

## Maggie Creek fish migration barrier to protect a Lahontan cutthroat trout population in the Maggie Creek Subbasin, Nevada

**State(s):** Nevada

**Managing Agency/Organization:** U.S. Fish and Wildlife Service

**Type of Organization:** Federal Government

**Project Status:** Completed

**Project type:** WNTI Project

**Project action(s):** Fish passage

**Trout species benefitted:** Lahontan Cutthroat

Maggie Creek subbasin contains seven Lahontan cutthroat trout (LCT) populations with roughly 28 miles of occupied habitat in the Humboldt DPS. An estimated 94 miles of potential LCT habitat occurs within the subbasin. Maggie Creek is one of three recovery subbasins (11 total) that currently does not contain nonnative trout species. A permanent barrier will be built at the base of the subbasin to prevent any upstream migration by nonnatives. Two proposed sites have been selected by Humboldt DPS team members and are awaiting expert reviews.

Maggie Creek drains into the Humboldt River approximately 20 miles west of Elko, Nevada. Maggie Creek supports Lahontan cutthroat trout (LCT), a federally listed threatened species. The Maggie Creek Basin including tributary streams, Coyote, Little Jack, and Beaver creeks, represents one of few remaining systems supporting an LCT metapopulation (interconnected population with potential for genetic mixing).

In an effort to improve habitat for LCT, the Maggie Creek drainage has been the focus of comprehensive watershed restoration efforts involving Newmont Mining Corporation (Newmont), Elko Land and Livestock, the Elko District Bureau of Land Management (BLM), U.S. Fish and Wildlife Service, Trout Unlimited, Nevada Department of Wildlife (NDOW) and other partners beginning in the early 1990's (Figures 1 and 2).



*Figure 1. Maggie Creek, October, 1980. Up until 1993, the majority of Maggie Creek was grazed by cattle throughout the growing season resulting in complete loss of riparian vegetation and very degraded stream conditions.*



*Figure 2. Maggie Creek, June, 2008. Changes in livestock grazing practices in the Maggie Creek basin have resulted in dramatic improvement in stream and riparian habitat conditions throughout the basin. As part of the effort to restore the Maggie Creek Basin for LCT, culvert barriers were replaced with structures designed for fish passage in the fall of 2005. Trout Unlimited, in cooperation with BLM and other partners, has been conducting studies on movements and distribution of LCT in response to both habitat improvement and barrier removal.*

Although efforts to improve riparian habitat in the Maggie Creek Basins for the benefit of LCT and other species have been very effective, nonnative fish species from the Humboldt River pose a significant threat to the recovery effort. State and federal biologists are concerned that better water and habitat conditions are making Maggie Creek increasingly attractive to nonnative bass and rainbow trout present in the Humboldt River. Smallmouth bass have recently been documented in the lower reaches of Maggie Creek below the area of occupied cutthroat habitat. Construction of fish barriers on the lower reaches of Maggie Creek would prevent invasion of nonnative fish thus protecting LCT in the headwaters and ensuring habitat restoration efforts to promote population recovery or expansion are successful.

#### **Scope of Work**

Design and construct a fish barrier in lower reaches of Maggie Creek (below area of occupied Lahontan cutthroat trout habitat) by fall of 2009.



Figure 3. Bridge culverts under road to Newmont Mining Corporation's Cooling Towers.



Figure 4. Potential barrier site location in the Maggie Creek Canyon "Narrows".

**Objectives:**

- The objective of this project is to protect one of the few remaining subbasin populations that is not impacted by nonnative species before nonnatives access the area.

**Partners:**

- Barrick Goldstrike Mines, Inc.
- Bureau of Land Management, Elko District
- Nevada Department of Wildlife
- Newmont Mining Corporation
- Trout Unlimited

**Funding Source(s):**

- National Fish Habitat Action Plan

**Project cost:** \$138,800.00

**Start Date:** 01/01/2008 **Completion Date:** 04/01/2009