water work window prescribed by ODFW. This window, running from the middle of July through the end of August, is timed to avoid spawning and migration of salmonids and is the time when there are typically the fewest number of fish in the area. Additionally, the Tribe would isolate any in-water work areas from the main flow of the Lostine River using cofferdams constructed out of polypropylene woven fabric bulk bags filled with washed cobble. These bags would be placed alongside each other and draped with an impermeable plastic sheet secured with sandbags to fully isolate work areas from the stream and prevent fish entry into work areas. Salvage in these isolation pockets would be conducted to remove any fish prior to dewatering. These isolation areas would not span the entire river channel and provide for fish passage alongside the isolation areas. Negative effects on fish from these actions would include stress caused by isolation and handling, as

[1] PSMFC 2024; USFWS 2024a.
[2] ODFW 2024a.
[3] NMFS 2020; USFWS 2020.

well as temporary loss of use of some sections of the river. However, the combination of timing restrictions and mitigation measures would reduce these impacts as much as possible, and would be consistent with the short-term effects on fish analyzed in Section 3.3.1.2.1 of the Programmatic EA.

Additional turbidity in the stream may occur when newly excavated areas are inundated for the first time and the loose, top layer of soil is flushed downstream. While this turbidity would negatively affect fish in the area, it would be short in duration, limited to the first re-watering of the new channels. The sediment would be expected to fall out from the river within short order and would produce no long-term turbidity increases. Moreover, the HIP4 BiOp includes pre-washing and staged re-watering mitigation measures which would be employed to reduce the impacts of this sediment flush to the greatest extent possible. The negative effects on fish from re-watering sediment flushes would therefore be low, consistent with the short-term effects on fish analyzed in the Programmatic EA.

Other project actions, such as planting vegetation and installing woody habitat structures in the floodplain complex, would all occur in dry areas outside of the mainstem of the Lostine River and have no effect on fish during implementation.

The long-term effects on fish from project actions would be beneficial. Project actions are aimed at improving the local habitat conditions by reducing the flow velocity of the Lostine River, improving the interaction between the river and its floodplain, and creating additional habitat features throughout the floodplain complex, all of which would improve conditions for fish. The additional low-velocity side channels and habitat forming structures would provide rearing and resting habitat for fish species that is currently not present in this section of the Lostine River.

In summary, there would be moderate short-term negative effects on fish from some project actions, mitigated to the greatest extent possible, and beneficial long-term effects. The overall effects on fish would therefore be low, consistent with the conclusions of the Programmatic EA.

2. **Wildlife**

The effects of the proposed actions on wildlife are consistent with the analysis in the Programmatic EA. Section 3.3.5 concluded that adverse effects on wildlife would be moderate to high for individuals that are harmed or killed by construction activities, but would be lower for larger animals that may only be displaced from habitats rendered unsuitable for occupancy for a period of time in the short-term, and that the long-term effects would be beneficial, making the overall impacts to wildlife low.

The presence of ESA-listed gray wolf (*Canis lupus*) has been well documented in Wallowa County.[4] The Lostine RM5.7 project area lies near the edge of the ODFW-monitored Area of Known Wolf Activity of the Bear Creek wolf pack.[5] However, gray wolves typically avoid areas with extensive human presence and noise and prefer the remote uplands far from these disturbances. The project area is located adjacent to the city of Lostine and is surrounded by private residences. While it is possible that there may be wolves in this section of Wallowa County, it is extremely unlikely that wolves would be found regularly in the project area because of the local human presence. Moreover, in the unlikely event that there are any wolves that are regularly roaming the project area, they would relocate to avoid the area

[4] USFWS 2024a.
[5] ODFW 2024b.

during implementation due to noise caused by construction equipment. Project actions are therefore not likely to adversely affect gray wolves. The effects of project actions on gray wolves and this determination are consistent with the Not Likely to Adversely Affect determination in the HIP4 BiOp (HIP PNF#2024012).[6] No other Oregon Conservation Strategy species not listed under the ESA are present in Wallowa County.[7]

There would be minor negative effects on any wildlife present at the project site during implementation. Wildlife would be disturbed by human presence and noise, particularly that caused by construction machinery and equipment. These effects would be limited in duration to the time it takes to implement project actions. Additionally, the scope of these effects would be limited to the roughly thirteen-acre project site and would have no effect on wildlife outside the project area. Any wildlife present in the project area would likely relocate to outside the project area during implementation due to this disturbance but would not otherwise be affected. The project would not require capturing, trapping, or relocating animals. Project actions are also scheduled for the late summer through early winter, outside of the nesting season for most bird species.

The long-term effects of project actions would have mild positive effects on wildlife habitat in the area. Improving the integration of the Lostine River with its local floodplain would improve the quality and extent of vegetation in the area, which would provide additional opportunities for shade, resting habitat, and forage for wildlife. However, these effects would be low. Project actions are aimed at improving in-stream habitat for fish species and wildlife habitat improvements are not a primary goal of this project. Any improvements to wildlife habitat would be incidental.

In summary, the negative effects on wildlife from project actions would be low in the short-term and mildly beneficial in the long-term. The overall effects on wildlife from project actions would therefore be low, consistent with the conclusions of the Programmatic EA.

3. **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 concludes that the adverse 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 no new water withdrawals planned as part of the proposed action, but there would be a low effect on overall water quantity as a result of the improved hydrology which would result from the Lostine RM5.7 project. The project would cause changes to the current hydrology of the Lostine River by re-integrating the historical floodplain and reducing the velocity of the mainstem of the river. While these changes would potentially allow the area to retain more water and reduce channel velocity, they would not alter the overall volume of the Lostine River. There would accordingly be a low effect on water quantity, consistent with the conclusions of the Programmatic EA.

Section 3.3.2.2.2 of the Programmatic EA analyzes the effects on water quality. The Lostine River experiences average flows at the project site between approximately 850 cubic feet per second (cfs)

[6] NMFS 2020; USFWS 2020.
[7] ODFW 2024a.

during high flows in late spring and 50 cfs during low flows in the autumn and winter. Project actions would take placing during the late summer and early autumn when the river flow is close to its nadir. This would allow a large amount of work in and near the channel to be done in areas which are seasonally dry and reduce the potential impacts to water quality during implementation. In areas which are inundated during implementation, the Tribe would minimize impacts to water quality caused by turbidity to the greatest extent possible. The Tribe would isolate work areas using bulk bag cofferdams sheathed in impermeable plastic sheets to prevent disturbed sediments in the work area from entering into the river. Additional sediment retention and spill prevention measures, such as straw wattles placed along access routes and staging areas to prevent erosion and spills into the river channel, would also be implemented. Stream turbidity would be monitored downstream from project actions consistent with the requirements of the HIP4 BiOp. In the event of a turbidity plume, work would cease until the turbidity subsided, the duration and scope of the plume recorded, and remedial action taken to prevent additional sediment plumes from occurring. There would be a short-term turbidity plume caused by a sediment flush as newly disturbed and excavated areas are re-watered, but this would be short in duration and minimized to the greatest practicable extent with mitigation measures prescribed in the HIP4 BiOp such as pre-washing and staged re-watering.

The long-term effects of project actions would be to reduce the flow velocity of the Lostine River in the area and re-integrate the river with its floodplain. The addition of woody habitat structures and a less-incised channel would slow the velocity of the river, reducing the extensive scour currently being experienced at the project site. These long-term effects would improve water quality in the river by retaining sediment and reducing channel erosion and incision.

As a result, the overall negative effects on water quality would be low in the short-term and beneficial in the long-term. The overall effects on water quality would be low, consistent with the conclusions of the Programmatic EA.

4. **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 short-term impacts on vegetation would be moderate but outweighed by long-term positive effects, making the overall effects moderate.

No ESA-listed plant species are found in the project area.[8] The presence of Oregon Conservation Strategy species Greenman's desert parsley (*Lomatium greenmanii*) has been documented in Wallowa County.[9] All currently known populations of desert parsley are located in the Wallowa-Whitman National Forest outside of the project area. Moreover, desert parsley, as the name suggests, is typically only found in dry subalpine deserts, and is extremely unlikely to be present in the wet, riparian project area far below its normal elevation range. Project actions would therefore have no effect on Greenman's desert parsley.

Project actions would have moderate short-term adverse effects on vegetation currently present in the project area, though the Tribe would mitigate these effects to the greatest extent possible by avoiding large trees and salvaging vegetation for use in other areas of the floodplain. Complex riparian vegetation

[8] USFWS 2024a.
[9] ODA 2024.

along this section of the Lostine River is fairly limited due to the highly incised channel, extensive riprap bank armoring, and historical cattle grazing. Much of the area is dominated by grass, with individual black cottonwood (*Populus trichocarpa*) trees interspersed throughout. These mature trees would be avoided by project actions and left in-place whenever possible. Trees which are in areas that are planned to be excavated would be salvaged and relocated to line the new channel locations when possible or used for building in-stream habitat structures when salvage is not possible. Any local shrubs would also be similarly salvaged or used as slash fill in habitat structures. Grass in areas which would be excavated would be removed. The Tribe would minimize the effects on local vegetation as much as possible by only removing vegetation when required for project actions. No chemical (herbicide) removal of vegetation would occur during construction and no vegetation outside of the planned excavation areas would be removed. However, due to the nature of the work, these actions would still result in the destruction of some amount of local vegetation, causing severe effects to individual plants which are removed and moderate negative effects to the overall vegetation in the area.

The long-term effects on local vegetation would be beneficial and outweigh these short-term negative impacts. Re-integration of the Lostine River with its historical floodplain would improve the riparian vegetation in the project area. The current, highly incised and armored channel would be reconstructed into a multi-threaded channel that would retain more water and fully interact with the local floodplain. This would expand the available area for riparian plants to colonize. The Tribe would plant a variety of native species of trees and shrubs throughout this new riparian area, including red osier dogwood (*Cornus sericea*), black hawthorn (*Crataegus douglasii*), and blue elderberry (*Sambucus cerulea*), in addition to saplings of black cottonwood. Native grass and forb seed mix would be spread between these plantings to further establish a complex local riparian ecosystem and reduce the possibility of colonization by invasive and undesirable species of vegetation. Upland areas disturbed by access and staging would be similarly reseeded and planted with native species.

In future years, the Tribe would monitor areas planted following project actions and engage in adaptive management of the area to ensure the establishment of a self-sustaining ecosystem of desirable vegetation. Adaptive management actions funded or subject to approval by BPA, including the use of chemical (herbicide) and physical removal of undesirable vegetation, would undergo separate BPA environmental review as needed.

In summary, while the short-term effects on vegetation would require the removal of some individual plants and be moderately negative, the long-term effects would be beneficial to vegetation in the project area. The overall effects on vegetation would therefore be moderate, consistent with the conclusions of the Programmatic EA.

5. **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 the overall impacts on wetlands would be low.

There are no mapped wetlands present along the Lostine River at the project site.[10] The current riprap bank armoring and channelization of the river has prevented the formation of wetlands in the riparian corridor of the river.

[10] USFWS 2024b.

The Tribe completed a wetland survey and delineation of the upland areas of the project site in 2020. Three depressions were identified which retain enough water during wet seasons to form ponds with the potential to form emergent wetlands along their banks. These areas would be avoided by project actions. Access and staging areas were routed to avoid these potential wetlands to the greatest extent possible. In addition, any access or staging areas near these wetlands would have straw wattles placed along the edges to prevent erosion and spills into the wetlands. No excavation, planting, or other actions would occur in these areas.

Project actions would have positive impacts on wetlands in the area. Removal of bank armoring, reduction in flow velocity, and re-integration with the floodplain would potentially establish new wetlands along the banks of the Lostine River. Vegetation planted in these areas would include native wetland species to help establish a complex and self-sustaining riparian ecosystem.

In summary, there would be no effects on wetlands in the short-term and potentially beneficial effects in the long-term. The overall impacts from project actions on wetlands would therefore be low, consistent with the conclusions of the Programmatic EA.

6. **Geology and Soils**

The effects of the proposed actions on geology and soils are consistent with the analysis in the Programmatic EA, Section 3.3.6, which concluded that the short-term effects on geology and soils would range from moderate to high but be outweighed by long-term positive effects and mitigated by conservation measures, making the overall effects moderate.

Project actions would require earthmoving and would, as a result, affect soil at the project site. Given the nature of floodplain restoration and channel reconstruction, soil would necessarily be excavated, moved, and deposited across the project site. The project designs plan for balanced cut and fill, requiring no soils excavated to be removed from the site, merely relocated to other areas within the project footprint. The largest areas of excavation would be the floodplain and side channel complex. The secondary channel would be excavated and engineered by removing soil from the designed path of the channel, with other depressions and re-grading in the area to form habitat pools and seasonal wetlands excavating along this channel. Spoils from this excavation would be used to fill the cattle pond in the northwestern corner of the project site, as well as re-contour the channel of the river. Additional excavation would be needed to install the wooden in-stream habitat structures. Depressions in the locations of these habitat structures would be excavated, and the wood placed in the depressions. The soil would then be backfilled over the structures to ballast them into place. Ground disturbance would be needed to plant larger trees and shrubs, which would have holes dug large enough for their root bundles and then backfilled. The Tribe would seek to minimize the effects on geology and soils in the project area to the greatest extent possible. Excavation would be limited to the smallest area needed to accomplish project goals and would not extend beyond the local floodplain. All work would take place during the driest part of the year so that the soil is as compacted as possible and to limit the potential of large-scale runoff or washouts during rain. Disturbed areas would be re-seeded with native grass and forb seed following construction to re-establish ground cover and reduce long-term erosion. The short-term effects on geology and soils from project implementation, due to the nature of the actions, would therefore be high, but mitigation measures would reduce these impacts to the greatest extent possible.

In addition to the soil disturbance caused by project implementation actions, human presence and machinery would affect the top layer of soil in the project area. Equipment and machinery used for project actions would compress and disturb the top layer of the ground while moving throughout the project area. The Tribe would mitigate these effects as much as possible by limiting equipment movement to established access routes and staging areas. Access to the project site would be along a set route from the closest permanent road along the shortest practicable route to the main staging area. Straw wattles would be placed alongside access routes in order to reduce erosion into undisturbed areas and keep equipment on demarcated paths. Temporary bridges would be installed for crossing the river when needed to reduce erosion into the stream. These disturbed areas would be re-seeded immediately after project implementation is complete with grass and forb seed to restore vegetation and re-establish ground cover to reduce long-term erosion. Ground disturbance from equipment, machinery, and human presence is therefore expected to be mild and highly localized.

Although there would be unavoidable short-term effects on geology and soils as a result of project actions, the project's long-term effects would benefit the soil quality in the area. The current channel of the Lostine River is highly incised. The high flow velocity in the river and extensive riprap bank armoring has scoured the channel and limited complex riparian vegetation growth in the area. Project actions would reduce the velocity of the river and re-integrate it with the local floodplain. This more extensive riparian vegetation and reduced channel velocity would help retain sediment and reduce erosion in the area. The long-term effects of project actions on soil and geology would therefore be positive.

In summary, the effects of the proposed actions on soil and geology would likely be high in the short-term, mitigated to the greatest extent possible. The overall impacts from project actions on soils and geology would therefore be moderate, consistent with the conclusions of the Programmatic EA. There would be a positive impact to soils in the long term.

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.

The project area is located on private land in rural Oregon with no public rights-of-way or roads on the property. The closest public road, Wallowa Street, crosses the Lostine River roughly 500 feet downstream (north) of the project area. Access to this road would not be impacted by project actions. There would be minor increases in local traffic along this road as staff commute to and from the project during the implementation, along with occasional deliveries of supplies and equipment. These effects would be very minor, require no short-term road closures or changes in traffic patterns, and cause no long-term disruption to the use of this road by the public. The Lostine River is not typically used for transportation of goods or persons, especially during the project period when the average river flow volume is near its lowest, and work in the river would have no effect on transportation as a result.

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

8. **Land Use and Recreation**

The effects of the proposed actions on land use and recreation are consistent with the analysis of 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 to recreation would be low.

There would be no change to the underlying land use of the project site as a result of the Lostine RM5.7 project. The project site is wholly located on private land and ownership would not change. Landowners would not be able to access the site during implementation, but this disruption would only be temporary and was considered in the Tribe's agreements with the landowners. While the property was used for cattle grazing in the past, an exclusion fence was constructed on the property some time in the last twenty years and no grazing has been permitted since its construction. The long-term use of the land would therefore not change as a result of the project.

While there would be a short-term disruption to the ability of the landowners to access the property for recreation during project implementation, this disruption would be temporary and was considered in the Tribe's agreements with the landowners. The project area is located on private property and is not open to the public to use for recreation. No long-term changes to the use of the property for the landowner's recreation would occur as a result of project actions.

In summary, there would be no effect on land use practices and the effects on recreation would be low, consistent with the conclusions of the Programmatic EA.

9. **Visual Resources**

The effects of the proposed actions on the local 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 project.

The current visual condition of the project site is fairly typical for the surrounding area. The area lacks complex vegetation due to the extensive historical agriculture and ranching activity which was common across the valley. The remaining vegetation in the area is largely limited to grass and small forbs, with individual stands of trees intermittently spaced throughout the riparian corridor. The Lostine River is highly incised and the banks covered with rock riprap at the project area, resulting in a simplistic channel. Project actions would have some effect on this visual quality. Re-integration of the Lostine River with its floodplain would establish a more extensive riparian ecosystem in the area. This would increase tree and forb cover in the area. These effects would restore the historical visual quality of the area prior to the modifications to the river and cattle grazing activities which caused the current conditions. The project site is located on private property and is not publicly accessible, and, as a result, these changes to the area's visual quality would not affect the broader public's aesthetic enjoyment of the area.

In summary, the effects of the proposed actions on the visual quality of the project area would 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 analysis in the Programmatic EA, Section 3.3.10, which concluded that the impacts to air quality, noise, and public health and safety would be low.

Project implementation would temporarily affect the local air quality and generate noise in the project area. Excavation and earthmoving would require the use of heavy construction machinery like excavators, which would generate exhaust and noise while in use. Other equipment, such as trucks and

skid steers, would also contribute to these effects. Dust caused by earthmoving would also be produced. These effects would be temporary in duration and limited to the project site and nearby area. No project actions would result in long-term changes to air quality or increases in noise. In summary, the effects of the proposed actions on air quality and noise would therefore be low, consistent with the conclusions of the Programmatic EA.

Project actions would have little effect on public health and safety. The project area is located on private land and is not typically accessible to the public. Members of the public would not be permitted in the project area during implementation. The Tribe would include signs notifying the public of active construction and excluding them from access. The landowners would likewise be excluded from the property during implementation. The long-term effects of the project would not create any new risks to public health and safety. There may be some risks to implementation staff from general construction activities, such as from machinery and materials. All personnel would use best practices to ensure worker safety during construction. All equipment would be operated by trained and licensed personnel. The implementation schedule is structured to allow for construction to proceed at a deliberate and careful pace to reduce the danger of injury from rushed implementation. In summary, the effects of the proposed actions on public health and safety would be low, consistent with the conclusions of the Programmatic EA.

11. **Cultural Resources**

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

The effects of the proposed project actions on cultural and historic resources were reviewed under the Section 106 process. The Tribe conducted intensive field surveys for cultural and historic resources of the Area of Potential Effects (APE) for the project site, staging areas, and access roads in 2020 and 2022. The results of these surveys, along with background research into past surveys and the locations of known cultural and historic resources in and near the APE, were compiled into two reports and submitted to BPA cultural resources staff for review. One cultural resource site was identified in the APE. This site would be flagged and avoided with a 30-foot buffer during project implementation. Additionally, no project actions were proposed in the final designs near this site to minimize the potential for disruption.

On February 23, 2024, BPA initiated consultation with the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), and the Oregon State Historic Preservation Office (SHPO) and made a determination that no historic properties would be affected by project actions. On February 23, 2024, the Nez Perce Tribe concurred with BPA's determination. On March 21, 2024, SHPO disagreed with BPA's determination and proposed a determination of no adverse effect on historic properties. CTUIR did not respond. The 30-day consultation period ended on March 25, 2024, with no other responses received. BPA cultural resources staff met with SHPO staff on March 27, 2024, to discuss SHPO's disagreement with BPA's determination. After discussing the proposed avoidance measures for the identified cultural resource site in the APE, SHPO concurred with BPA's determination that no historic properties would be affected by project actions.

12. **Socioeconomics and Environmental Justice**

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

The project is located entirely on privately owned property in Wallowa County, Oregon. Wallowa County is highly rural, with a total population of around 7,500 and a population density of roughly 2.2 people per square mile.[11] The project site is located just west of Lostine, the fourth-largest city in the county with a population of 241. Despite the proximity to this local population center, the project site is geographically separated from the city core by a sheer bluff that runs along the eastern edge of the project site. The project site is thus isolated from and less developed than the neighboring town. The project site does not contain any built permanent structures, residences, or businesses.

Project actions would not require any new permanent employees or create any new permanent jobs. No changes to local housing on or near the project site would require individuals to leave the area or relocate within it. There would be some short-term cash infusions into the local economy due to workers for project implementation purchasing fuel, meals, and other products from local businesses. However, these effects would be minor and limited in duration to the implementation of the project and cease once the project work has been completed. Additionally, there are no environmental justice populations present on the private land of the project site.

In summary, the effects of the proposed actions on socioeconomics would be low, and there would be no effects to and environmental justice populations. These effects are consistent with the conclusions of 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 to climate change would be low.

The effects on climate change from project actions would be limited to exhaust produced by machinery used for implementation, such as from excavators, skid steers, and trucks. These effects would be limited in duration to the time necessary to implement project actions and not result in any long-term production of exhaust. Moreover, the Tribe would avoid running equipment when it is not needed for project actions in order to conserve fuel and reduce exhaust emissions. Additionally, the short-term effect of exhaust emissions on climate change would be offset to some degree by the ameliorating effects of the restored floodplain function created by the project. The expanded riparian vegetation would sequester additional carbon than the current, limited riparian corridor does.

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

[11] U.S. Census Bureau, 2024.

Findings

BPA finds that the types of actions and the potential impacts related to the proposed habitat restoration project are similar to those analyzed in the Columbia River Basin Tributary Habitat Restoration EA (DOE/EA-2126) and Finding of No Significant Impact. There are no substantial changes in 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(c)(1) and 40 CFR §1502.9(d). Therefore, no further NEPA analysis or documentation is required.

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