



# OWENS CREEK FISH PASSAGE & HABITAT RESTORATION AT BARROWS'

## PROJECT BACKGROUND & DESCRIPTION

Owens Creek, a major tributary in the Bear Creek sub-basin, is an important stream for native fish like cutthroat trout and lamprey in the Long Tom Watershed. The upper reaches of Owens Creek and its tributaries contain excellent spawning and cold water refuge habitat. Impassable barriers such as undersized culverts can limit the seasonal migration, growth, and reproduction of cutthroat trout.

The Long Tom Watershed Council worked with the Barrows family to enhance habitat for fish and native wildlife on their property. The Barrows are river guides and love native fish. LTWC removed two barriers that prevented native fish from moving upstream. A bridge was installed on Owens Creek to replace the undersized culvert that was much narrower than the width of the stream during winter levels, creating high velocity flows that prevented fish from moving upstream. Another made of dirt and buried logs on a tributary to Owens Creek also blocked access to excellent trout spawning habitat and was replaced with a fish-friendly culvert.

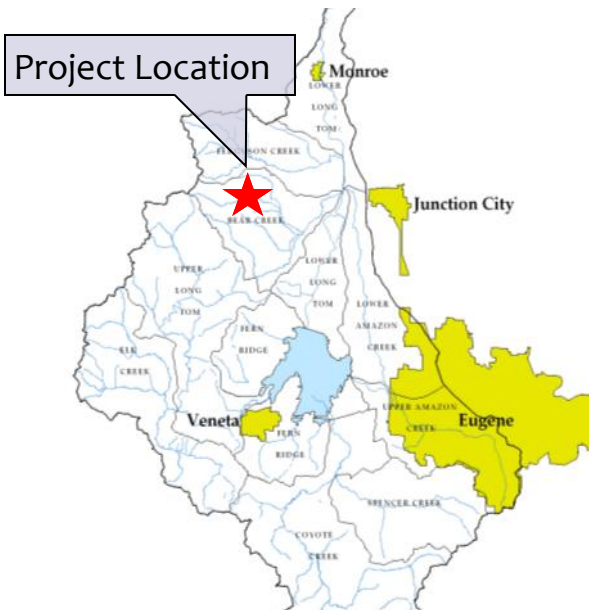
Habitat complexity and diversity was improved by placing large conifer logs in the stream and removing invasive species from the riparian area. Native trees and shrubs were planted along the stream in 2013.



**Before the Project:** This undersized culvert on Owens Creek impaired fish passage during most flows.



**After the Project:** The culvert was replaced with this 40' railcar bridge over Owens Creek.



## PROJECT FUNDING & PARTNERS

**Total Project Cost:** **\$85,377**

### Funding & Partners

- Barrows family (landowners)
- Oregon Watershed Enhancement Board (OWEB)
- National Fish & Wildlife Foundation—Oregon Governor's Fund
- U.S. Fish & Wildlife Service Finley Refuge
- U.S. Bureau of Land Management
- Conservation Reserve Enhancement Program (CREP)



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**Implementation (above):** Local contractor places large conifer log with a rootwad into Owens Creek. These logs create cover and habitat for fish & aquatic insects.

Before the project, invasive Reed canarygrass, Scot's broom, blackberry & other weeds covered much of the habitat along the stream (**top right**). After the project, 6,000 native trees & shrubs were planted (**lower right**).



Pre-Project



Post-Project

## RESTORATION TECHNIQUES

### **Removed Fish Passage Barriers**

- Replaced undersized culvert with 40' railcar bridge.
- Replaced another barrier with a stream-simulation pipe arch culvert.

### **Enhanced Instream Habitat**

- Installed 30 pieces of large wood, donated by Finley Wildlife Refuge.
- 3 log jams were created from 8-10 logs and rootwads each.
- Structures were wedged into existing trees or logs were driven into the bank to increase their stability.

### **Improved Streamside Habitat**

- Removed invasive Reed canarygrass, blackberry, scot's broom, yellow flag iris, and purple loosestrife.
- Planted 6,000 native trees and shrubs over 1.6 acres.

## HABITAT & ECONOMIC BENEFITS

- Removal of barrier culverts allowed cutthroat trout to access 1.5 miles of excellent upstream habitat. It also reduced downstream bank erosion and stream turbidity from high water velocity.
- Logs placed in the stream will create cover and scour pools for trout. As the logs decompose they provide food for aquatic insects, which are the primary food source for trout.
- Riparian plantings will increase shade in the long-term, leading to cooler water temperature. These trees & shrubs also provide better bank stability and create forage and cover for native wildlife.
- Contractors from the local area were used for all phases of the project. This contributes to the local economy.

The Long Tom Watershed Council thanks our partners and funders!