

# Bear Creek Coastal Cutthroat Trout Habitat Connectivity and Enhancement

**State(s):** Oregon

**Managing Agency/Organization:** Long Tom Watershed Council and Bureau of Land Management

**Type of Organization:** Nonprofit Organization/Federal Government

**Project Status:** Underway

**Project type:** WNTI Project

**Project action(s):** Riparian or instream habitat restoration, Barrier removal or construction

**Trout species benefitted:** coastal cutthroat trout

**Population:** Long Tom River Watershed, Bear Creek

The project will reconnect 5.5 miles of high-quality headwater spawning habitat and cold water refugia and enhance a one mile stretch of in-stream habitat for coastal cutthroat trout in western Oregon. As part of the project, four, human-made fish passage barriers will be remedied on Bear Creek, an Oregon Coast Range tributary to Coyote Creek about nine miles southwest of Eugene that provides spawning habitat and cold water refugia for coastal cutthroat trout. Three of these barriers are culverts and the other is a dam. The project will leverage significant contributions from the Bureau of Land Management (BLM) Eugene District, Oregon Watershed Enhancement Board, as well as the BLM Resource Advisory Committee to remedy fish-passage barriers on private, BLM, and Lane County Public Works property, resulting in the removal of the final four priority barriers in Bear Creek and the connection of mainstem Coyote Creek to high-quality headwater habitat.

Additional project objectives are to place 60 conifer logs in a 0.5 mile stretch of Bear Creek to increase pool depth and frequency and improve in-stream habitat complexity. Effects of the project will be assessed on the physical habitat and fish community in Bear Creek by conducting pre- and post-project rapid bio-assessment snorkel surveys and large woody debris surveys. Finally, an educational tour for neighbors and the public will be organized about the status and habitat needs of coastal cutthroat trout and the impact of the project.

## Objectives:

The objective of the project is to improve the viability of coastal cutthroat trout populations in the Coyote Creek watershed by increasing habitat complexity and enhancing habitat connectivity by removing passage barriers. Three perched culverts (on BLM, Lane County, and private forest roads) will be replaced with stream-simulation culverts that provide year-round passage. A seven-foot vertical headcut on a bypass channel that would otherwise provide passage around a private dam will be repaired with the installation of a step-pool complex. 60 conifer logs, 15 with their root wads attached, will be placed in a one-half mile stretch of Bear Creek.

These objectives support the WNTI Strategic Plan by accomplishing needed project activities for coastal cutthroat trout listed in the plan. The Oregon Department of Fish and Wildlife (ODFW) Oregon Conservation Strategy lists migration barriers and other factors that increase population isolation as limiting factors for upper Willamette coastal cutthroat trout. The addition of large wood is listed as a special need for coastal cutthroat, and restoring habitat complexity is proposed as a conservation action. Increasing the supply and recruitment of large wood is listed as a strategy to help restore processes that maintain watershed health. All proposed activities are listed as high priorities in the Oregon Watershed Enhancement Board Willamette Basin Restoration Priorities. The Draft Willamette Sub-basin Plan (Northwest Power and Conservation Council, 2004) identifies fish passage barriers as a limiting factor to adult and juvenile cutthroat trout across the entire Willamette River Watershed. Increasing the supply and recruitment of large wood is listed as a strategy to help restore processes that maintain watershed health.

The project will provide year-round fish passage to headwater spawning and cold water refuge habitat for resident, adfluvial, and fluvial life histories of coastal cutthroat trout as well as western brook lamprey. Log placements will increase the frequency and variability of deep pools and encourage the retention of sediments used by both fish species. Both coastal cutthroat trout and western brook lamprey are Oregon Conservation Strategy Species, coastal cutthroat trout are a USFWS species of concern, and brook lamprey are an Oregon Department of Fish and Wildlife species of concern.

## Partners:

- Long Tom Watershed Council
- Bureau of Land Management Eugene District Resource Advisory Committee

- Bureau of Land Management Eugene District Fisheries Program
- Oregon Watershed Enhancement Board
- US Fish and Wildlife Service
- Lane County Public Works
- Meyer Memorial Trust
- Private landowner

**Measures:**

The effectiveness of the proposed project will be evaluated by comparing the pre- and post-project results of the following monitoring activities. Successful implementation of the project will be documented by the compilation of pre- and post-project photos taken from the same point at each project site, depicting the successful construction of fish passage or habitat enhancement projects. Photo-points will be monitored following Oregon Watershed Enhancement Board guidelines. Photo-point monitoring results will be submitted with the WNTI final report. Long Tom Watershed Council staff or qualified contractors will implement all monitoring.

1. **Coastal cutthroat trout distribution and density:** The density of coastal cutthroat trout (juveniles and adults per square meter of pool) will be measured using rapid bio-assessment snorkel surveys. Every 5th pool will be snorkel surveyed to determine species present, abundance, and age class for coastal cutthroat trout. Bear Creek will be surveyed from its mouth upstream past the log placement treatment area.
2. **Increased abundance of large wood:** Pieces of large wood within the active channel will be enumerated.

Project maintenance: Lane County and BLM staff will be responsible for the maintenance of their respective culvert sites. The private landowner and Long Tom Watershed Council will cooperatively maintain the components of the project on the private landowner property.

**Funding Source(s):** National Fish Habitat Action Plan, U.S. Fish and Wildlife Service Fish Passage Program

**Project cost:** \$34,750 .00

**Start Date:** 07/01/2015 **Completion Date:** 9/30/2016

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