

Eagle Creek Yellowstone Cutthroat Trout Connectivity

State(s): Montana

Managing Agency/Organization: U.S. Forest Service – Custer Gallatin National Forest

Type of Organization: Government

Project Status: Ongoing

Project type: WNTI Project

Project action(s): Barrier Removal, Watershed Connectivity, Monitoring, Education/Outreach. Removal of 2 barriers, reconnection of 2.8 miles of stream, restoration of 4.7 stream miles. One population assessment.

Trout species benefitted: Yellowstone Cutthroat Trout

Population: Eagle Creek – Upper Yellowstone River

Project summary: Eagle Creek is a second-order stream located near Gardiner Montana that flows from its headwaters on the Custer Gallatin National Forest to its confluence with the Yellowstone River in Yellowstone National Park. It is one of just four Yellowstone River tributaries in the Gardiner Basin that support Yellowstone Cutthroat Trout (YCT) conservation populations having upstream reaches secure from nonnative brook trout competition and rainbow trout hybridization. An in-channel pond and five road culverts that have excluded these nonnative species have simultaneously fragmented YCT habitat along its 6.6 stream miles (including Davis Creek, its primary tributary). Environmental DNA sampling and electrofishing have confirmed that there is only 1.9 stream miles occupied by YCT above a barrier culvert that is excluding nonnative brook trout. By replacing two upstream perched culverts located on upper Eagle Creek and Davis Creek with aquatic organism passage (AOP) culverts, this project would increase secure YCT habitat by an additional 2.8 stream miles (147% increase) for a total of 4.7 secure stream miles (147%). Access to these upstream habitats would increase the long-term persistence of this YCT conservation population. Funding is requested to replace one undersized, perched culvert on upper Eagle Creek and one undersized perched culvert on Davis Creek with aquatic organism passage structures meeting Forest Service stream simulation criteria. The existing perched culverts would be replaced with sunken 10-foot-wide pipe arches. The pipe arches would meet stream simulation criteria by accommodating discharge up to the 100 flood event, spanning the bankfull channel, and by having streambanks constructed through the crossing.

Problem the Project Addresses: The Custer Gallatin National Forest, Montana Fish, Wildlife and Parks, and Yellowstone National Park are working collaboratively to conserve Yellowstone Cutthroat Trout (YCT) populations in the upper Yellowstone River drainage. YCT conservation in the Upper Yellowstone requires a two pronged strategy comprised of maintaining connectivity to spawning tributaries for fluvial YCT in the Yellowstone River while securing resident headwater populations from competition and hybridization with nonnative salmonids. Eagle Creek supports one such resident population identified as a conservation population in the [Yellowstone Cutthroat Trout Conservation Strategy for Montana](#) and the [YCT status assessment](#). According to the Strategy (page 35), conservation planning for Eagle Creek should include improving connectivity by replacing perched culverts. Simultaneously replacing two undersized perched culverts in the Eagle Creek drainage with aquatic organism passage culverts meets WNTI priorities by restoring habitat impacted by human activities thus increasing the viability of a resident YCT conservation population. Geographically, this project is important because Eagle Creek is only one of four Yellowstone River tributaries in the Gardiner Basin with headwater resident populations secure from competition and hybridization with nonnative fish. Located within six miles of the community of Gardiner, this project provides an opportunity for place-based education about native fish conservation in the Gardiner School System as part of the Watershed Warriors Program.

Objectives: Through partnership with the U.S. Fish and Wildlife Service, Montana Fish Wildlife and parks, the U.S. Forest Service and WNTI, this project will replace two undersized and perched culverts with aquatic organism passage culverts thus reconnecting 2.8 miles of stream habitat on Eagle Creek secure from nonnative fish invasion for YCT. Its proximity to the community of Gardiner Montana creates a unique opportunity for place-based education about native trout conservation in the Gardiner School system as part of the Watershed Warriors Program.

Partners: Project partners to date include:

- U.S. Forest Service – Custer Gallatin National Forest
- U.S. Fish and Wildlife Service
- Montana Fish Wildlife and Parks
- Western Native Trout Initiative

Project Monitoring: Project success will be evaluated through implementation of a five-year monitoring plan. Objectives of the plan will address colonization and use of reconnected habitat through annual electrofishing. Results will be quantified in terms of miles of habitat occupied annually and change in YCT density in each of three monitoring reaches. Clint Sestrich, the Custer Gallatin National Forest Absaroka Beartooth Zone Fisheries Biologist will be responsible for annual monitoring and reporting to partners.

Funding Source(s): National Fish Passage Program

Project cost: \$48,467

Start Date: 07/07/2020 **Completion Date:** 09/30/2020

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