Owens Creek Riparian and Stream **Enhancement at McFadden's**

Project Background & Description

Owens Creek, a major tributary in the Bear Creek sub-watershed, is a priority stream for fish passage, water quality and instream habitat improvement. The Bear Creek sub-watershed provides habitat for both resident cutthroat trout and the larger fluvial cutthroat that migrate to and from the Willamette River. Fish passage barriers and poor water quality conditions threaten the local cutthroat trout population. In particular, high summertime water temperatures in streams on the valley floor combined with impassable culverts or dams can limit growth and reproduction. Removing these barriers and improving summer water temperatures are important steps to protecting trout. In addition, preventing livestock manure from reaching streams and improving instream habitat and streamside vegetation has been shown to benefit trout and many other native aquatic species.

The stretch of Owens Creek at McFadden's has never been straightened and had mature native trees and shrubs in about half of the riparian area. These features provided an excellent foundation on which to improve trout habitat by watering cattle away from the stream and its banks, eradicating Himalayan blackberry, planting more native trees and shrubs, and adding large wood to the stream to improve trout habitat.

Project Location

Before the project: About half of the riparian area was dominated by non-native Himalayan black-berry and in places lacked a canopy to provide shade for the stream.

After the project: Non-native blackberry has been eradicated from the riparian area and native trees and shrubs have been planted in its place. Fencing and off-stream water for cattle will allow vegetation growth.

Project Funding & Support

Project Cost:	$ 64,104
Streambank Funding:	$ 52,553
Landowner Match:	$ 11,551

Partners

Joe McFadden, *Landowner*
Streambank (a program of Freshwater Trust)
Neighboring landowners and volunteers
Long Tom Watershed Council

Owens Creek at McFadden's (Continued)

Restoration Techniques

Riparian enhancement techniques included mowing blackberry in the riparian area with an excavator, spot spraying regrowth with herbicide, planting 2,500 native trees and shrubs along 3,000 feet of stream, and installing 5,800 feet of 5-strand electric fence to water cattle away from the riparian area of Owens Creek and a tributary with two off-channel watering stations to replace former water access to the creek. One of these stations uses a solar-powered pump to draw water from the creek.

Over a dozen species of native trees and shrubs were planted to create a diverse and multi-layered riparian forest, including Oregon ash, ponderosa pine, vine maple, crabapple, red flowering currant, and Oregon grape. Trees and shrubs were tubed to improve growth and protect them from browsing herbivores. Also, the landowner sprayed out the grass around the trees to eliminate competition for moisture. Maintenance for the first two years of plant establishment usually includes mulching, watering, and re-positioning or removing tubes.

Forty large conifer logs, most with rootwads attached, were placed in Owens Creek. Logs were wedged into existing riparian trees or at bends in the stream. Some of these were dead trees from the project site and others were contributed by neighboring landowners.

Environmental & Economic Benefits

- Riparian plantings will increase shade in the long-term, leading to cooler water temperature. These trees & shrubs also provide better bank stability than blackberry, and create forage and cover for native birds, mammals and amphibians.
- Watering livestock off-stream protect the new trees and shrubs, improve bank stability, and prevent *E.coli* from contaminating the creek.
- 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.
- Contractors from the surrounding area were used for all phases of the project which contributed to the local economy.

An excavator places logs with rootwads in Owens Creek to provide habitat for cutthroat trout and other native aquatic species.

Log jams like this will provide cover and create more pool habitat for cutthroat trout.

Effectiveness Monitoring

- Annual snorkel & stream surveys to gauge response of fish populations and stream geomorphology to large wood placement
- Large wood count to determine fate of placed wood and recruitment of new wood
- Annual vegetation plot surveys to determine percent cover of non-native blackberry and survival of native trees and shrubs.

The Long Tom Watershed Council thanks our partners and funders!