



FISH PASSAGE AND RIPARIAN ENHANCEMENT AT DECK FAMILY FARM

PROJECT BACKGROUND & DESCRIPTION

This project focused on improving water quality, riparian condition, and fish passage. Deck Family Farm is approximately seven miles west of Junction City on Owens & Turnbow Creeks—tributaries to Bear Creek. The 320-acre farm is certified organic for beef, poultry, and the land they raise it on.

An undersized culvert on the south side of the property on Owens Creek created a passage barrier for cutthroat trout and other native aquatic species. The culvert was perched about six inches and high water velocities during winter created a barrier. Cutthroat trout, especially juveniles, often cannot maneuver through excessive water velocities or navigate culverts that are perched more than six inches.

High water temperature in the summer and lack of spawning habitat are currently limiting cutthroat productivity in the Long Tom Watershed. This makes it particularly important for fish to access the upper stream reaches that have cooler summer stream temperatures and spawning gravels.

The project also included constructing a fence to separate grazing pastures from the riparian area adjacent to Turnbow Creek. Livestock manure can lead to high levels of bacteria such as *E. coli* in the stream. Grazing of native riparian vegetation can lead to bank erosion and invasion from non-native species such as Himalayan blackberry. Fencing allows livestock to utilize the same pastures while improving water quality conditions.

RESTORATION TECHNIQUES

- ◆ Removed an undersized culvert, approximately six feet in diameter. Replaced culvert with a bridge constructed of metal I-beams and wood decking. The foundation for the bridge is concrete footings. This crossing will accommodate year-round vehicle and livestock traffic.
- ◆ Installed a “fish-friendly” screen that prevents juvenile fish & amphibians from being sucked up into irrigation intake devices.
- ◆ Installed riparian fencing along the edge of a pasture adjacent to Turnbow Creek.
- ◆ Planted native trees and shrubs along the riparian area of Turnbow Creek.



Before the project: Undersized culvert on Owens Creek that will be replaced with a bridge to accommodate crossing vehicle and livestock traffic. Note that the culvert’s outlet is perched above the stream, and its diameter is much smaller than the stream’s winter width.



Implementation: This new bridge replaced the undersized culvert at Deck Family Farm.

PROJECT FUNDING & SUPPORT

Project Cost:	\$ 86,410
OWEB funding:	\$ 64,592
CREP funding:	\$ 11,818
BLM RAC funding:	\$ 10,000
Landowner Match:	\$ 6,750

Partners

John & Christine Deck, *Landowners*
Oregon Watershed Enhancement Board grant

DECK FAMILY FARM (CONTINUED)

ENVIRONMENTAL & ECONOMIC BENEFITS

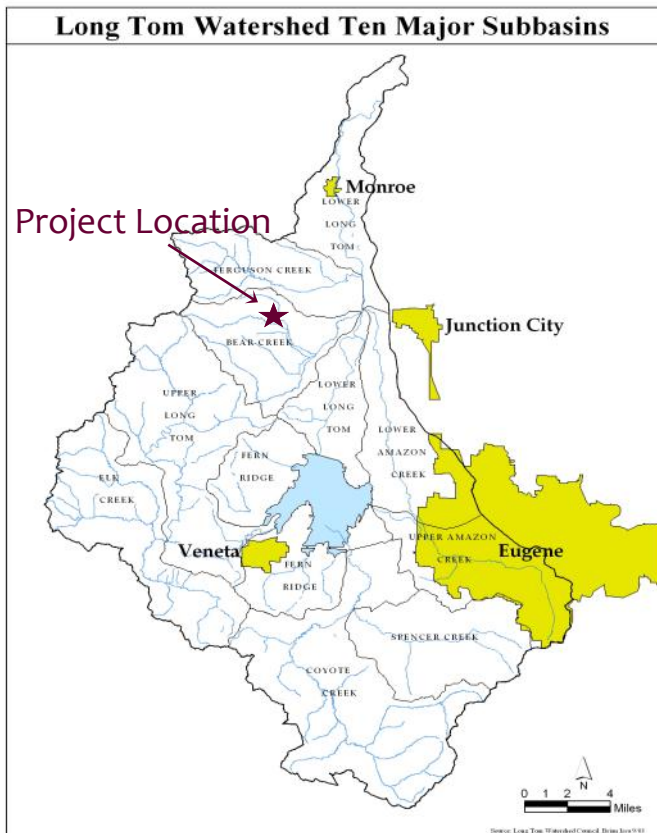
- ◆ Approximately 6.5 miles of high quality spawning and rearing habitat were opened up for cutthroat trout and other aquatic species.
- ◆ Improved water quality by reducing *E. coli* levels and nutrient concentrations are expected in Turnbow Creek.
- ◆ Improved riparian conditions on over 3,000 feet of Turnbow Creek.
- ◆ Newly planted native trees & shrubs will stabilize the stream banks, reduce erosion and stream turbidity, and provide habitat for native wildlife. When mature, these trees will also shade the stream and reduce water temperature.
- ◆ Improving the intake screening of the existing irrigation system decreases mortality of juvenile fish and amphibians.



Bridge Construction: Support structure for bridge. Steel I-beams are connected to concrete footings set into the channel bank. Wood decking will be laid across the bridge. Rock rip rap is position at the base of the concrete footings.



Area of Turnbow Creek before fencing (above). Livestock had access to the stream. Note the narrow riparian area and lack of vegetation. In 2011, Turnbow Creek was fenced and marked for planting.



The Long Tom Watershed Council thanks our partners and funders!