

Supplement Analysis
for the
Columbia River Basin Tributary Habitat Restoration
(DOE/EA-2126/SA-18)

Yankee Fork Adaptive Management Sealing Project
BPA project number 2002-059-00

Bonneville Power Administration
Department of Energy



Introduction

In December 2020, Bonneville Power Administration (BPA) and the Bureau of Reclamation completed the Columbia River Basin Tributary Habitat Restoration Programmatic Environmental Assessment (DOE/EA 2126) (Programmatic EA). The Programmatic EA analyzed the potential environmental impacts of implementing habitat restoration actions in the Columbia River Basin and its tributaries.

Consistent with the Programmatic EA, this Supplement Analysis (SA) analyzes the effects of the Yankee Fork Adaptive Management Channel Sealing Project (project) that would implement some of the specific restoration actions assessed in the Programmatic EA in the Yankee Fork of the Salmon River (YFSR) in Custer County, Idaho. The objective of the project is to accelerate the natural sealing of existing dredge channels that allow water to bypass reaches of the Yankee Fork at the site of the Bonanza Floodplain Project (Bonanza Project). This would reduce passage issues during low flow events and increase in-stream habitat diversity; reduce water temperatures; and improve riparian and floodplain vegetative diversity for the benefit of Endangered Species Act (ESA)-listed salmonids.

This SA analyzes the site-specific impacts of the Yankee Fork Adaptive Management Channel Sealing Project to determine if the project is within the scope of the analysis considered in the Programmatic EA. It also evaluates whether the proposed project presents significant new circumstances or information relevant to environmental concerns that were not addressed by the EA. The findings of this SA determine whether additional National Environmental Policy Act (NEPA) analysis is needed pursuant to 40 Code of Federal Regulations (CFR) § 1502.9(d) and 10 CFR 1021 *et seq.*

Proposed Activities

BPA proposes to fund the Shoshone-Bannock Tribes to implement the Yankee Fork Adaptive Management Channel Sealing Project. The project would accelerate the natural channel sealing process in the upper and middle reaches of the Bonanza Reach, located in the previously dredged reach of the YFSR between Jordan Creek and the Bonanza Bridge where a habitat restoration project (Bonanza Project) had been previously completed. The project would be located on private lands and would disturb about 1 acre of land. The project would be located approximately 8.8 river miles from the mouth of the YFSR, 22 miles from Stanley, Idaho in Custer County.

The YFSR has been largely unable to passively recover from the impacts of past dredge mining. The previously completed Bonanza Project in the area involved the removal of dredge tailings to re-create a

floodplain and construction of a more natural channel within the newly created floodplain over the remaining dredge tailings. Sections of the channel were constructed using various mixes of sorted material (of dredge tailings origin) according to specifications appropriate for creating optimal fish habitat. Riffles were built using compacted, graded material and sealed with added soil. Pools and glides were not sealed with soil or other fines. Upon completion, water seepage into the ground in the upper and middle sections of the Bonanza Project reduced flows in the middle section, eventually causing it to go dry. While these flows returned to the surface in the lower section, low to no flow conditions in the middle section resulted in a barrier for migrating fish, including the migration of ESA-listed fish. Analysis indicated that most of the water loss occurs in pools and glides, which were constructed in the dredge tailings. Past dredging removed the fine-grained material between the gravel and cobble. Low spring flows following completion of construction of the Bonanza Project during the spring of 2021 did not transport sufficient material to fill the voids and replace the lost fine-grained material in the pool and run portions of the project area. Seepage rates appeared to be much lower in riffles, which were built and compacted to enhance stability using a mix of material sizes that included soil. Prior analysis indicated that pool and glide sealing would resolve and seal naturally, but after one season post completion, it is unclear how long natural sealing may take. Due to the uncertainty around sealing timing via natural processes, the Yankee Fork Adaptive Management Channel Sealing Project is proposed to address the issue.

The project would place up to 320 cubic yards (CY) of crushed local origin substrate in the new YFSR channel during 2022 and 2023 (640 CY total). Placed material would be well graded (< 0.75 inches diameter) and is intended to replenish the interstitial material lost during historical mine dredging. A track-hoe would be used to haul and stage approximately 160 CY of the substrate divided at three locations in the project area in spring (Figure 1) and five locations in summer (Figure 2). As the high spring flows recedes, the track-hoe would be used to push or scoop substrate into the channel at the three locations, allowing water to redistribute the material through transport reaches and deposit it in the targeted areas. Gravel would be metered into the stream slowly to meet turbidity limits resulting in placement of 20 to 40 yards of material a day (between three sites) for a total of 4 to 8 days each spring. A more targeted addition of up to 160 CY of additional material would occur during the summer of 2022 and 2023, and include placements at two additional sites. The gravel material would be added to the targeted areas using a track-hoe, dribbling the material out of the bucket to sprinkle it over the targeted areas between July 8 and August 14, which is the period recommended for in-water work.

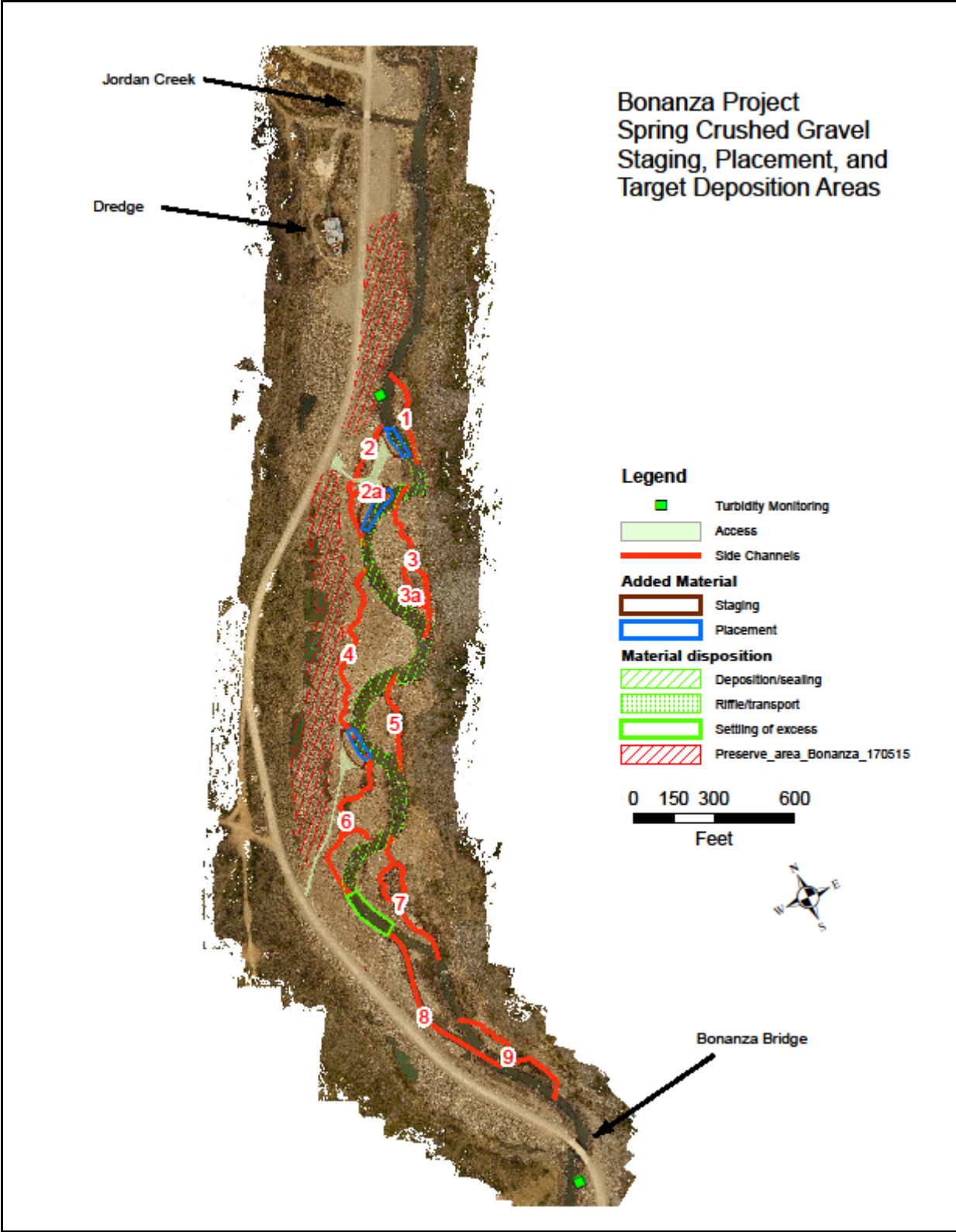


Figure 1. Spring treatments proposed for 2022 and 2023.

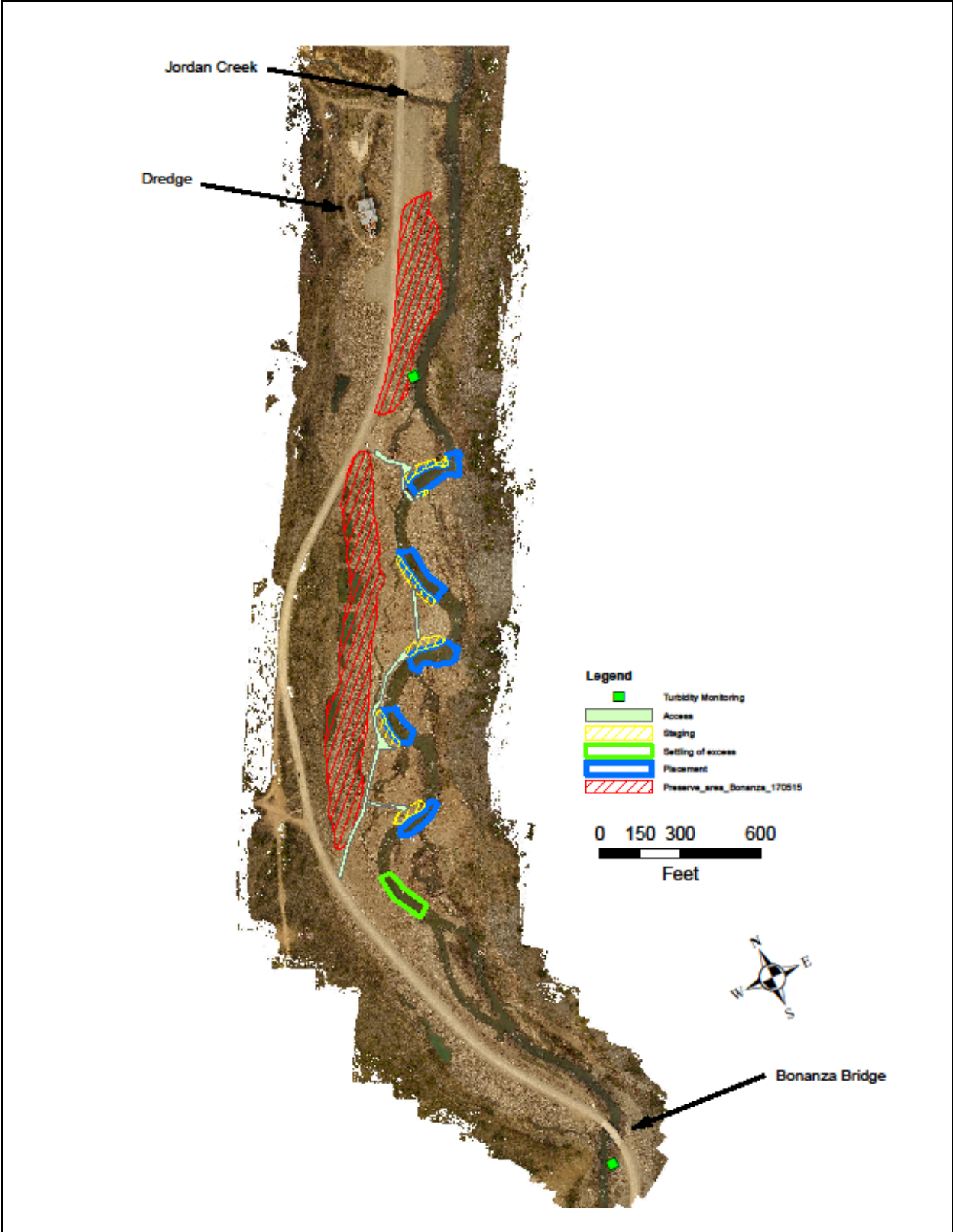


Figure 1. Summer treatments proposed for 2022 and 2023.

Trucks would haul the material to the project site via Yankee Fork Road, where a track-hoe would haul and place material at the staging areas. The track-hoe would operate in a wetted channel, including crossing a side channel in the spring and potentially operating the track-hoe from within the mainstem during the summer applications. There are no wetland areas currently at the site, and the track-hoe would not dig, rake, or compact placed material below the water line. Specific best management practices designed to avoid and minimize adverse effects are discussed in detail on pages 9 through 13 of the project's Biological Assessment (BA) developed in support of project-specific Section 7 consultation under the ESA and are incorporated by reference (see attachment 1). These minimization measures, in addition to the mitigation measures identified in the Programmatic EA, would be implemented during project construction.

Placement of material during 2023 would occur during the same time periods and using the same methods as outlined above for 2022. Total additions of placed material to the YFSR would not exceed 640 CY for the combined two-year period.

The project would support conservation of ESA-listed species considered in the 2020 ESA consultations with National Marine Fisheries Service and United States Fish and Wildlife Service on the operations and maintenance of the Columbia River System. This action also support BPA's commitments to the Shoshone-Bannock Tribes of the Fort Hall Reservation under the 2020 Columbia River Fish Accord Extension agreement, while also supporting ongoing efforts to mitigate for effects of the FCRPS on fish and wildlife in the mainstem Columbia River and its tributaries pursuant to the Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Northwest Power Act) (16 U.S.C. (USC) 839 *et seq.*). Despite short-term adverse impacts from turbid water due to the addition of gravel into the YFSR, the overall impacts would be beneficial to ESA-listed species.

Environmental Effects

The implementation of this project would require the use of a track-hoe for staging, hauling, and gravel placement. All of these restoration actions during construction would disturb and displace soil in and along the stream; damage vegetation; create noise and vehicle emissions; stress fish, and temporarily increase vehicle traffic and human activity in the project area. The typical effects associated with the environmental disturbances created by these actions are described in Chapter 3 of the Programmatic EA, and are incorporated by reference and summarized in this document.

Below is a description of the potential site-specific effects of the Yankee Fork Adaptive Management Channel Sealing Project, and an assessment of whether these effects are consistent with those described in the Programmatic EA. This project is designed to improve both aquatic and riparian habitats for the long term, so the adverse effects from soil and vegetation disturbance, and from human and mechanical activity, as detailed below, would be short-term only.

1. Fish and Aquatic Species

The effects of using mechanized equipment and manually working in and along the Yankee Fork are consistent with the analysis in the Programmatic EA, Section 3.3.1, "Fish and Aquatic Species." The Programmatic EA, Section 3.3.1.3, "Effects Conclusion for the Proposed Action on Fish and Aquatic Species," describes overall low impacts to fish and aquatic species after considering moderate short-term adverse effects and beneficial long-term effects.

Three species listed under the ESA are present in the project area: Snake River spring/summer Chinook salmon (*Oncorhynchus tshawytscha*), Snake River steelhead (*O. mykiss*), and bull trout (*Salvelinus confluentus*). BPA completed a formal Section 7 consultation under the ESA with the USFWS and NMFS on the effects of this project to these species. The Biological Opinions (NMFS, WCRO-2022-00332;

USFWS, FWS/IR9/ES/IFWO/2022-0026883) concluded that the project would likely adversely affect each of these species in the short term, but would not likely result in jeopardy to the species. NMFS also noted that the project would likely adversely affect Chinook and steelhead critical habitat in the short term, but would not likely result in destruction or adverse modification of their critical habitat. USFWS determined the action may affect, but is not likely to adversely affect bull trout designated critical habitat.

The short-term adverse effects of the project would create conditions where, during gravel placement, salmonids and other fish species would be temporarily displaced, buried, or crushed by equipment as it moves into place or buried by the gravel itself. To minimize these impacts personnel would wade through the area, as conditions allow, to encourage fish to leave the areas immediately prior to gravel placement. Additionally, sediment would be released for a short period of time following construction activities. The amount of sediment anticipated by the project would be moderate because gravels would be metered into the YFSR. The sediment inputs would be consistent with the amounts evaluated in the Programmatic EA at Section 3.3.1.2.1, "Short-Term Effects to Fish and Aquatic Species from Construction Activities".

The newly constructed in-stream environment would be re-colonized by fish and other aquatic organisms with nearly all fish likely returning in a matter of hours to days, and full returns likely following the seasonal flushing flows. The anticipated amount of activity and the level of aquatic species disturbance, however, is consistent with the analysis in the Programmatic EA found at Section 3.1.2.1, "Short-Term Effects to Fish and Aquatic Species from Construction Activities," where direct, harmful, and sometimes fatal impacts to aquatic species are disclosed; and that movement, sounds, and vibrations of human and mechanical activity are discussed as likely to disturb fish and displace them from their preferred habitat for as long as that movement, sound, and vibration are present.

The project's long-term beneficial effects include the enhancement of in-stream habitat complexity over time. These beneficial effects are consistent with the analysis in the Programmatic EA found at Section 3.3.1.2.2.2, "River, Stream, Floodplain, and Wetland Restoration and Channel Reconstruction (Category 2) Effects on Aquatic Species."

2. Water Resources

The effects of using mechanized equipment and manually working in and along the YFSR are consistent with the analysis in the Programmatic EA in Section 3.3.2, "Water Resources." The Programmatic EA, Section 3.3.2.3, "Effects Conclusion for the Proposed Action on Water Resources," describes overall low impacts to water quality after considering moderate short-term adverse effects and beneficial long-term effects.

There would be positive effects to water quantity, as this project would result in more water being retained in-river, with less water leaving the system hyporheically.

Overall, this project would create short-term, localized, sediment inputs from reintroducing stream flows onto exposed gravels. This would be a temporary impact that may last a few hours. As described in the Programmatic EA, this impact would be lessened by the application of mitigation measures such as slow, or metered placement of materials and close monitoring to keep sediment below 50 Nephelometric Turbidity Units as much as possible. The long-term effects of this project, however, would be an increased potential for the river to maintain flows conducive for passing all life stages of salmonids. The short-term adverse effects and long-term beneficial effects are consistent with those described in the Programmatic EA.

3. Vegetation

The effects of using mechanized equipment and manually working in and along the YFSR are consistent with the analysis in the Programmatic EA Section 3.3.3, "Vegetation." The Programmatic EA, Section 3.3.3.3, "Effects Conclusion for the Proposed Action on Vegetation," describes overall moderate impacts to vegetation after considering moderate short-term adverse effects and beneficial long-term effects. No plant species listed under the ESA or other sensitive plant species are present within this project area.

This project is anticipated to have impacts consistent with those described in the Programmatic EA. Vegetation along access routes and at the gravel placement locations would be crushed from the track-hoe, all impacted sites would be planted or seeded. The Programmatic EA in Section 3.3.3.2, "Environmental Consequences for Vegetation," evaluated constructed features that could disturb over 50 acres, but the area impacted by this action would be less than 1 acre. This level of effect would be moderate, consistent with those described in the Programmatic EA.

4. Wetlands and Floodplains

The effects of using mechanized equipment and manually working in and along the YFSR are consistent with the analysis in the Programmatic EA, "Wetlands and Floodplains," Section 3.3.4. The Programmatic EA, Section 3.3.4.3, "Effects Conclusion for the Proposed Action on Wetlands and Floodplains," describes overall low impacts to wetlands and floodplains after considering short-term adverse effects and beneficial long-term effects.

This project is anticipated to have impacts similar to those described in the Programmatic EA. There are no wetlands at the project disturbance sites. Gravel and access routes would be placed in the floodplain, and there would be short-term adverse effects to floodplains and adjacent wetlands, with gravel being distributed throughout the system by high flow events, which may be deposited in adjacent wetlands or the floodplain. Consistent with the Programmatic EA, there would be long-term beneficial effects from implementation of this project. It would create conditions in the reach with increased connectivity to the floodplain. These would increase the amount and quality of wetlands in the project area. This level of effect would be low after considering short-term adverse effects and beneficial long-term effects, as is stated in the Programmatic EA.

5. Wildlife

The effects of using mechanized equipment and manually working in and along the YFSR are consistent with the analysis in the Programmatic EA Section 3.3.5, "Wildlife." The Programmatic EA, Section 3.3.5.3, "Effects Conclusion for the Proposed Action on Wildlife," describes overall low impacts to wildlife after considering short-term adverse effects and beneficial long-term effects. ESA-listed Canada lynx and North American wolverine and their critical habitats are present within Custer County, but are not known to exist within the project area. No wildlife species listed under the ESA or other state-listed or sensitive wildlife species are present within this project area.

The short-term effects from this project would be consistent with, though less than, those analyzed in the Programmatic EA. There would be approximately 1 acre of vegetative (wildlife habitat) disturbance, whereas the Programmatic EA evaluated disturbances of 50 acres or more. The actions of humans and machines in this area would temporarily displace wildlife from their preferred locations and prevent them from reoccupying the site until construction activity has ceased; and the habitat to which they returned would be more diverse hydrologically, but vegetatively similar. This level of effect would be low after considering short-term adverse effects and beneficial long-term effects, as is stated in the Programmatic EA.

6. Geology and Soils

The effects of using mechanized equipment and manually working in and along the YFSR are consistent with the analysis in the Programmatic EA, Section 3.3.6, "Geology and Soils." The Programmatic EA, Section 3.3.6.3, "Effects Conclusion for the Proposed Action on Geology and Soils," describes moderate impacts to geology and soils.

This project is anticipated to have impacts consistent with those described in the Programmatic EA. Staging, hauling and placing gravels along the YFSR may cause soil displacement, compaction, and the mixing of soil horizons. The Programmatic EA in Section 3.3.3.2, "Environmental Consequences for Vegetation," evaluated construction actions that could disturb "generally less than 20 acres at any one site." The area impacted by this action would likely be only about 1 acre. Design criteria, mitigation measures, and best management practices would all be applied as described in the Programmatic EA Section 2.4, "Mitigation Measures and Design Criteria" to minimize impacts and maintain long-term productivity of soils.

The project does not specifically target soils for restoration or enhancement (as it does fish habitat and hydrologic functions), but it does have the capacity to maintain and improve soil properties and functions as it restores hydrologic function within the floodplain. The level of effect would be moderate, consistent with the effect level described in the Programmatic EA.

7. Transportation

The effects of this project in and along the YFSR are consistent with the analysis in the Programmatic EA Section 3.3.7, "Transportation." The Programmatic EA, Section 3.3.7.3, "Effects Conclusion for the Proposed Action on Transportation," describes low impacts to transportation.

This project, though adjacent to Yankee Fork Road, would not impact any roads, neither open or closed, nor public or private. No roads would be closed; none would be temporarily blocked; none would be relocated. No work would be conducted from the highway or its shoulders. As part of the project, vehicles transporting workers and equipment to project sites would be sharing local roads with other traffic during construction. Construction actions would occur for less than three weeks per year. This level of impact would be low, as is stated in the Programmatic EA.

8. Land Use and Recreation

There would be no effect on land use or recreation from this proposed project. Land uses would not change; and public recreational opportunity on this private land (of which there is none because the lands are not open to public use) would not change. This level of effect is consistent with that described in the Programmatic EA at Section 3.3.8.3, "Effects Conclusion for the Proposed Action on Land Use and Recreation," which states that land use practices underlying project sites would not be changed for most projects.

9. Visual Resources

The effects of the proposed project in and along the YFSR are consistent with the analysis in the Programmatic EA Section 3.3.9, "Visual Resources." The Programmatic EA, Section 3.3.9.3, "Effects Conclusion for the Proposed Action on Visual Resources," describes low impacts to visual resources.

The proposed restoration actions are immediately adjacent to Yankee Fork Road, and all activities would be readily visible to travelers along this route. As described in the Programmatic EA Section 3.3.9.2, "Environmental Consequences for Visual Resources," there would be short-term visual impacts. The construction actions would result in potentially visible gravel mounds that detract from the historical tailings and newly planted grasses, forbs, and shrubs. This visible effect would last for only a few weeks between staging and placing gravels in the river. When construction is complete, the river would appear

natural as the previously planted seeded grasses and forbs continue growth. Full green up would be likely in the following year, and the entire area would again provide the pastoral scenery as seen elsewhere along this highway. This level of impact would be low, as is stated in the Programmatic EA.

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

The effects of the proposed project in and along the YFSR are consistent with the analysis in the Programmatic EA, Section 3.3.10 “Air Quality, Noise, and Public Health and Safety.” The Programmatic EA, Section 3.3.10.3, “Effects Conclusion for the Proposed Action on Air Quality, Noise, and Public Health and Safety,” describes low impacts to air quality, noise, and public health and safety. This project is about 22 miles from the small town of Stanley, Idaho, which is too far for noise, dust, or exhaust from construction activities to affect the residents during the few weeks of construction activities; and no long-term source of emissions or noise would be created. Impacts to safety would come from workers sharing the roads when travelling to and from work sites; and the visual distraction that construction work so close to the Yankee Fork Road might pose to passing motorists. This project has no potential to impact public safety infrastructure (e.g. roads, telecommunications) or place a burden on emergency services (police, fire, ambulance). This level of impact would be low, as is stated in the Programmatic EA.

11. Cultural Resources

The effects of this project are consistent with the analysis in the Programmatic EA Section 3.3.11, “Cultural Resources.” The Programmatic EA, Section 3.3.11.3, “Effects Conclusion for the Proposed Action on Cultural Resources,” describes low impacts to cultural resources and potential effects would be appropriately resolved through the Section 106 consultation process under the National Historic Preservation Act.

In April 2015, BPA, the Bureau of Reclamation, the US Forest Service Salmon-Challis National Forest, and the Idaho State Historic Preservation Office entered into a Programmatic Agreement (PA) - *Programmatic Agreement Among the Bonneville Power Administration; the Bureau of Reclamation, Pacific Northwest Regional Office; the United States Forest Service Salmon-Challis National Forest; and the Idaho State Historic Preservation Officer Regarding the Yankee Fork Habitat Rehabilitation Project, Custer County, Idaho*. This PA outlined expectations regarding the Section 106 compliance process for the phased implementation of the Yankee Fork Habitat Rehabilitation Project in Custer County, Idaho. This agreement also outlined measures to resolve adverse effects to the dredge tailings identified as site 10CR1007.

As stipulated in the PA, consultation and a cultural resources inventory of the Bonanza Project (US #14) Area of Potential Effect was completed in 2017 - 2018 resulting in the identification of four new sites. On April 25, 2018, Idaho State Historic Preservation Office (SHPO) concurred with the determination that the undertaking would result in no adverse effect to historic properties (SHPO Case #218-638).

The Yankee Fork Adaptive Management Channel Sealing Project would be a continuation of the Yankee Fork Habitat Restoration Bonanza Project (US #14) that was implemented from 2018 – 2020 (SHPO concurrence April 25, 2018; SHPO Case #218-638).

12. Socioeconomics and Environmental Justice

The effects of this restoration project along YFSR are consistent with the analysis in the Programmatic EA, “Socioeconomics and Environmental Justice,” Section 3.3.10. The Programmatic EA, Section 3.3.10.3, “Effects Conclusion for the Proposed Action on Socioeconomics and Environmental Justice,” describes low impacts to socioeconomics and environmental justice.

As described in the Programmatic EA, the project would not generate a requirement for additional permanent employees nor would it require individuals to leave the local area, or relocate to it. There would be no effect on housing available for local populations. This project would not displace people or eliminate residential suitability of lands being restored, or from lands near it. The project would generate short-term employment for those directly implementing the restoration actions and would provide small short-term cash inputs to local businesses for fuel, equipment, and meals. This degree of effect would be low.

There are no environmental justice populations present that could be affected, as this project and its impacts are limited to the private lands on which they are located, and no offsite effects are anticipated that could impact environmental justice populations elsewhere.

13. Climate Change

The effects of this project in and along the YFSR are consistent with the analysis in the Programmatic EA Section 3.3.10, "Climate Change." The Programmatic EA, Section 3.3.10.3, "Effects Conclusion for the Proposed Action on Climate Change," describes low impacts to climate change.

Due to the short duration of construction and the relatively small number of construction vehicles, temporary emissions associated with project construction are anticipated to be well below the Environmental Protection Agency's reporting threshold of 25,000 metric tons of carbon and, therefore, the project would have a low level of greenhouse gas production and would have a low contribution to climate change from short-term emissions from motorized equipment operations during implementation of the restoration actions. Further, these would be offset to some degree by the ameliorating effects of restored floodplain function, such as increased water table inputs, increased carbon sequestration in expanded and improved riparian wetlands, and decreased water temperatures from improved instream and riparian habitat conditions. The overall contribution to climate change and greenhouse gas production would be low, which is consistent with the Programmatic EA.

Findings

BPA finds that the types of actions and the potential impacts related to the proposed Yankee Fork Adaptive Management Sealing Project have been examined, reviewed, and consulted upon and are similar to those analyzed in the Columbia River Basin Tributary Habitat Restoration Programmatic EA (DOE/EA-2126) and Finding of No Significant Impact. There are no substantial changes in the Programmatic EA's Proposed Action and no significant new circumstances or information relevant to environmental concerns bearing on the Programmatic 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.

/s/ Israel Duran

Israel Duran

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CorSource Technology Group

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/s/ Chad Hamel

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Supervisory Environmental Protection Specialist

Concur:

/s/ Katey Grange

Katey Grange

NEPA Compliance Officer

Date: May 10, 2022

Attachment 1

Additional Conservation Measures identified in the Yankee Fork Adaptive Management Channel Sealing Project Biological Assessment

Site layout and flagging

Prior to construction, the proposed action disturbance extents will be clearly flagged to identify: 1) sensitive resource areas, such as areas below ordinary high water (OHW), spawning areas, springs, and wetlands; 2) equipment entry and exit points; 3) road and stream crossing alignments; and 4) material staging areas.

Temporary access routes

The number and length of temporary access routes used by heavy equipment is limited to the minimum amount needed to accomplish the proposed action and all routes are located on previously disturbed areas of the Bonanza Project. The routes are not located on slopes where grade, soil, or other features suggest a likelihood of excessive erosion or failure. The removal of riparian vegetation during construction of temporary access roads will not occur. When the proposed action is complete, all routes will be decompacted, reclaimed, and revegetated.

Equipment

Mechanized equipment and vehicles will be selected, operated, and maintained in a manner that minimizes adverse effects on the environment (e.g., minimally-sized, low pressure tires; minimal hard-turn paths for tracked vehicles; temporary mats or plates within wet areas or on sensitive soils).

All vehicles and other mechanized equipment will be stored, fueled, and maintained in a vehicle staging area located 150 feet or more from any natural water body or wetland, or on an adjacent, established road area in a location and manner that will preclude erosion into, or contamination of, the stream or floodplain. Biodegradable lubricants and fluids shall be used on equipment operating in the stream channel and live water. Equipment will be inspected daily for fluid leaks before leaving the vehicle staging area for operation within 150 feet of any natural water body or wetland. Equipment will be thoroughly cleaned before operation below ordinary high water (OHW), and as often as necessary during operation, to remain free of grease.

Spill prevention, control, and counter measures

Spill containment kits (including instructions for cleanup and disposal) adequate for the types and quantity of hazardous materials used at the site will be available at the work site. An oil-absorbing floating boom will be available onsite whenever in-water work occurs. Any waste liquids generated at the equipment staging areas will be temporarily stored under an impervious cover, such as a tarpaulin, until they can be properly transported to, and disposed of, at a facility that is approved for receipt of hazardous materials.

Invasive species control

Prior to entering the site, all vehicles and equipment will be power-washed, allowed to dry fully, and inspected to make sure no plants, soil, or other organic material adheres to the surface. Watercraft, waders, boots, and any other gear to be used in or near water will be inspected for aquatic invasive species.

Cessation of work

To limit the potential for placed material to be transported out of the Upper and Middle reaches, material additions will cease to occur when flows exceed 753 cfs in the Bonanza Project area (2 yr flood recurrence interval).

To limit the potential for turbidity from the proposed action to impact fish, project operations will cease if turbidity differences between the background and compliance points exceeds 40 NTU.

To limit the potential for the proposed action to directly harm fish, material additions will not occur if more than 10 steelhead redds are observed in the Upper and Middle reaches. Placed material will not be added to directly to glides that contain any steelhead redds. Prior to all spring additions of placed material, a fish biologist will observe the area where material is being added to look for steelhead redds. If steelhead redds are present, material placement will not occur in that glide.

Site Restoration

When construction is complete in 2023, all disturbed areas will be rehabilitated in a manner that results in similar or improved conditions relative to pre-proposed action conditions. This will be achieved through decompaction of access routes, redistribution of stockpiled materials, seeding, and/or planting with local native seed mixes or plants. Invasive plants will be removed or controlled until native plant species are well-established (typically 3 years post-construction). Weed treatment will continue to be implemented through the HIP IV Biological Opinions (NMFS Consultation Number: WCRO-2020-00102, FWS reference: 01EOFW00-19FY-F-0710) under which the Bonanza Project was implemented.

Electrofishing

No electrofishing will be used.