

Kootenai River GMU Redband Assessment

State(s): Idaho

Managing Agency/Organization: Idaho Department of Fish and Game

Type of Organization: State government agency

Project Status: Underway

Project type: WNTI Project

Project action(s): Assessment

Trout species benefitted: Interior Redband Trout

Population: Kootenai River Basin (multiple tributaries)

Project summary: The Kootenai River GMU Redband Assessment seeks to improve the current level of knowledge regarding Redband Trout distribution and abundance in the Kootenai River Basin and provide information critical for the protection and or restoration of Redband Trout populations and their habitat in the basin. This project is guided by priorities identified in the Conservation Strategy for Interior Redband Trout in the States of California, Idaho, Montana, Nevada, Oregon, and Washington. The outcome of the project will include: a comprehensive assessment of the distribution of Redband Trout in the Idaho segment of the basin; improved understanding of the genotypic distribution of *Oncorhynchus* spp. in the basin; and estimated interspecific and intraspecific hybridization rates influencing Redband Trout populations. Collectively, knowledge gained will provide critical information for making adaptive management decisions used in the conservation of Redband Trout in the Kootenai River Basin in the future.

Problem the Project Addresses: The distribution and abundance of interior Redband Trout has been negatively impacted range wide by a variety of factors. The Kootenai River Basin (Kootenai GMU) of Idaho and Montana represents one portion of the native range of Redband Trout. Distribution and abundance of Kootenai River Redband Trout are believed to be reduced from historical levels. As a result, Kootenai GMU Redband were petitioned for listing under the Endangered Species Act in 1994. No listing was granted due to lack of information. In 2016, the Conservation Strategy for Interior Redband Trout in the States of California, Idaho, Montana, Nevada, Oregon, and Washington (Conservation Strategy) was completed with the intent of identifying conservation priorities and guiding conservation actions for the species rangewide. A number of factors, both natural and anthropogenic, likely influence the representation, resiliency, and redundancy of Redband Trout in the Kootenai GMU. For example, Paragamian et al. (2008) demonstrated that Redband Trout were not uniformly distributed among Kootenai River tributaries and distribution may be influenced by both natural and unnatural barriers to migration. In addition, both interspecific and intraspecific hybridization (with coastal origin Rainbow Trout) within Redband Trout populations was detected, potentially reducing the viability of those populations. Although some knowledge of Redband Trout in the Kootenai GMU is available and provides evidence populations are altered, a lack of definitive knowledge on distribution of Redband Trout and influencing factors within the Kootenai GMU was considered to be the primary limiting factor in improving representation, resiliency, and redundancy of the species in the Conservation Strategy. As such, multiple objectives identified in the Kootenai GMU section of the Conservation Strategy identified a need to improve understanding of how Redband Trout occupy the landscape and how interspecific and intraspecific species interactions influence the presence of Redband Trout and their distribution. Information gained from this effort will be used to directly inform management actions aimed at conserving Redband Trout populations in the Kootenai GMU.

Objectives: The objectives of the proposed project are:

- Describe genotypic species distribution of Redband Trout, Rainbow Trout (coastal origin), and Westslope Cutthroat Trout in the Idaho portion of the Kootenai River basin.
- Describe intraspecific and interspecific hybridization rates in Redband Trout and Westslope Cutthroat.
- Describe trends in hybridization rates in the basin where prior information exists.
- Recommend conservation actions that benefit Redband Trout in the Kootenai GMU using on identified distribution and characteristics of existing populations.

This project will meet and or contribute to objectives identified for the Kootenai GMU in the Conservation Strategy. Supported objectives of the Conservation Strategy include:

- Evaluate current genetic distribution data for accuracy and data gaps.
- Identify core conservation populations and verify previously identified populations.
- Prioritize future conservation actions within the Kootenai GMU by determine where migratory populations with diverse life histories exist.

These identified objectives and their associated actions are intended to address conservation goals listed in the Conservation Strategy for the Kootenai GMU including 1)Protect and improve the genetic integrity of Redband within the Kootenai GMU; 2)Protect and improve the existing life history diversity of Redband populations within the Kootenai GMU; 3) Improve the quantity and quality of Redband habitat in the Kootenai GMU; and 4) Identify core conservation populations, protect their integrity, and improve their conditions where necessary. The Kootenai River Redband assessment is divided into two phases. Phase one includes collection of fish tissue samples and estimation of fish densities. This portion of the project is scheduled for July and or August of 2018. The second phase of the project includes genetic analysis of collected tissue samples and reporting. Completion of phase two is anticipated in early 2019.

Partners:

- Idaho Department of Fish and Game
- Kootenai Tribe of Idaho
- U.S. Forest Service - Panhandle National Forest

Project Monitoring: The project will provide an assessment of Redband Trout populations on a GMU-level scale. Results of the project will provide critical information for use in making adaptive management decisions in the future as well as identify areas of focus where habitat restoration may benefit Redband Trout in the Kootenai GMU. Because this project is an assessment on a landscape scale, periodic monitoring is proposed. Specifically, assessment of Redband Trout distribution will be repeated on approximately ten year intervals. Future assessment will focus on areas known to support Redband Trout populations. Higher frequency sampling events or priority in general monitoring efforts will be given to locations where changes in distribution or influences from other species may be of higher probability. Monitoring efforts will focus on how Redband Trout occupy the landscape and how interspecific and intraspecific species interactions influence the presence of Redband Trout and their distribution.

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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