

Leandro Creek Restoration Project

State(s): New Mexico

Managing Agency/Organization: Turner Enterprises Inc.

Type of Organization: Private corporation

Project Status: Underway

Project type: WNTI Project

Project action(s): Fish barrier construction

Trout species benefitted: Rio Grande Cutthroat Trout

Population: Leandro Creek, Vermejo River drainage, Canadian River Basin

Project summary: Leandro Creek originates on the northern slope of Little Costilla Peak inside the Carson National Forest with roughly 2.5 miles of exclusively Rio Grande Cutthroat habitat. Currently a wooden fish migration barrier exists on Vermejo Park Ranch 0.25 miles below the Carson National Forest property boundary. The remaining 10 miles of Leandro Creek and its 1.2 miles of inhabited tributary streams occur entirely within the boundaries of Vermejo Park Ranch (VPR). Similar to the entire upper Vermejo River basin, Leandro Creek on Vermejo Park Ranch is home to an aboriginal population of Rio Grande Cutthroat Trout and a non-native population of brook trout. In the Vermejo system the two species co-exist with the aid of instream management efforts. Since 2011, Turner Enterprises, Inc. has suppressed brook trout populations in the Vermejo system and Leandro Creek to promote Rio Grande Cutthroat Trout. The proposed Leandro Creek Restoration project area would extend the 2.5 miles of exclusive Rio Grande Cutthroat Trout water on the neighboring public land onto the next 5.25 miles of Leandro Creek below the wooden barrier.

The Leandro Creek Restoration project requires the construction of a fish migration barrier. The barrier will be located approximately 5.5 miles from the confluence of Leandro Creek with the Vermejo River. In total, the barrier will isolate and protect an additional 5.25 miles of Leandro Creek headwater stream from future non-native fish invasion. Upon completion of the barrier, Turner Enterprises Inc. (TEI) will work with appropriate partners to eliminate all non-native fish from the project area. If successful, this project will more than double the current habitat exclusively occupied by Rio Grande Cutthroat Trout in the entire Vermejo river basin.

Problem the Project Addresses: Rio Grande Cutthroat Trout currently occupy approximately 12% of their historically occupied habitat across three river basins - the Rio Grande, Pecos, and Canadian. Within the Canadian River basin, Rio Grande Cutthroat exist in 12 distinct populations, occupying 10% of historic range. Leandro Creek is one of these populations. The aboriginal population of Rio Grande Cutthroat Trout that once inhabited all of the Vermejo Basin has suffered from direct competition with non-native trout. Historically stocked brook trout have spread and established viable populations throughout the watershed. Brook Trout displace and at times prey upon Rio Grande Cutthroat Trout. Additionally, riparian habitat degradation due to grazing practices has challenged Rio Grande Cutthroat Trout long-term persistence. Currently a wooden migration barrier exists on Leandro creek, within Vermejo Park Ranch borders approximately 0.25 miles below the Carson National Forest property boundary. Although Rio Grande Cutthroat Trout survives throughout the 62-miles of suitable trout habitat Vermejo River system, these 2.5 miles of stream habitat on upper Leandro Creek constitute the only population of pure Rio Grande Cutthroat Trout excluded from competition with all non-native salmonids. The Leandro Creek restoration project will increase the amount of Rio Grande Cutthroat Trout exclusive habitat by 5.25 miles; a 212% increase. In total, Leandro will eventually have 7.75 miles of contiguous Rio Grande Cutthroat Trout habitat isolated from the pressures of non-native salmonids. The genetically pure, aboriginal population of Rio Grande Cutthroat Trout will provide a large, self-sustaining population as a source of individuals for future restoration efforts elsewhere in the Vermejo River watershed.

Objectives: The Leandro Creek restoration Project will consist of three phases:

Phase 1) Barrier installation. The culvert barrier will be installed in the stream during low water. Irrigation diversions of surface water from Leandro Creek upstream of the barrier site will be maximized within legal limits to further decrease in-stream water during construction. Any remaining stream water will be piped around the project site where it will re-assume its course within the natural stream channel. The affected stream channel within the construction area will be cleared of fish prior to the start of construction. Upon completion of the barrier installation, the appropriate stream flows will reinstated. TEI will monitor the barrier closely for the first year to ensure proper function and to address any concerns

Phase 2) Removal of non-native fish. TEI will seek the appropriate licensing and permits to remove the non-native fish from the project area. This aspect of the project will be completed by fall of 2020 provided acquisition of the appropriate permits and licenses. A traditional piscicide project would be quick and

effective, allowing Rio Grande Cutthroat Trout numbers to rebound rapidly following non-native removal. Rio Grande Cutthroat Trout currently inhabiting the project area will be collected, tested for genetic purity, held in unaffected water (Leandro Creek above wooded barrier), and reintroduced into the renovated project area following non-native trout removal.

Phase 3) Re-introduction and repopulation of aboriginal Rio Grande Cutthroat Trout. The aboriginal Leandro Creek Rio Grande Cutthroat Trout, removed from the project area and tested for genetic purity, will be re-introduced into the project area following the removal of all non-native fish. Additionally, TEI will seek permission from New Mexico Game and Fish to conduct wild-fish-transfers of genetically pure Rio Grande Cutthroat Trout from other areas of the Vermejo River into the Leandro Creek project area.

Partners:

- Turner Enterprises Inc.
- Vermejo Park LLC
- U.S. Forest Service – Carson National Forest
- New Mexico Dept. of Game and Fish

Project Monitoring: TEI has been granted scientific collection permits for monitoring aquatic resources on Vermejo Park Ranch for more than 15 years. Currently, fisheries population monitoring surveys occurs at 12 locations throughout the Vermejo River, Ricardo, and Little Vermejo Creeks. Starting in 2018 TEI will request permission to begin monitoring fish populations in Leandro Creek. Historic removal data will serve as baseline for pre/post comparisons. Within Leandro Creek project area, TEI will establish 2-3 survey sites. TEI will also establish 2-3 survey sites below the project area.

Additionally TEI and VPR will see to the continued monitoring and maintenance of the Leandro Creek barrier, ensuring proper function indefinitely into the future. Success will be evaluated by the following:

1. Removal of and exclusion of all non-native fish from the restoration project area;
2. Maintain a population-wide genetic purity greater than 99% Rio Grande Cutthroat Trout within the project area;
3. Achieve a stabilized minimum viable population of Rio Grande Cutthroat Trout at 2750 individuals (within 10 years of project completion).

Funding Source(s): National Fish Habitat Action Plan

Project cost: \$10,000

Start Date: 09/01/2018 **Completion Date:** 12/31/2019 (phase 1)

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