RECLAMATION
Managing Water in the West

Instream Habitat Restoration in Bear Creek and Little Butte Creek Watersheds: Bear Creek Project 24.7

FINDING OF NO SIGNIFICANT IMPACT AND ENVIRONMENTAL ASSESSMENT

Rogue River Basin Project, Oregon

Pacific Northwest Region

PN FONSI 17-06

PN EA 17-06

U.S. Department of the Interior
Bureau of Reclamation
Columbia-Cascades Area Office
Yakima, Washington

June 2017

MISSION STATEMENTS

U.S. Department of the Interior

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Bureau of Reclamation

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Acronyms and Abbreviations

BA	biological assessment
BiOp	biological opinion
CCS	cryptocrystalline silicate
CFR	Code of Federal Regulations
Coho Salmon	Southern Oregon and Northern California Coast Coho Salmon
EA	environmental assessment
ESA	Endangered Species Act
ESU	evolutionary significant unit
FONSI	finding of no significant impact
IDP	Inadvertent Discovery Plan
ITA	Indian Trust Assets
LWM	large woody material
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOAA Fisheries	National Marine Fisheries Service
ODFW	Oregon Department of Fish and Wildlife
RDG	River Design Group
Reclamation	Bureau of Reclamation
RM	river mile
Rogue River Project	Rogue River Basin Project
RPM	reasonable and prudent measure
SFLBC	South Fork Little Butte Creek
SHPO	Oregon State Historic Preservation Office
SONCC	Southern Oregon and Northern California Coast
T&C	terms and conditions
TCP	traditional cultural property
TFT	The Freshwater Trust
USFWS	U.S. Fish and Wildlife Service
WUA	weighted usable area

Instream Habitat Restoration in Bear Creek and Little Butte Creek Watersheds: Bear Creek Project 24.7

FINDING OF NO SIGNIFICANT IMPACT

U.S. Department of the Interior
Bureau of Reclamation
Columbia-Cascades Area Office

PN FONSI 17-06

INTRODUCTION

The Bureau of Reclamation has prepared this Finding of No Significant Impact (FONSI) to comply with Council on Environmental Quality regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA). This document briefly describes the proposed action, the alternatives considered, Reclamation's consultation and coordination activities, and Reclamation's findings. The final *Instream Habitat Restoration in Bear Creek and Little Butte Creek Watersheds: Bear Creek Project 24.7* (Project 24.7) *Environmental Assessment* (EA) documents the analysis.

BACKGROUND

Reclamation's Rogue River Basin Project (Rogue River Project) is located near the cities of Medford and Ashland in southwest Oregon in two tributary basins to the Rogue River: Bear Creek and Little Butte Creek, and the tributaries of Jenny Creek in the Klamath Basin. Originally, a network of privately owned facilities, Congress authorized rehabilitation, reconstruction, and expansion of the Rogue River Project to serve multiple purposes including irrigation, flood control, fish and wildlife, recreation, and the generation and transmission of hydroelectric power in the Act of August 20, 1954 (68 Stat. 752, Public Law 83-606).

Section 7(a)(2) of the Endangered Species Act (ESA) requires Federal agencies to consult with the National Marine Fisheries Service (NOAA Fisheries) to ensure their actions are not likely to jeopardize ESA-listed species or adversely modify designated critical habitat. On March 15, 2012, Reclamation issued the *Biological Assessment on the Future Operation and Maintenance of the Rogue River Basin Project and Effects on Essential Fish Habitat under the Magnuson-Stevens Act* (Reclamation, 2012a). The proposed action included several ecological conservation measures to reduce the potential for adverse effects on Southern

Oregon/Northern California Coast (SONCC) evolutionary significant unit (ESU) of Coho Salmon (*Oncorhynchus kisutch*). These conservation actions included increasing minimum instream flows to benefit Coho Salmon habitat in Bear Creek and South Fork Little Butte Creek (SFLBC), while increasing instream habitat (large wood additions).

On April 2, 2012, the National Marine Fisheries Service (NOAA Fisheries) issued the *Endangered Species Act Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Future Operation and Maintenance of the Rogue River Basin Project (2012-2022), Rogue and Klamath River Basins (HUCs: 18010206, 17100308, 17100307), Oregon and California* [NOAA Fisheries, 2012] (BiOp). NOAA Fisheries reviewed the following: the status of the ESA-listed species affected by the proposed action; the environmental baseline for the action area; the effects of the proposed action; and the cumulative effects. NOAA Fisheries concluded that the proposed action is not likely to jeopardize the continued existence of the SONCC Coho Salmon. Specifically, NOAA Fisheries concluded that despite some adverse effects, benefits to habitat afforded by the proposed action would allow an increase in the abundance and productivity of the Upper Rogue River population of Coho Salmon, a core independent population located in the Interior Rogue diversity strata. Further, NOAA Fisheries concluded that the proposed action would allow the Upper Rogue River population to fulfill its role in the recovery of the Coho Salmon ESU. NOAA Fisheries also concluded the proposed action is not likely to adversely modify designated critical habitat for Coho Salmon. NOAA Fisheries reached this conclusion because "the proposed action's minimum flow requirements, combined with large wood additions, fish passage improvements, and ramping rate procedures offset the adverse effects on a watershed scale." (NOAA Fisheries 2012, p. 102)

The BiOp identifies the installation of large woody material (LWM) habitat structures as a reasonable and prudent measure (RPM) to minimize take of threatened Coho Salmon (NOAA Fisheries 2012). The BiOp also identifies Reclamation's commitment to meeting the weighted usable area (WUA) uplift requirement for both median and dry flow years in Bear Creek, Emigrant Creek, SFLBC, and Little Butte Creek within the Rogue River basin for winter and summer rearing habitat, as identified in Table 1.

Table 1. Proposed instream habitat uplift targets for Emigrant, Bear, South Fork Little Butte, and Little Butte creeks.

	Increase in Habitat (ft^2 WUA)		
Reach Name	**Median Flow (50% exceedance)**	**Low Flow (80% exceedance)**	**Targeted Life Stage**
Emigrant Creek/Neil Creek	7,100	15,700	Winter rearing
Bear Creek/Ashland Creek	8,600	3,000	Winter rearing
Bear Creek below Oak Street	5,100	No uplift required	Summer rearing
South Fork Little Butte Creek	6,500	No uplift required	Winter rearing
Little Butte Creek	36,000	No uplift required	Summer rearing

ALTERNATIVES CONSIDERED

One action alternative (Alternative 2) was considered and evaluated in the EA. The No Action Alternative was also evaluated as required by NEPA.

Alternative 1 - No Action: Under the No Action Alternative, instream habitat restoration projects would not be constructed within the Bear Creek and Little Butte Creek watersheds. Incidental take of juvenile Coho Salmon would continue as a result of Talent, Medford, and Rogue River Valley irrigation districts' operations and maintenance of the Rogue River Project. Avoiding the risk of incidental take for non-authorized (covered) activities by the districts would result in additional operating constraints, which would limit the availability and reliability of water supplies within the Rogue River Project.

Alternative 2 - (Preferred Alternative) Instream Habitat Restoration in Bear Creek and Little Butte Creek Watersheds: Bear Creek Project 24.7: Instream habitat projects would be implemented in the Bear Creek watershed, consistent with the proposed WUA requirements for the reaches identified in Table 1 and the terms and conditions of the BiOp.

Proposed Action

Under the Preferred Alternative, through a financial assistance agreement with The Freshwater Trust (TFT), an instream habitat project would be implemented on the Bear Creek river mile (RM) 24.7 location in the Bear Creek watershed, consistent with the *Instream Habitat Restoration EA/FONSI*. The work would be accomplished through Reclamation's Cooperative Agreement R16AC00100.

Reclamation proposes to construct a series of LWM installations to improve aquatic habitat on three private properties at Bear Creek RM 24.7. This proposed project aims to add a moderate amount of stable large wood to Bear Creek to enhance winter rearing habitat for juvenile Coho Salmon and increase channel complexity for all aquatic species. As part of the 24.7 Project, a small amount of stable large wood is proposed for an existing side channel to Bear Creek and for Roca Creek, a tributary to Bear Creek. Collectively, the proposed project involves the following: construction of temporary access routes and staging and stockpile areas; construction of 11 large-tiered large wood structures, 1 medium-tiered large wood structure, 17 smaller large wood structures, and 4 individual log placements; and restoration of disturbed areas through riparian plantings or seeding. Logs would be procured from a local timber operation working under the Oregon State Forest Practice Act.

The streambank toe would be excavated for the placement of rootwads, large wood, and ballast boulders, and then backfilled with gravel and cobbles either from the site or imported from a local source. Willows and other riparian vegetation would be planted along the face of the bank. The temporary access routes and staging areas would be planted with native seed.

The instream construction is expected to occur summer of 2017 during the Oregon Department of Fish and Wildlife (ODFW) established work window for Bear Creek, which is

June 15 through September 15. The project site would not be isolated from active flow. A silt curtain would be installed along the channel edge to trap silt and sediment within the disturbed work zone, if needed. If water quality issues arise due to construction activities occurring in active flow, the contractor would use the best management practice of operating 30 minutes in the water with a 1-hour wait period before resuming in-water work.

As stipulated in the Instream Habitat Restoration EA/FONSI, a Public Safety Risk Matrix and Property Damage Risk Matrix was completed by TFT and River Design Group (RDG) and was reviewed by Reclamation's River Systems Analysis Group. Review of and comment on the matrices occurred at each design phase (concept, 30%, 60%, 90%, and 100%), and comments were submitted to TFT and RDG by a hydraulic engineer in the Pacific Northwest Region Geology and River Systems Analysis Group.

Findings

Reclamation issued a *Finding of No Significant Impact for the Instream Habitat Restoration in Bear Creek and Little Butte Creek Watersheds Environmental Assessment* (Instream Habitat Restoration EA/FONSI) on July 8, 2015. The *Instream Habitat Restoration in Bear Creek and Little Butte Creek Watersheds: Bear Creek Project 24.7 Environmental Assessment* tiers from the Instream Habitat Restoration EA and provides project specific information as necessary.

Since specific actions in specific locations were not identified in the Instream Habitat Restoration EA, the environmental effects determinations represented the typical effects associated with the implementation of LWM structures. Reclamation committed to evaluate site-specific projects individually to determine if the typical effects described in the Instream Habitat Restoration EA were adequately analyzed. In addressing cumulative effects of the proposed activities, the assessment assumes compliance with the BiOp regarding the WUA required within each identified reach, according to Table 1.

Reclamation has determined that the analysis present in the *Instream Habitat Restoration EA* sufficiently analyzed the project's impacts on the following resources: climate change, water quality, riparian vegetation, fish and wildlife, Indian Trust Assets (ITA), and environmental justice; therefore, those sections are incorporated by reference from the *Instream Habitat Restoration EA* and were not further analyzed. The EA discusses the existing environment and the environmental consequences of the two alternatives on the following resources: threatened and endangered species and cultural resources.

Based on the following summary of the implementation effects of the Preferred Alternative (as discussed in the attached Project 24.7 EA and the Instream Habitat Restoration EA), there would be no significant impacts on the quality of the human environment; therefore, an environmental impact statement is not necessary and will not be prepared.

THREATENED AND ENDANGERED SPECIES

The effects of the proposed project on federally listed threatened and endangered species were analyzed in Reclamation's BA and NMFS' BiOp. The Coho Salmon is the only ESA-listed species that may be affected by implementation of the proposed project.

The BiOp identified terms and conditions (T&C) to minimize incidental take of Coho Salmon caused by implementation of this project. Reclamation and its contractors must comply with the T&C to implement the reasonable and prudent measures included in the BiOp.

The construction of the LWM structures would result in immediate, juvenile Coho Salmon habitat formation, including the following:

- Pool formation to provide slower, deeper water as an insulator to high water temperatures from direct solar radiation and to provide areas of rest.
- Overhead cover for protection against predation and to provide shade.
- Refugia from high-velocity flows, as the LWM would slow flows around and through the structure.
- Sorting of gravel, including the deposition of spawning gravel, would increase and develop a more complex habitat.

Reclamation anticipates that *Project 24.7* would provide a gross WUA of 880 ft^2. The benefits would begin to accrue in the short term and persist in the long term. Implementation of the proposed project would result in a substantial increase of winter and summer instream rearing habitat and stream complexity conditions that are beneficial to juvenile Coho Salmon. Reclamation anticipates that long-term beneficial impacts of LWM installations would aid in the recovery of the Coho Salmon population to a viable level.

Reclamation has determined that implementation of the proposed project will not affect ESA-listed species under the jurisdiction of the U.S. Fish & Wildlife Service (USFWS).

Cultural Resources

On February 1, 2017, Reclamation sent pre-project consultation letters, notifying the following Tribes as to the location and intent of the cultural resource inventory by Cascade Research, LLC: Confederated Tribes of Grand Ronde, Confederated Tribes of Siletz, Cow Creek Band of Umpqua Indians, Quartz Valley Indian Reservation, Tolowa Dee-ni′ Nation, and Klamath Tribes. The Cow Creek Band of Umpqua Indians requested a copy of the final report.

Cascade Research conducted the records search at the SHPO in Salem, Oregon, and conducted the cultural resource surveys on the APE. Research at SHPO revealed the recording of a single, isolated pre-contact find, and a few lithic scatters.

Cascade Research conducted a pre-blackberry removal cultural resource survey on March 2 and 3, 2017. The cultural resource inventory of the APE included all associated temporary access routes, staging/stock pile areas, and placement areas for the large wood structures. Bare mineral soil visibility was variable, especially along the creek where the blackberry thickets covered the break-in-slope down to the edge of Bear Creek. No historic or pre-contact sites or isolated finds were noted during the course of surface inventory. Shovel probes were negative for pre-contact findings; however, two items of modern manufacture were recovered.

On April 17, 2017, Cascade Research conducted a second-stage cultural resource inventory. No pre-contact Native or historic cultural material was noted within the APE during the course of the inventory after removal of invasive vegetation (e.g., post-blackberry removal).

The Cow Creek Band of Umpqua Indians was sent a copy of the initial cultural resource survey on March 7, 2017, and the final, post-blackberry removal, cultural resource survey on May 26, 2017. Reclamation has developed an inadvertent discovery plan (IDP) at the request of the Cow Creek Band of Umpqua Indians, which would be provided to TFT. TFT would be responsible to ensure that onsite contractors have a copy of the IDP on-hand at all times.

Reclamation initiated consultation with the SHPO in a letter dated March 7, 2017, and did not receive a response within the 30-day comment period with regards to the initial, pre-blackberry removal cultural resource survey. Reclamation sent the final cultural resource survey report on May 2, 2017. Reclamation determined that Project 24.7 would have no effect on any significant archaeological objects or sites and that additional archaeological research is not anticipated for this project. Reclamation received a letter of concurrence from the SHPO on May 24, 2017. The SHPO reviewed the report and concurred that the project will likely have no effect on any significant archaeological objects or sites, and that additional archaeological research is not anticipated for this project.

Traditional Cultural Properties (TCP). Reclamation consulted with area Tribes to determine if TCP are present in the project vicinity. Reclamation did not receive responses from the Tribes.

Permits

Per the Instream Habitat Restoration EA/FONSI, the following permit, authorization, review, and exemption applications have been submitted for Project 24.7:

- U.S. Army of Corps of Engineers Nationwide Permit No. 27 (Aquatic Habitat Restoration, Establishment, and Enhancement Activities)
- Jackson County Type 1 Land Use Permit-Floodplain Development Permit
- Oregon Department of State Lands Removal/Fill Exemption with notice for voluntary habitat restoration activities
- Oregon Department of Fish and Wildlife concurrence on Procedures for Generating Shade Credits

The project will not commence until all applicable permits, authorizations, reviews, and exemptions have been received by TFT and forwarded to Reclamation.

DECISION

It is my decision to authorize the Preferred Alternative, the implementation of *Instream Habitat Restoration in Bear Creek and Little Butte Creek Watersheds: Bear Creek Project 24.7.*

Finding of No Significant Impact

Based on the analysis of the environmental impacts presented in the final EA, and implementation of all environmental commitments, Reclamation has concluded the implementation of the Preferred Alternative will have no significant impacts on the quality of the human environment or natural and cultural resources of the area. Reclamation concludes that preparation of an environmental impact statement is not required, and that this EA and FONSI satisfy the requirements of NEPA.

Recommended:

6/2/17

Candace McKinley
Environmental Program Manager
Yakima, Washington

Date

Approved:

6/7/17

Dawn Wiedmeier
Area Manager, Columbia-Cascades Area Office
Yakima, Washington

Date

RECLAMATION
Managing Water in the West

Instream Habitat Restoration in Bear Creek and Little Butte Creek Watersheds: Bear Creek Project 24.7

ENVIRONMENTAL ASSESSMENT

Rogue River Basin Project, Oregon

Pacific Northwest Region

PN EA 17-06

Bureau of Reclamation
Columbia Cascades Area Office
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Instream Habitat Restoration in Bear Creek and Little Butte Creek Watersheds: Bear Creek Project 24.7

ENVIRONMENTAL ASSESSMENT

U.S. Department of the Interior
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INTRODUCTION

The Bureau of Reclamation's Rogue River Basin Project (Rogue River Project) is located near the cities of Medford and Ashland in southwest Oregon in two tributary basins to the Rogue River: Bear Creek and Little Butte Creek, and the tributaries of Jenny Creek in the Klamath basin. Originally a network of privately owned facilities, Congress authorized rehabilitation, reconstruction, and expansion of the Rogue River Project to serve multiple purposes including irrigation, flood control, fish and wildlife, recreation, and the generation and transmission of hydroelectric power in the Act of August 20, 1954 (68 Stat. 752, Public Law 83-606).

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NOAA Fisheries reviewed the following:

- Status of the ESA-listed species affected by the proposed action.
- The environmental baseline for the action area.
- The effects of the proposed action.
- The cumulative effects.

NOAA Fisheries concluded that the proposed action is not likely to jeopardize the continued existence of the SONCC Coho Salmon. Specifically, NOAA Fisheries concluded that despite some adverse effects, benefits to habitat afforded by the proposed action would allow an increase in the abundance and productivity of the Upper Rogue River population of Coho Salmon, a core independent population located in the Interior Rogue diversity strata. NOAA Fisheries concluded that the proposed action would allow the Upper Rogue River population to fulfill its role in the recovery of the Coho Salmon ESU. NOAA Fisheries also concluded the proposed action is not likely to adversely modify designated critical habitat for Coho Salmon because, "the proposed action's minimum flow requirements combined with large wood additions, fish passage improvements, and ramping-rate procedures, offset the adverse effects on a watershed scale." (NOAA Fisheries 2012).

The BiOp identifies the installation of large woody material (LWM) habitat structures as a reasonable and prudent measure (RPM) to minimize take of threatened Coho Salmon (NOAA Fisheries 2012). The BiOp also identifies Reclamation's commitment to meeting the weighted usable area (WUA) uplift requirement for both median and dry flow years in Bear Creek, Emigrant Creek, South Fork Little Butte Creek (SFLBC), and Little Butte Creek within the Rogue River basin for winter and summer rearing habitat, as identified in Table 1.

Reclamation issued a Finding of No Significant Impact (FONSI) for the *Instream Habitat Restoration in Bear Creek and Little Butte Creek Watersheds Environmental Assessment* (Instream Habitat Restoration EA/FONSI) on July 8, 2015. Based on the analysis of the environmental impacts presented in the Final EA, Reclamation concluded that the implementation of instream habitat restoration projects would have no significant impacts on the quality of the human environment or natural and cultural resources of the area. This *Instream Habitat Restoration in Bear Creek and Little Butte Creek Watersheds: Bear Creek Project 24.7* (Project 24.7) *Environmental Assessment* tiers from the July 2015 EA above and provides project-specific information.

The Instream Habitat Restoration EA/FONSI (Reclamation 2015) states that Reclamation would complete projects within the two watersheds to increase the quality of instream habitat and habitat complexity by placing LWM in targeted areas. These LWM projects intend to increase pool habitat for juvenile rearing. Project activities would also improve geomorphic forms and processes and create more hydraulic diversity. The LWM projects would be designed to increase WUA winter or summer rearing habitat within the Bear Creek and Little Butte Creek watersheds for juvenile Coho Salmon, according to Table 1.

In addition, the Instream Habitat Restoration EA/FONSI stated that prior to individual project implementation, a cultural resource survey would be completed, and site-specific protection measures would be implemented to preserve the integrity of all recorded sites determined to be eligible to the National Register of Historic Places (National Register) or considered unevaluated. Such cultural resource sites would be buffered, avoided, or otherwise protected as determined in consultation with the Oregon State Historic Preservation Office (SHPO). This may include oversight by an archaeologist during project implementation.

Table 1. Proposed instream habitat uplift targets for Emigrant, Bear, South Fork Little Butte, and Little Butte creeks.

	Increase in Habitat (ft^2 WUA)		
Reach Name	**Median Flow (50% exceedance)**	**Low Flow (80% exceedance)**	**Targeted Life Stage**
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Bear Creek below Oak Street	5,100	No uplift required	Summer rearing
South Fork Little Butte Creek	6,500	No uplift required	Winter rearing
Little Butte Creek	36,000	No uplift required	Summer rearing

Purpose of and Need for Action

Purpose

The purpose of the proposed instream habitat restoration projects is to aid in the recovery of Coho Salmon population to a viable level. This would be accomplished by increasing quality instream habitat and habitat complexity through targeted LWM placement. Through increasing channel complexity, these projects seek to form pool habitat for juvenile rearing. Project activities are also intended to improve geomorphic forms and processes and create more hydraulic diversity.

Need

The proposed instream habitat restoration actions are needed to rehabilitate Bear Creek and Little Butte Creek to enhance natural populations of anadromous fish in these degraded stream systems. Water temperature and flow, sedimentation, and the lack of instream habitat (pools, cool water refugia, and instream complexity) limit aquatic life in the system (Bredikin et al., 2006). In addition, this conservation action is necessary to obtain the reasonable and prudent measure (RPM) requirements of the BiOp as outlined in Table 1.

Project Location

The project area is located on private property (three landowners) along the southwest and northeast bank of Bear Creek, approximately 1-mile east of downtown Ashland, Oregon. The project includes work in the main channel and a side channel of Bear Creek and Roca Creek (a tributary to Bear Creek). Bear Creek roughly parallels Interstate 5 along the east side of Ashland, and generally flows to the northwest approximately 25.5 miles, where it joins the Rogue River near Gold Hill, Oregon. The approximate 7-acre project area lies within Jackson County in Section 3 and 10 of Township 39 South, Range 1 East.

Authorities and Related Laws

This section is incorporated by reference from the *Instream Habitat Restoration EA.*

ALTERNATIVES

This chapter describes basic features of the alternatives analyzed in this document.

Alternative 1 - No Action

The No Action Alternative represents a continuation of the existing conditions and provides a comparative baseline for evaluating changes and impacts of the Proposed Action Alternative. Under the No Action Alternative, Reclamation would take no action to improve Bear Creek and Little Butte Creek watershed resources for juvenile Coho Salmon. The following natural process would proceed without intervention:

- Stream reaches would continue to lack habitat complexity that provides juvenile salmon with refuge from high-velocity flows, predation, and high temperatures.
- Streams would continue to be disconnected from their floodplains, resulting in sediment fines remaining in channel.
- Invasive weeds would continue to proliferate, choking out native riparian vegetation.
- Direct solar radiation would continue to increase stream temperatures that can be fatal to juvenile Coho Salmon.
- Riparian vegetation would continue to be degraded and would not be enhanced along the existing riparian corridor.

The No Action Alternative would not minimize take according to the requirements of the BiOp. Incidental take of juvenile Coho Salmon would continue as a result of Talent, Medford, and Rogue River Valley irrigation districts' operation and maintenance of the Rogue River Project. Avoiding the risk of incidental take for non-authorized (covered) activities by the districts would result in additional operating constraints, which would limit the availability and reliability of water supplies within the Rogue River Project. Environmental conditions under the No Action Alternative would diminish species recovery efforts, and the basic goal to maintain or aid recovery of the basin's native Coho Salmon population at a genetically viable level would not be achieved.

Alternative 2 - Preferred Alternative

Instream Habitat Restoration in the Bear Creek and Little Butte Creek Watersheds—Bear Creek Project 24.7

Under Alternative 2, through a financial assistance agreement with The Freshwater Trust (TFT), an instream habitat project would be implemented on the Bear Creek river mile (RM) 24.7 location in the Bear Creek watershed, consistent with the Instream Habitat Restoration EA/FONSI. The work would be accomplished through Reclamation's Cooperative Agreement R16AC00100.

Reclamation proposes to construct a series of LWM installations to improve aquatic habitat on three private properties at Bear Creek RM 24.7. This proposed project aims to add a moderate amount of stable large wood to Bear Creek to enhance winter rearing habitat for juvenile Coho Salmon and increase channel complexity for all aquatic species. As part of the 24.7 Project, a small amount of stable large wood is proposed for an existing side channel to Bear Creek and for Roca Creek, a tributary to Bear Creek. Collectively, the proposed project involves the following:

- Construction of temporary access routes and staging and stockpile areas.
- Construction of 11 large-tiered large wood structures.

- 1 medium-tiered large wood structure.
- 17 smaller large wood structures.
- 4 individual log placements.
- Restoration of disturbed areas through riparian plantings or seeding.

Logs would be procured from a local timber operation working under the Oregon State Forest Practice Act. The streambank toe would be excavated for the placement of rootwads, large wood, and ballast boulders, and then backfilled with gravel and cobbles either from the site or imported from a local source. Willows and other riparian vegetation would be planted along the face of the bank. The temporary access routes and staging areas would be restored with native seed.

The existing roads that lead to the project vicinity would be used for ingress and egress, and then temporary access routes would be utilized for accessing equipment and material staging areas, and construction locations for large wood structures. No improved roads currently exist within the project vicinity; however, some landowners have created informal access routes to Bear Creek. Equipment and staging areas would be accessed via a grassy, rock-covered pasture, and located in areas with little exposed soil, covered primarily by alluvial cobbles and gravel placed by high-water events. The two equipment and material staging areas are located northeast and southeast of Bear Creek. The northeast area would be approximately 20,000 square feet, and the southeast area would be approximately 15,000 square feet. The temporary access roads should not require improvements to facilitate construction equipment access. These access points would be reconditioned to as-good-as or better-than pre-project conditions. No equipment would cross through the streambed.

Nine large-tiered wood structures are proposed along the main channel of Bear Creek, and two large-tiered structures are proposed for the side channel of Bear Creek. The tiered structures would consist of a base layer of 4 lengths of trees (members) with rootwads placed within an excavated foundation. Approximately 160 cubic yards would be excavated per structure. The bank-line foundation would conform to structure dimensions to avoid excavation and disturbance of in situ materials outside of the structure footprint. Subsequent layers of key members, with and without rootwads, would be placed at a slight vertical skew and tied into the existing floodplain trees, if available. The layers (8 members and 3 lengths of large wood) would form a stable, interlaced matrix and would not extend more than 3 feet above ground surface. The structures would be further anchored to each other with all-thread rods and nuts. Exposed metal would be painted with brown rust-inhibiting all-weather paint. Ballast boulders, gravel, cobbles, and excavated materials would also be used for anchoring. Micro piles, groupings of small diameter and large wood members, would be woven into the structure at variable vertical angles and extend to the top of the log structure. Slash piles would be incorporated within the first 8 feet from the ordinary high-water mark toward the bank. Plantings of willow and other riparian vegetation would be placed within the backfill areas at a minimum of four clumps per structure. A scour pool (approximately 30 feet by 8 feet by 3 feet deep) would be excavated in the streambed to deepen the creek and initiate pool formation, which would provide areas of rest, cooler temperatures, and cover for juvenile Coho Salmon.

One medium-tiered large wood structure is proposed along the main channel of Bear Creek. The tiered structure would consist of a base layer of three lengths of trees (members) with rootwads placed within an excavated foundation. Approximately 100 cubic yards would be

excavated per structure. The bank-line foundation would conform to structure dimensions to avoid excavation and disturbance of in-situ materials outside of the structure footprint. Subsequent layers of key members, with and without rootwads, would be placed at a slight vertical skew and tied into the existing floodplain trees, if available. The layers (six members and six lengths of large wood) would form a stable, interlaced matrix and would not extend more than 3 feet above ground. The structures would be further anchored to each other with all-thread rods and nuts. Exposed metal would be painted with brown rust-inhibiting all-weather paint. Ballast boulders, gravel, cobbles, and excavated materials would also be used for anchoring. Micro piles, groupings of small diameter and large wood members would be woven into the structure at variable vertical angles and extend to the top of the log structure; slash piles would be incorporated within the first 8 feet from the ordinary high-water mark toward the bank. Plantings of willow and other riparian vegetation would be placed within the backfill areas at a minimum of four clumps per structure. A scour pool (approximately 40 feet by 8 feet by 3 feet deep) would be excavated in the streambed to deepen the creek and initiate pool formation, which would deepen the creek to provide areas of rest, cooler temperatures, and cover for juvenile Coho Salmon.

Ten smaller, two-member large wood structures are proposed along the main channel of Bear Creek, and one identical structure is proposed for the side channel to Bear Creek. Each would require the excavation of approximately 25 cubic yards and would not exceed the footprint of the proposed structure. A base member, without rootwad, would be placed within the excavated foundation with a key member, and rootwad placed across the base member at a slight vertical skew. A whole small tree with rootwad would be placed underneath the key member's rootwad, and a large-wood length would be placed askew to develop a stable interlaced matrix. A second whole small tree would be woven into the matrix, as well as a minimum of four micro piles per structure. The structures would tie into existing floodplain trees, if available. The structures would be stabilized with ballast boulders, gravel, cobbles, and excavated materials. Willow and other riparian plants would be secured and placed within the backfill at a minimum of four clumps per structure. A scour pool (approximately 15 by 8 feet by 3 feet deep) would be excavated in the streambed to deepen the creek and initiate pool formation, which would deepen the creek to provide areas of rest, cooler temperatures, and cover for juvenile Coho Salmon.

Six small single-member structures would be constructed—two in the main channel, one in the side channel, and three in Roca Creek. Approximately 5 cubic yards of material would be excavated, and the bank-line would be notched such that the two wood members would sit low in direct contact with the channel bottom and scour pool. A small tree with rootwad would be placed parallel to large wood members and with the rootwad at the upstream end. A key member with rootwad would be placed across the small tree, the stream end would be embedded into the scour pool, and the bank end would be tied into existing floodplain trees. Ballast boulders would be placed onto wood members to pin the structure. A scour hole (maximum depth of 3 feet) would be created beneath and downstream from each structure. The associated scour pool would be approximately 15 by 6 feet by 3 feet deep to initiate pool formation.

Approximately four individual logs would be placed in Roca Creek. Each of the individual logs would require approximately 2 cubic yards of excavation, and two-thirds of its length would be buried into the channel bank. The four, single logs would be in direct contact with the channel bed, and scour pools would not be created.

The instream construction is expected to occur summer of 2017 during the Oregon Department of Fish and Wildlife (ODFW) established work window for Bear Creek, which is June 15 through September 15. The project site would not be isolated from active flow. A silt curtain would be installed along the channel edge to trap silt and sediment within the disturbed work zone, if needed. If water quality issues arise due to construction activities occurring in active flow, the contractor would use the best management practice of operating 30 minutes in the water with a 1-hour wait period before resuming in-water work.

As stipulated in the Instream Habitat Restoration EA/FONSI, a Public Safety Risk Matrix and Property Damage Risk Matrix were completed by TFT and River Design Group (RDG) and was reviewed by Reclamation's River Systems Analysis Group. Review of and comment on the matrices occurred at each design phase (concept, 30%, 60%, 90%, and 100%), and comments were submitted to TFT and RDG by a hydraulic engineer in the Pacific Northwest Region Geology and River Systems Analysis Group.

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Introduction

Reclamation issued the Instream Habitat Restoration EA/FONSI on July 8, 2015. The *Instream Habitat Restoration in Bear Creek and Little Butte Creek Watersheds: Bear Creek 24.7 Environmental Assessment* tiers from the Instream Habitat Restoration EA and provides project specific information as necessary.

Since specific actions in specific locations were not identified in the Instream Habitat Restoration EA, the environmental effects determinations represented the typical effects associated with the implementation of LWM structures. Reclamation committed to evaluate site-specific projects individually to determine if the typical effects described in the Instream Habitat Restoration EA were adequately analyzed. In addressing cumulative effects of the proposed activities, the assessment assumes compliance with the BiOp regarding the WUA required within each identified reach, according to Table 1.

This chapter describes the affected environment, including existing conditions and future anticipated conditions if the No Action Alternative is selected, the anticipated effects to the environment if the proposed activities are implemented, and the cumulative impacts of the proposed activities.

Reclamation has determined that the analysis present in the Instream Habitat Restoration EA sufficiently analyzed the project's impacts on the following resources: climate change, water quality, riparian vegetation, fish and wildlife, Indian Trust Assets (ITA), and environmental justice; therefore, those sections are incorporated by reference from the Instream Habitat Restoration EA and were not further analyzed. This EA discusses the existing environment and the environmental consequences of the two alternatives on the following resources: threatened and endangered species and cultural resources. Where applicable, mitigation measures are recommended to reduce adverse environmental effects.

Threatened and Endangered Species

Affected Environment

The Coho Salmon is the only ESA-listed species that may be affected by implementation of the proposed project. Please see the evaluation of the Rogue River Project's overarching effects on Coho Salmon at http://www.usbr.gov/pn/programs/esa/oregon/rogue/rogueba.pdf.

Other ESA-listed species in the Jackson County area under the jurisdiction of NOAA Fisheries include the North American green sturgeon and Pacific eulachon.

The ESA-listed species listed for Jackson County under the jurisdiction of the U.S. Fish and Wildlife Service are the following (USFWS 2015):

- Birds: Northern Spotted owl (*Strix occidentalis caurina*)
- Crustaceans: Vernal Pool fairy shrimp (*Branchinecta lynchi*)
- Mammals: Gray wolf (*Canis lupus*)
- Amphibians: Oregon spotted frog (*Rana pretiosa)*
- Flowering Plants: Cook's lomatium (Lomatium cookie), Gentner's Fritillary (*Fritillaria gentneri*), and large-flowered woolly Meadowfoam (*Limnanthes floccosa ssp. grandiflora*)

Environmental Consequences

No Action

If the proposed action was not implemented, Reclamation would not satisfy the required conservation actions of the BiOp, and would trigger reconsultation with NOAA Fisheries.

The lack of pools within the project area limits resting and rearing habitat for juvenile and adult salmonids. The poor pool quality would continue to have direct and indirect negative effects on the production of adult and juvenile salmon, trout, and other species.

Coho Salmon would continue to be subject to warm temperatures and predation as a result of shallow water and scattered riparian shade.

Proposed Action

The analysis in the Instream Habitat Restoration EA provides a broader statement of effects of the proposed action and is incorporated by reference. The following describes site-specific details of the effects on Coho Salmon.

The Freshwater Trust and its contractor would consult with ODFW to determine if fish salvage is necessary. If fish salvage is determined necessary, TFT would coordinate with ODFW to remove existing fish at the project site prior dewatering the area. Fish salvage would be conducted by trained fisheries biologists, per ODFW rules and BiOp terms and conditions (T&Cs) for LWM installations. Fish would be allowed to migrate out of the work area, if possible. If necessary, electrofishing or use of a seine net may be used to remove fish from the isolated work area. In cofferdam work areas and other isolated areas, water would be drawn down to help consolidate fish and improve salvage efforts, if deemed necessary. If reduction in water volume is necessary, pumps would be fitted with approved fish screens that prevent impingement or entrainment of fish. For the period between capture and release, all captured aquatic life would be immediately put into clean 5-gallon buckets filled with clean river water. Fish species and life stage would be documented, and fish would be released in a

safe environment as determined by ODFW or contractor's biologists.

The large habitat wood structures would deflect the hydraulic forces away from the streambank, while providing habitat to juvenile Coho Salmon. Willow clumps would be placed along the bank face to provide quick-growing riparian cover and eventually increase the stability of the large wood habitat structure. As these willows and other riparian tree species mature, they will provide additional woody material to the stream.

The smaller large wood structures function as barbs. Barbs provide complex hydraulics and erosion and sedimentation patterns that ultimately lead to more complex instream habitats with beneficial protective cover. Barbs help develop distinct pools, tail-outs, thalweg, and other complex habitat patterns in an otherwise homogenous reach of the creek.

The individual logs function similar to barbs, but on a smaller scale. Individual logs protect the streambank by increasing the resistance of the bank and pushing the higher velocity flow toward the center of the channel, while providing instream habitat through scour and cover.

The construction of the LWM structures would result in the following immediate, juvenile Coho Salmon habitat formation:

- Pool formation to provide slower, deeper water as an insulator to high water temperatures from direct solar radiation and to provide areas of rest.
- Overhead cover for protection against predation and to provide shade.
- Refugia from high-velocity flows as the LWM would slow the flows around and through the structure.
- Sorting of gravel, including the deposition of spawning gravel, would increase and develop a more complex habitat.

Reclamation anticipates that Project 24.7 would provide a gross WUA of 880 ft^2. The benefits would begin to accrue in the short term and persist in the long term. Implementation of the proposed project would result in a substantial increase of winter and summer instream rearing habitat and stream complexity conditions that are beneficial to juvenile Coho Salmon. Reclamation anticipates that long-term beneficial impacts of LWM installations would aid in the recovery of the Coho Salmon population to a viable level.

Cumulative Effect

Reclamation has assessed past, present, and reasonably foreseeable projects in the Bear Creek and Little Butte Creek watersheds for cumulative impacts. There are several reasonably foreseeable actions near Project 24.7 that have beneficial effects to Coho Salmon. Reclamation's BA and the NOAA Fisheries' BiOp, address the following Reclamation conservation actions within both watersheds: instream flows, ramping rates, fish passage modifications, riparian zone restoration (without LWM placement), and water conservation projects.

Mitigation

No mitigation is needed. The effects of the proposed project on federally listed threatened and endangered species were analyzed in Reclamation's BA and NOAA Fisheries' BiOp. The proposed action, as a result of the BiOp, has associated T&C that are non-discretionary. Reclamation must comply with the T&C to implement the RPMs included in the BiOp. (See Appendix B for the RPMs and T&C associated with construction of the proposed project.)

Reclamation has determined that implementation of the proposed project would not affect ESA-listed species under the jurisdiction of USFWS.

Cultural Resources

The National Historic Preservation Act (NHPA) requires Federal agencies to evaluate their impact on historic properties within the human environment. "Historic property" means any prehistoric or historic district, site, building, structure, traditional cultural property (TCPs), or object included in or eligible for inclusion in the National Register and includes any material, artifacts, or records related to and located within such historic properties. They may include irrigation systems that are more than 50 years old and are associated with events or processes important in the history of the area. "Cultural resources" covers a wider range of resources than "historic properties," such as sacred sites, isolated artifacts, and archaeological collections.

Affected Environment

The area of potential effect (APE) for Project 24.7 is located along the southwest and northeast bank of the Bear Creek, and within Sections 3 and 10 of Township 39 South, Range 1 East in Jackson County, Oregon, adjacent to the southern limits of the City of Ashland. The APE is located primarily along Bear Creek, with three small LWM structures and four individual log placements along Roca Creek, and includes all areas associated with temporary access routes, and staging and stockpile areas. The following sections are extracted from the Cultural Resource Inventory completed by Cascade Research, LLC, in March 2017 (Gray 2017):

Ethnography: In the late prehistoric period the Takelma, a Penutian-speaking people resided in a territory that centered on the upper Rogue River drainage and extended east up Little Butte Creek to the crest of the Cascades. To the south, they occupied portions of the Bear Creek Valley as far as the Talent/Ashland area, and likely the current project area. On the west, the Applegate River Valley and Galice Creek marked the boundaries with their Athapascan-speaking neighbors, the Dakubetede and the Taltuctuntede. The Hokan-speaking Shasta shared the southern portion of the Bear Creek Valley with the Takelma. Shasta territory extended south and east into northern California along the Klamath, Shasta, and Scott Rivers (Holt 1946). The groups bordering Takelma territory to the north were the Molala and the Cow Creek Band of Umpqua Indians.

The Takelma, as defined by language dialect, were divided into two and possibly three distinct groups. The principal villages of the Lowland Takelma were centered on the Rogue River extending from the present-day town of Gold Hill downriver to perhaps Grave Creek. The Upland Takelmas winter village home territory was further upriver in the lower Bear Creek Valley near Table Rock and perhaps as far east as Ashland, Oregon. The drainage of Little Butte Creek was also considered Upland Takelma territory. A third dialect group of Takelma may have inhabited the upper reaches of the Rogue River drainage in the vicinity of Trail and Elk Creek, although little is known of this subgroup. All of the Takelma, as well as the neighboring Shasta and Athapascans shared a common way of life and a similar natural environment, though local differences in the availability of certain resources may have resulted in slightly different subsistence and settlement patterns.

Archaeology: The prehistory of the Bear Creek Valley followed the general patterns evident elsewhere in the American West. The post-glacial landscape (ca. 11,500 to 10,600 B.P.) was home to highly nomadic Paleo-Indians, who hunted widely throughout the west, leaving large, fluted, Clovis spear points as signatures of their passing. With the establishment of a more modern flora in the early Holocene, a hunting and gathering way of life, termed the "Archaic," came into being, and it persisted with local and temporal variations until the time of contact with Euro-Americans. The Archaic pattern is characterized by a hunting-gathering-fishing subsistence economy which is based on use of a broad spectrum of the environment's resources. Throughout the 10,000 years of the Archaic period there was a general tendency towards increasingly intensive exploitation of the natural resources, population growth, and a reliance on food sources dependent on more sophisticated processing and storage technologies, and a more sedentary way of life. By the time of Euro-American contact, most groups in the region had well developed social hierarchies, complex political and religious institutions, and trade contacts reaching almost the length of the Cascades and from the Coast to the Great Basin. A number of sites have been recorded and tested in the Bear Creek Valley that attest to the presence of Native people in the area from the Paleo-Indian era to the Late Archaic.

History: The following Rogue Valley history overview was extracted from compilations by Katherine Atwood (Gray and Atwood 2000, Atwood 1990). The earliest known Euro-American travelers visited southwest Oregon between 1827 and 1850. Groups of Hudson's Bay Company trappers, government explorers, entrepreneurs, and goldminers all passed through the Bear Creek valley, traveling a trail that roughly paralleled the stream. Hudson's Bay Company leader Peter Skene Ogden brought the first known fur-seeking expedition through the area in 1827 (LaLande 1987). His brigade diligently trapped along Bear Creek and the Rogue River, as well as along tributary streams.

Subsequent journeys by trappers Alexander McLeod in 1829, Michel LaFrambroise in 1832, and John Work in 1833, also used the trail along Bear Creek as their route. Ewing Young's stock-driving companies herded cattle through the area in 1834 and 1837. In September 1841, George F. Emmons led a detachment of the U.S. South Seas Surveying and Exploring Expedition through the Bear Creek Valley, and in 1845 adventurer James Clyman traversed the area while approaching the Siskiyou Mountains.

Beginning in 1846, a seasonal progression of travelers passed through the area. That year, Jesse and Lindsay Applegate, Levi Scott, and others established the Applegate Trail by blazing a wagon route through the Cascades from the Bear Creek Valley east toward Klamath Lake and beyond, to make a connection with the main Oregon Trail at Fort Hall. The following year, 11 settlers bound for the Willamette Valley took the new route. This new Southern Emigrant Road entered the valley from the Cascades east of Ashland and headed north along Bear Creek.

The discovery of gold in California in 1848 brought Gold Rush-bound prospectors through southwest Oregon. No permanent settlers arrived until a gold discovery on a Jackson Creek tributary in the winter of 1851-1852 brought a flood of miners into southern Oregon. In 1853, large numbers of farmers entered the southwestern Oregon valleys to claim land under the Federal Donation Land Claim Act of 1850.

As the number of miners and settlers in southwest Oregon increased, the resulting loss of their long-established hunting and fishing territories devastated Native peoples. Disease,

starvation, and displacement fostered bitter clashes between the Indians and the intruders between 1851 and 1856. By 1856, most Native residents of southwest Oregon had either been killed or removed to reservations in the northwestern part of the state. With the cessation of hostilities, communities quickly sprang up in the Bear Creek Valley. Flour mills and sawmills were constructed on area streams. Between the mid-1850s and the 1870s, settlers concentrated in lower elevation areas along streams that held both mineral wealth and agricultural opportunity. The valley floor and low foothills provided the supply of timber necessary to construct improvements.

These new emigrants followed the north-south trail that ran along Bear Creek. Named Stuart (or Stewart Creek) after Captain James Stuart, who was killed near its banks during an Indian uprising in 1851, the waterway was more commonly known by settlers as Bear Creek (Beeson n.d.). As travel increased, the trail along the stream evolved into a stage road, and by 1856 the California Stage Company provided regular service between Yreka and Jacksonville. Stage travel along the road would remain the primary means of transportation through area for the next thirty years.

Agricultural development in Jackson County, continued through the 1850s and 1870s. Settlers planted wheat, oats, corn, and fruit trees, as well as raised cattle, hogs, and sheep along the Bear Creek bottom lands. By the early 1890s, the area's first commercial orchards, planted the previous decade, were well established in the Bear Creek Valley. As the decade progressed, much of the land gradually shifted to fruit production (Kramer 1994:16).

Environmental Consequences

No Action

Cultural Resources
No impacts on cultural resources would occur, since there would be no construction.

TCP
No impacts to TCP would occur, since there would be no construction.

Proposed Action

Cultural Resources

On February 1, 2017, Reclamation sent pre-project consultation letters, notifying the following Tribes as to the location and intent of the cultural resource inventory by Cascade Research, LLC: Confederated Tribes of Grand Ronde, Confederated Tribes of Siletz, Cow Creek Band of Umpqua Indians, Quartz Valley Indian Reservation, Tolowa Dee-ni′ Nation, and Klamath Tribes. The Cow Creek Band of Umpqua Indians requested a copy of the final report.

Cascade Research conducted the records search at the SHPO in Salem, Oregon, and conducted the cultural resource surveys on the APE. Research at SHPO revealed the recording of a single, isolated pre-contact find, and a few lithic scatters.

Cascade Research conducted a pre-blackberry removal, cultural resource survey on March 2 and 3, 2017. The cultural resource inventory of the APE included all associated temporary access routes, staging and stock pile areas, and placement areas for the large wood structures. Bare mineral soil visibility was variable, especially along the creek where the blackberry thickets covered the break-in-slope down to the edge of Bear Creek. No historic or pre-

contact sites or isolated finds were noted during the course of surface inventory. Shovel probes were negative for pre-contact findings; however, two items of modern manufacture were recovered.

On April 17, 2017, Cascade Research conducted a second-stage cultural resource inventory. No pre-contact Native or historic cultural material was noted within the APE during the course of the inventory after removal of invasive vegetation (e.g., post-blackberry removal).

The Cow Creek Band of Umpqua Indians was sent a copy of the initial cultural resource survey on March 7, 2017, and the final, post-blackberry removal, cultural resource survey on May 26, 2017. Reclamation has developed an inadvertent discovery plan (IDP) at the request of the Cow Creek Band of Umpqua Indians, which would be provided to TFT. TFT would be responsible to ensure that onsite contractors have a copy of the IDP on-hand at all times.

Reclamation initiated consultation with the SHPO in a letter dated March 7, 2017, and did not receive a response within the 30-day comment period with regards to the initial, pre-blackberry removal cultural resource survey. Reclamation sent the final cultural resource survey report on May 2, 2017. Reclamation determined that Project 24.7 would have no effect on any significant archaeological objects or sites and that additional archaeological research is not anticipated for this project. Reclamation received a letter of concurrence from the SHPO on May 24, 2017. The SHPO reviewed the report and concurred that the project will likely have no effect on any significant archaeological objects or sites, and that additional archaeological research is not anticipated for this project.

TCP

Reclamation consulted with area Tribes to determine if TCP are present in the project vicinity. Reclamation did not receive responses from the Tribes.

Mitigation

No mitigation is needed.

CONSULTATION AND COORDINATION

Reclamation consulted Federal agencies, Tribes, and state agencies during the preparation of this EA.

ESA Section 7 Consultation

The effects of activities related to this action are addressed in Reclamation's BA and NOAA Fisheries' BiOp. The increase in WUA in Bear Creek and Little Butte Creek watersheds is a RPM of the BiOp, and addressed with specific T&C. Both the BA and the BiOp can be accessed online at http://www.usbr.gov/pn/programs/esa/oregon/rogue.

NHPA Section 106 Consultation

On February 1, 2017, Reclamation sent pre-project consultation letters to the Confederated Tribes of Grand Ronde, Confederated Tribes of Siletz, Cow Creek Band of Umpqua Indians, Quartz Valley Indian Reservation, and Klamath Tribes. The Cow Creek Band of Umpqua Indians was sent a copy of the cultural resource survey on March 7 and April 26, 2017.

Reclamation initiated consultation with the SHPO in a letter dated March 7, 2017, and did not

receive a response within the 30-day comment period with regards to the initial, pre-blackberry removal cultural resource survey. Reclamation sent the final cultural resource survey report on May 2, 2017. Reclamation determined that Project 24.7 would have no effect on any significant archaeological objects or sites and that additional archaeological research is not anticipated for this project. Reclamation received a letter of concurrence from the SHPO on May 24, 2017. The SHPO reviewed the report and concurred that the project will likely have no effect on any significant archaeological objects or sites, and that additional archaeological research is not anticipated for this project. The SHPO reviewed the report and concurred that the project will likely have no effect on any significant archaeological objects or sites, and that additional archaeological research is not anticipated for this project

Coordination

Reclamation used an interdisciplinary approach to prepare this EA to comply with the mandate of the NEPA to, "…utilize a systematic, interdisciplinary approach which would ensure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man's environment" (40 CFR 1501.2(a)). The following principal disciplines and resource specialists were involved with preparation of the EA:

- Elizabeth Heether, Environmental Protection Specialist, Reclamation
- Christine Horting-Jones, Archaeologist, Reclamation
- Richard Rieber, Fisheries Biologist, Reclamation
- Christopher Cuhaciyan, Hydraulic Engineer, Reclamation

Reclamation worked with the following agencies during the development of this EA:

- National Marine Fisheries Service
- Oregon State Historic Preservation Office
- Oregon Department of Fish and Wildlife
- Confederated Tribes of Grand Ronde Community
- Confederated Tribes of Siletz
- Cow Creek Band of Umpqua Indians
- Quartz Valley Indian Reservation
- Tolowa Dee-ni′ Nation
- Klamath Tribes

Reclamation staff have met with and or presented information to the following agencies and interest groups in an effort to accomplish the LWM objectives in both the Bear Creek and Little Butte Creek watersheds. Generally, meetings with these groups have involved informal discussions, meetings, and formal presentations with question and answer periods. Reclamation has also gone on several field tours with most of these agencies, stakeholder groups and prospective restoration contractors:

- Bear Creek Watershed Council
- Little Butte Creek Watershed Council
- Oregon Department of Fish and Wildlife
- Rogue Valley Council of Governments

- City of Medford, OR
- City of Ashland, OR
- Talent Irrigation District
- Rogue River Valley Irrigation District
- Medford Irrigation District
- Water for Irrigation, Stream and Economy Project Partners
- Individual Local Landowners
- The Freshwater Trust

Permits and Authorizations Needed

Per the Instream Habitat Restoration EA/FONSI, the following permit/authorization/review/exemption applications have been submitted for Project 24.7:

- U.S. Army of Corps of Engineers Nationwide Permit No. 27 (Aquatic Habitat Restoration, Establishment, and Enhancement Activities.
- Jackson County Type 1 Land Use Permit-Floodplain Development Permit.
- Oregon Department of State Lands Removal/Fill Exemption with notice for voluntary habitat restoration activities.
- Oregon Department of Fish and Wildlife concurrence on "Procedures for Generating Shade Credits."

The project would not commence until all applicable permits, authorizations, reviews, exemptions have been received by TFT and forwarded to Reclamation.

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Reclamation 2012b	Reclamation. 2012. *Decision Document Concerning NOAA Fisheries April 2012 Biological Opinion for the Future Operation and Maintenance of the Rogue River Basin Project, Talent Division.* Pacific Northwest Region. Bureau of Reclamation. May 2012.