

## West Pass Creek Yellowstone Cutthroat Trout Restoration

**State(s):** Wyoming

**Managing Agency/Organization:** Wyoming Game and Fish Department

**Type of Organization:** State governmental agency

**Project Status:** Underway

**Project type:** WNTI Project

**Project action(s):** Construction of temporary and permanent fish passage barriers; Expansion of Yellowstone Cutthroat Trout habitat

**Trout species benefitted:** Yellowstone Cutthroat Trout

**Population:** West Pass Creek

**Project summary:** The West Pass Creek Yellowstone Cutthroat Trout (YCT) restoration project is a cooperative effort led by the Wyoming Game and Fish Department (WGFD). The multi-phased project involves removing nonnative trout from the North Fork of West Pass Creek (North Fork) and establishing a temporary fish barrier on the North Fork to protect pure YCT. Following treatment, native YCT from the South Fork of West Pass Creek (South Fork) will be relocated to the protected segment of the North Fork. Subsequent phases entail completing a permanent barrier on the main stem of West Pass Creek (main stem) and eliminating nonnative trout from the South Fork and the segment of main stem above the permanent barrier. Native YCT will be redistributed to the South Fork and allowed to expand to the main stem. Completion of the project would expand native YCT from about two stream miles in the South Fork to a six mile stream network. The expansion is expected to boost YCT recruitment and the resiliency of YCT in the West Pass Creek drainage.

**Problem the Project Addresses:** The West Pass Creek YCT project area includes three landownerships: a private landowner, Kerns Wildlife Habitat Management Area administered by WGFD, and a segment of the Bighorn National Forest in the headwaters of the South Fork. The ranch is protected under a conservation easement held by the Nature Conservancy. The North and South Forks, and main stem support YCT, brown trout, and brook trout. The South Fork supports one of five remnant native YCT populations on the east slope of the Bighorn Mountains. According to WGFD estimates, YCT historically occupied 255 stream miles around Sheridan, WY. Now, native YCT occupy about 14 stream miles (6%). The West Pass Creek watershed possesses the greatest potential to expand YCT populations among the five remnant populations on the east side of the Bighorn Mountains in Wyoming.

The decline and isolation of YCT in the South Fork is primarily due to competition with brown and brook trout. Constructing barriers, removing introduced trout and redistributing native YCT will extend the distribution of YCT from the predominately colluvial valley type of the South Fork to the more productive, lower elevation alluvial valley type along the main stem. The expansion is expected to boost YCT recruitment and the resiliency of the West Pass Creek YCT population(s). In total, restoration will expand the YCT population from 2.2 stream miles to 6 stream miles including the North and South Forks and 1.7 stream miles of the main stem.

**Objectives:** As per identified management strategies, WGFD personnel in cooperation with partners propose to:

- 1) design and install a temporary barrier on the North Fork to create a stream reach for pure YCT (2016-2018),
- 2) remove non-native trout from the North Fork above the temporary barrier (2017-2019),
- 3) move the native YCT population in the South Fork to the North Fork above the temporary barrier (2019),
- 4) design and install a permanent barrier downstream on West Pass Creek (2016-2019),
- 5) remove non-native fish between the permanent and temporary barriers and also up the South Fork (2019-2021), and
- 6) expand the native YCT population to the entire six mile stream network above the permanent barrier (2021).

WGFD funded the engineering designs for the barriers located on the ranch and will oversee all elements of their construction. Funding from WNTI is needed for implementation of the permanent barrier scheduled in 2019.

### Partners:

- Wyoming Game and Fish Department
- Wyoming Wildlife and Natural Resource Trust
- The Nature Conservancy

- U.S. Forest Service – Bighorn National Forest
- U.S. Fish and Wildlife Service
- Trout Unlimited – Little Bighorn Chapter
- Private landowner

**Project Monitoring:** Construction of the barrier projects will be overseen by WGFD personnel and design consultants. An agreement with the private landowner allowing WGFD to monitor and maintain the proposed barriers. The success of the YCT restoration will be evaluated via presence/absence surveys using backpack electro-fishing and eDNA sampling. Ultimately, population survey stations will be sampled in the tributaries and main stem segments, and repeated on a periodic basis.

**Funding Source(s):** National Fish Habitat Action Plan

**Project cost:** \$35,000

**Start Date:** 09/01/2018 **Completion Date:** 12/31/2019

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