

Alberta Conservation Association
2023/24 Project Summary Report

Project Name: Native Trout Habitat Remediation

Fisheries Program Manager: Peter Aku

Project Leader: Chad Judd

Primary ACA Staff on Project: Andrew Clough, Isabelle Crawford, Kevin Fitzsimmons, Marco Fontana, Chad Judd, Lindsay Marley, Kade McCormick, Kelly Reihl, and Mike Rodtka

Partnerships

Alberta Native Trout Collaborative
Canadian Nature Fund for Aquatic Species at Risk
Government of Alberta

Key Findings

- We sampled 15 sites randomly distributed throughout the Upper Little Red Deer River watershed, capturing 2,056 fish from 13 different fish species.
- Brook trout were the most abundant and widely distributed species caught.
- Only two bull trout were captured.
- We planted willow stakes and hardened trail crossings across Peppers Creek and Elk Creek to reduce sediment inputs.
- We conducted redd surveys on Cutoff Creek and Elk Creek counting 67 and 27 bull trout redds, respectively.

Details

Alberta's native trout have declined significantly in abundance and distribution over the past century. Many factors are implicated in their decline, but habitat fragmentation and water quality degradation resulting from watercourse crossings is considered a critical threat to Alberta's native

trout. Two watersheds along the East Slopes of Alberta were identified as areas for possible remediation of watercourse crossings. Within the Upper Little Red Deer River watershed, multiple hanging culverts have been identified as potentially limiting bull trout abundance and distribution. Bull trout have been captured in the upper reaches of the watershed historically; however, no watershed-scale assessment has been completed to assess species distribution and composition. Prior to any restoration work, current fisheries information is required to inform restoration activities within the watershed. To assess fish distribution and abundance, we selected sample sites from points placed along second- to fifth-order streams using a spatially balanced design. From July 24 to August 31, 2023, we used backpack electrofishing gear to sample 15 sites throughout the Upper Little Red Deer watershed. We captured 13 different species totalling 2,056 fish. Brook trout were the most abundant and were captured at 14 of the 15 sites sampled. Only two bull trout were captured during our sampling. Within the Upper Clearwater watershed, sedimentation from off-highway vehicle (OHV) watercourse crossings was identified as a potential threat to bull trout. After completing watercourse crossing inspections in the Elk Creek, Peppers Creek, and Cutoff Creek watersheds in 2022, we identified three crossings along OHV trails that would benefit from habitat remediation. These OHV trails are closed for summer use, but the impact of their historic use is still evident. We used low tech bioengineering methods including willow staking and bank armouring using natural materials to decrease the sediment entering these creeks. We conducted redd surveys on Elk and Cutoff creeks identifying bull trout spawning areas. We counted 67 redds and 27 redds in Cutoff Creek and Elk Creek, respectively. The information collected this year will be used to further refine where native trout habitat remediation activities take place.

Photos



Photo 1. Alberta Conservation Association staff members, Kevin Fitzsimmons and Andrew Clough, electrofishing a small stream in the Upper Little Red Deer River watershed.

Photo: Lindsay Marley



Photo 2. Sign installed at one of the remediated watercourse crossings on Peppers Creek.

Photo: Chad Judd



Photo 3. Alberta Conservation Association staff member, Andrew Clough, marking a bull trout redd in Cutoff Creek. Photo: Lindsay Marley