

Indian Creek Connectivity Project Project Completion Report

September 14, 2020 - January 31, 2022

Contract #86083
Grande Ronde Model Watershed Project 1992-026-01
(Construction Funding)

Prepared By:
Levi Old, NE Oregon Project Manager

Trout Unlimited
Baker City, Oregon
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Indian Creek Connectivity Project 2021 Implementation

INTRODUCTION

Indian Creek originates in the Wallowa Mountains and flows into the Grande Ronde River near Elgin, Oregon. The creek's headwaters begin on Wallowa-Whitman National Forest land. Downstream of the forest boundary there is a mix of commercial and private timber lands, and an agricultural valley before the creek reaches its confluence with the Grande Ronde. The Indian Creek watershed is home to ESA-listed Snake River Chinook salmon, Snake River steelhead, bull trout, State-Sensitive Redband trout and Pacific Lamprey, as well as a suite of other important aquatic and terrestrial species. The project took place on private timber lands. The project area is a priority Tier 2 Reach in the Grande Ronde Basin ATLAS.

The Bonneville Power Administration's construction funding supported the removal of three in-stream passage barriers and their associated floodplain infrastructure (RMs 5.4 to 7.0). This included the placement of 26 large wood structures and over 30 pieces of floodplain wood for habitat complexity, and floodplain connectivity. This aquatic connectivity (passage barrier removal) focused effort opened over 10 miles of critical habitat for juvenile salmon, steelhead, bull trout, and other fishes. By removing infrastructure from the floodplain, the project reconnected 1.5 acres of historic floodplain habitat.

The project is a collaborative effort between Hancock Forest Management (now Manulife Investment), Trout Unlimited, Grande Ronde Model Watershed Council, Confederated Tribes of the Umatilla, Tetra Tech, and our funding partners. Trout Unlimited held the design and implementation contracts for the project.



PROJECT PRIORITY

Upper Grande Ronde River Restoration Atlas (BPA, GRMW) Grande Ronde River and Catherine Creek Restoration Geospatial Prioritization Atlas - The purpose of this science-based tool is to guide restoration practitioners in work that is most beneficial to aquatic ecosystems. The projects are ranked using biological benefit, and feasibility metrics. The focal species for conservation and restoration action include Chinook, steelhead and bull trout. Indian Creek is a Tier 2 Biologically Significant Reach. Passage barriers are considered a Tier 1 Priority by the Implementation Team.

NMFS [National Marine Fisheries Service]. 2014. Endangered Species Act Section 7(a) (2) Supplemental Biological Opinion. Consultation on Remand for Operation of the Federal Columbia River Power System. National Oceanic and Atmospheric Administration. NWR-2013-9562. - The NMFS Plan Identifies basin appropriate passage and limiting factors.

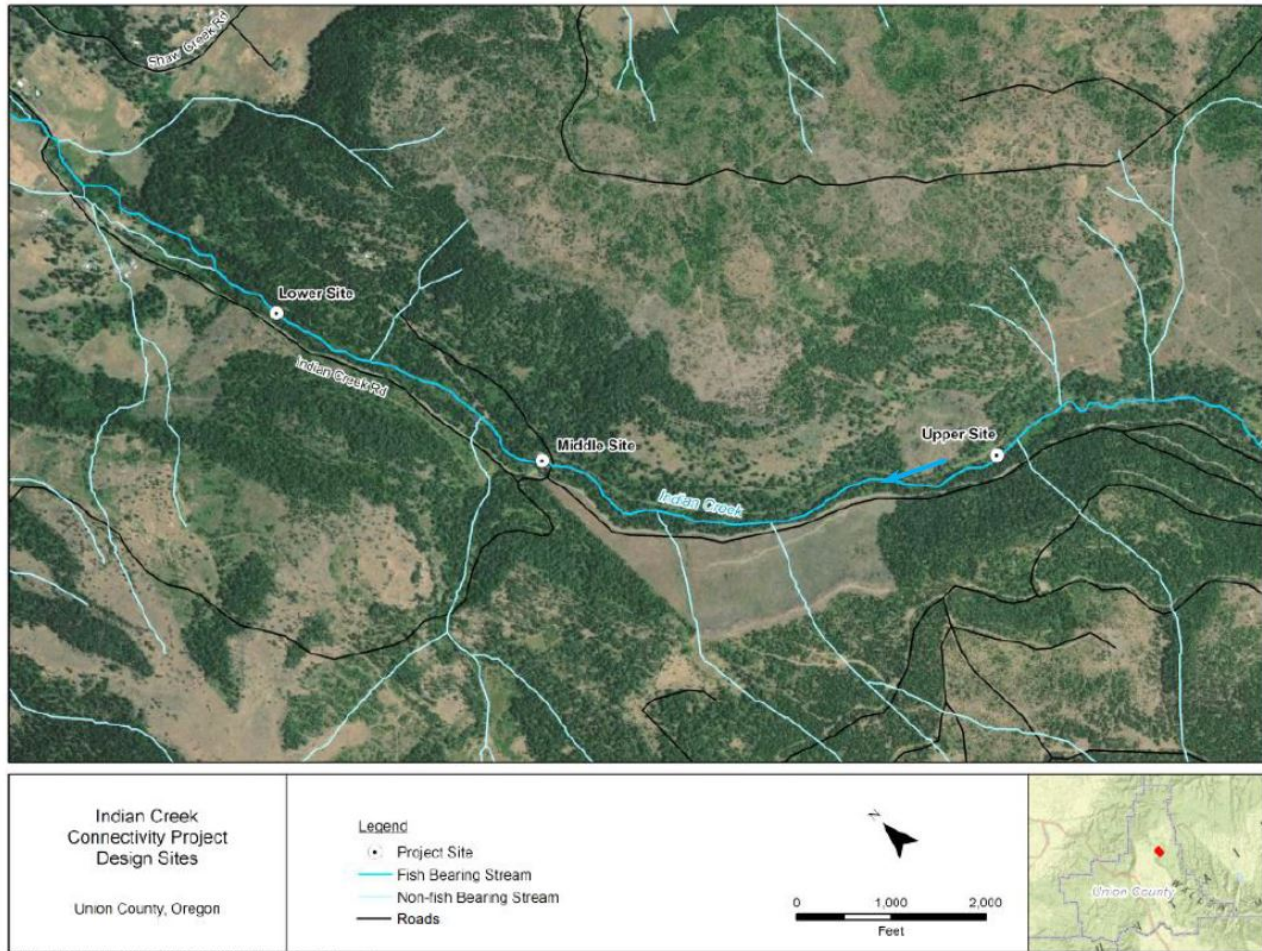


Photo (L): Upper site post construction



Photo (R): 3-Log LWD Structure - As-Built

PROJECT LOCATION – VICINITY MAP



PROJECT PURPOSE, GOAL, AND OBJECTIVES (from Basis of Design Report)

The overall purpose of this Project is to improve conditions for ESA-listed fish and other native fish species. TU and Tetra Tech established a goal for this Project which is to produce a detailed design that will provide formal procedures for restoring fish passage and habitat in Indian Creek, allowing partners to effectively construct the Project. Proposed Project elements will restore fish passage, and improve in-stream, riparian, and floodplain function and connectivity in Indian Creek to the benefit of aquatic species of concern. Included in this goal is the need to understand the hydrologic, geomorphic and ecological processes of Indian Creek to develop restoration techniques that make measurable improvements toward addressing identified key limiting factors. Progress toward the goal will complement appropriate land management strategies of the landowner and work in concert with established planning documents that include:

- Grande Ronde Subbasin Plan (NPCC 2005);
- ESA Recovery Plan for Northeast Oregon Snake River Spring and Summer Chinook Salmon and Snake River Basin Steelhead Populations (NOAA 2017); and

- Catherine Creek and Upper Grande Ronde River Atlas Restoration Prioritization Framework (Atlas) (BPA 2017).
- The Project is intended to restore ecological functions while maintaining protection of local infrastructure. To address the overall Project goal, the following Project objectives were identified:
 - Restore adult and juvenile fish passage at three existing barrier sites;
 - Increase channel complexity, with channel morphology closer to historical and natural form;
 - Increase quality and quantity of habitat, especially large wood and deep, complex pools;
 - Increase suitable adult holding and spawning habitat; and
 - Increase area suitable for juvenile summer and overwinter rearing, including cold water off-channel rearing, high-flow refugia, and foraging habitat.

Based on the Project goal and objectives, a variety of constructed and natural design elements were considered. Development of the design drawings (Attachment A) throughout the course of the Project included the 30 percent basis of design report and design drawings (Tetra Tech 2020a), and the 80 percent basis of design report and design drawings (Tetra Tech 2020b). Following the review of the 80 percent design by the design team made up of TU, GRMW, and BPA, this submittal consists of the Final (100 percent) Design and Implementation Plan, complete with construction drawings, construction specifications and special provisions, and conservation measures and best management practices (BMPs). This final (100 percent) design is stamped by an Oregon Professional Engineer and is ready to be issued for construction.



Photo: Fall riparian planting effort.

PROJECT OUTCOMES

- **Removed 3 fish passage barriers from the stream (two diversion dams and 1 old culvert with a bridge bed). There is over 10 miles of habitat upstream of the barriers.**
- **Built 26 large wood structures and placed over 30 pieces of floodplain wood for habitat complexity and floodplain connectivity.**
- **Opened 1.5 acres of historic floodplain by removing old berms, a roadbed, headgate, piping, and an old pumphouse.**
- **Planted 1,000+ riparian shrubs for rehab and riparian plant community recovery.**

PROJECT PHOTO GALLERY



Photo (L & R): Diversion dam removal at middle site on Indian Creek Project.



Photo: Channel spanning LWD Structure at middle project site where diversion dam used to reside.



Photo (L): Removal of old culvert and roadbed at the middle site. Photo (R): Deflector LWD Structure at middle project site.

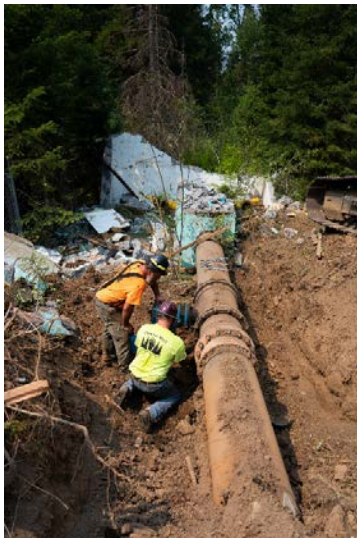


Photo (L): Contractors dismantle floodplain infrastructure at middle project site.
Photo (R): Contractors remove headgate from upper site alcove area and daylight water into historic floodplain.



Photo: Channel spanning LWD structure at lower site downstream of dam removal location.



Photo: Chinook salmon spawning in the project area right after construction equipment left the site.