Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Develop Strategies to Conserve Cutthroat Trout by Documenting Life History Patterns and Population Genetic Structure in the Lamar River Watershed

Discipline: Natural
Type of Project: Research
Funding Agency: National Park Service
Other Partners/Cooperators: Montana State University
Student Participation: Yes, GRA
Effective Dates: 8/1/2014 – 6/30/2019
Funding Amount: $177,884

Investigators and Agency Representative:
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Project Abstract: The Lamar River watershed, long considered one of Yellowstone's most important strongholds for native Yellowstone cutthroat trout (YCT) and a fishery cherished by anglers worldwide, is now threatened by invading nonnative rainbow trout. Even before establishment of Yellowstone as America's first national park, the upper reaches have supported an abundance of large, healthy, genetically-pure YCT. In recent years, however, reports from anglers have indicated that rainbow trout were entering the system and hybridizing (interbreeding) with the native YCT. Fisheries biologists and laboratory genetic analyses have since confirmed these reports. To date, efforts to identify the source of the invasion have drawn no definitive conclusions. In order to save the remaining YCT of the upper Lamar River and its tributaries, timely and decisive actions are necessary. These actions must be supported by careful and rigorous research. This project aims to leverage close partnership between Yellowstone National Park, Montana State University, the Yellowstone Park Foundation, and our Agency partners in Montana to answer the necessary questions and chart a scientifically defensible plan of action.

Objectives:
1) Determine, using a combination of radiotracking and genetic analyes, the current extent of distribution of rainbow trout and rainbow x YCT hybrids in the Slough Creek and Lamar River drainages.
2) Determine, using a combination of genetic analyses and movement information, the sources of the rainbow trout invasion.
3) Determine, using radiotracking information, the timing of spawning movement and where rainbow trout and their hybrids are spawning in relation to YCT spawning sites.
4) Determine, using movement data from radiotracking and PIT tagging tracking, what are likely barriers to movement of rainbow trout and their hybrids in the Slough Creek and Lamar River drainages.

Keywords: Cutthroat Trout conservation, Yellowstone National Park, Montana State University, Yellowstone Park Foundation