

**Alberta Conservation Association**  
**2022/23 Project Summary Report**

**Project Name:** Upper Clearwater River Native Trout Recovery

**Fisheries Program Manager:** Peter Aku

**Project Leader:** Chad Judd

**Primary ACA Staff on Project:** Lindsay Dowbush, Mike Rodtka, Zachary Spence, and Dakota Sullivan

**Partnerships**

Fisheries and Oceans Canada –Canada Nature Fund  
Government of Alberta

**Key Findings**

- We assessed 40 stream crossings along over 40 km of off-highway vehicle trail in the Upper Clearwater River watershed.
- We identified two locations for stream crossing remediation work in 2023.

**Abstract**

Three native trout species along the Eastern Slopes of the Rocky Mountains are listed under the *Species at Risk Act* because of decreasing populations. A government-led initiative, the Native Trout Recovery Program, was implemented in 2017 to recover native trout throughout their historic range. The program involves implementation of recovery actions (e.g., trail remediation/closures, implementing industry best-management practices, and suppression of non-native species) in an adaptive management framework. Watercourse crossings can have a negative impact on native trout by fragmenting habitat, depositing sediment, and changing stream channels. Using the Alberta Watercourse Crossing Initiative (ABWCI) app, we inspected 40 stream crossings in Elk, Peppers, and Cutoff creeks within the Upper Clearwater River watershed. Most crossings were in good condition, but three are high priority for bioengineering to mitigate point source sediment inputs entering into the creek. This work will be completed in

2023. We completed a short redd survey on Cutoff Creek to identify bull trout critical habitat. Complete redd surveys on Elk, Peppers, and Cutoff creeks will be completed in 2023.

## **Introduction**

Native trout inhabiting streams along the Eastern Slopes in west-central Alberta have declined significantly in abundance and distribution over the past century. Westslope cutthroat trout (*Oncorhynchus clarkii lewisi*) and bull trout (*Salvelinus confluentus*) are currently designated as *Threatened* by the Committee on the Status of Endangered Wildlife in Canada while Athabasca rainbow trout are considered *Endangered* (Sinnatamby et al. 2019). 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. Stream fords can change the stream channel, devegetate banks, slow down the water allowing it to warm, and decrease concentrations of dissolved oxygen, and transport large amounts of sediment downstream (GoA 2023).

The Native Trout Recovery Program has identified key strategies to help mitigate threats to native trout in Alberta including mitigation of point source sediment inputs associated with trail crossings. Along with ground-truthing designated and undesignated off-highway vehicle (OHV) trail crossings, anthropogenic sources of sediment have been identified and many remediation projects have begun. These projects consist of installing bridges along OHV trails, decommissioning undesignated trail crossings, and revegetating streambanks around the crossings.

Critical habitat is the habitat required for a species to carry out its life processes and is necessary for the survival and recovery of the species (Fisheries and Oceans Canada 2020). Critical habitat includes spawning grounds, rearing and overwinter habitats, and even migration corridors. While entire streams may be considered critical habitat, identifying specific areas (e.g., spawning grounds) helps focus habitat remediation efforts around these most sensitive areas.

In the Upper Clearwater River watershed, Elk Creek, Peppers Creek, and Cutoff Creek are priority for stream crossing inspections and critical habitat identification. These crossings occur within the Kiska/Willson Public Land Use Zone (PLUZ) and designated trails within the zone

are subject to seasonal closure. Historic trail use has resulted in some riparian degradation and sediment introduction at the water crossings within the PLUZ.

## **Methods**

From May 27 to June 2, 2022, we hiked designated and undesignated OHV trails in the Elk Creek, Peppers Creek, and Cutoff Creek watersheds. We completed stream crossing inspections along the trails following the Alberta Watercourse Crossing Initiative (ABWCI) inspection protocol and mobile application (GoA 2021). Inspections are georeferenced and include identifying the crossing type, bank erosion or sediment sources, fish passage concerns, and photo documentation.

To identify critical habitat for bull trout, we conducted a bull trout redd survey on 1.5 km of Cutoff Creek on October 17, 2022. Plans to complete redd surveys on Elk and Peppers creeks and the remainder of Cutoff Creek were deferred to 2023.

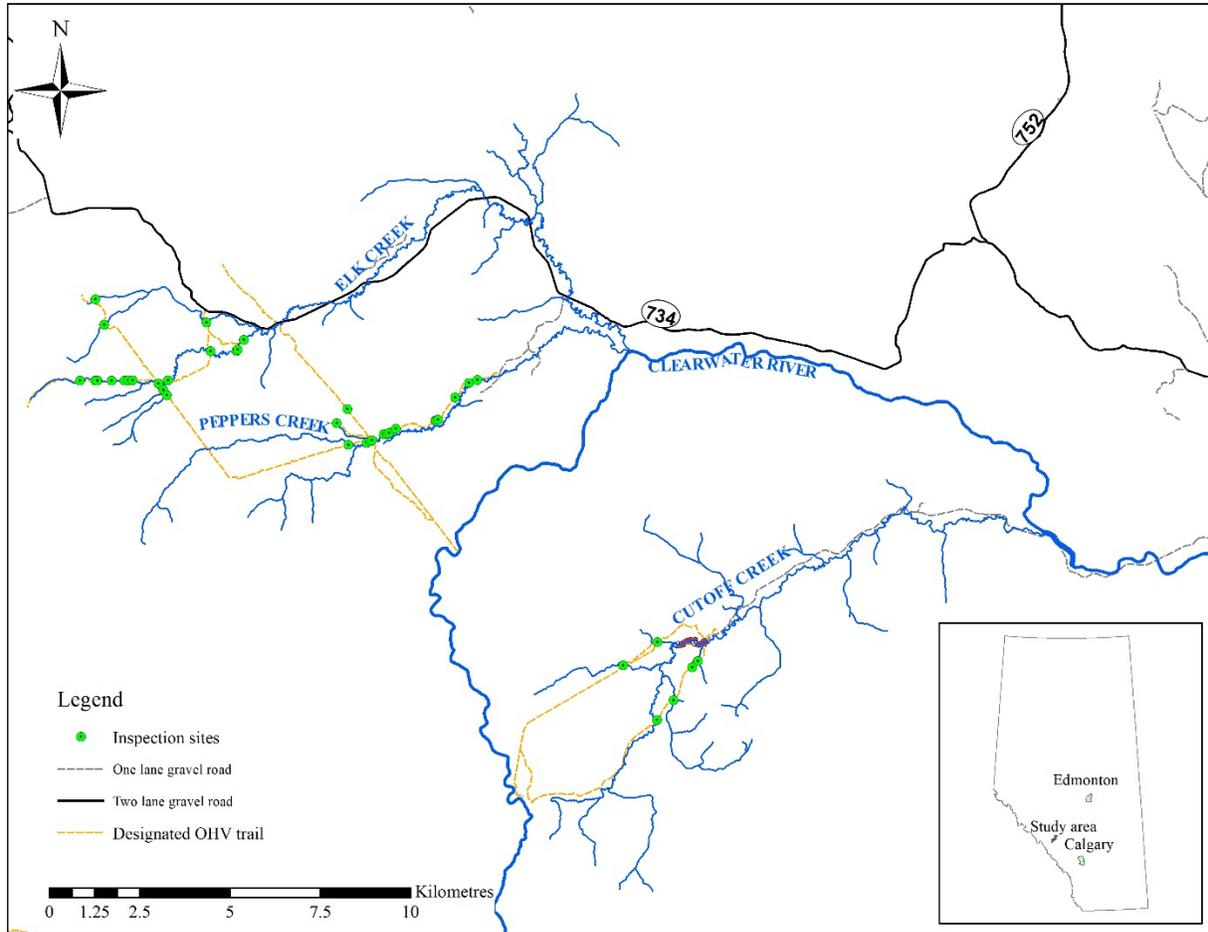


Figure 1. Stream crossing inspection sites within the Upper Clearwater River watershed 2022.

## Results

We completed 40 stream crossing inspections along Elk Creek, Peppers Creek, and Cutoff Creek with 30 crossings categorized as being in good condition. Our inspections were uploaded to the ABWCI database and three crossings were identified as high priority for remediation in 2023 using bioengineering techniques including willow planting and bank armouring. No redds were observed in the reach of Cutoff Creek we surveyed although we did observe one adult bull trout.

## Conclusions

In 2022, we inspected 40 stream crossings along designated and undesignated trails in the Upper Clearwater River watershed using the ABWCI app. We identified potential areas for reclamation to decrease sedimentation and erosion along the trails. In 2023, we will be using bioengineering

techniques to reduce sedimentation at stream crossings and along the trails. We conducted a short redd survey on Cutoff Creek and did not observe any redds. Redd surveys on Elk, Peppers, and Cutoff creeks will take place in 2023.

## **Communications**

- Submitted data to the ABWCI database.

## **Literature Cited**

Fisheries and Oceans Canada. 2020. *Recovery Strategy for the Bull Trout (Salvelinus confluentus), Saskatchewan-Nelson Rivers populations, in Canada [Final]. Species at Risk Act Recovery Strategy Series*. Fisheries and Oceans Canada, Ottawa. viii + 130 pp.

Government of Alberta (GoA). 2021. *Alberta Watercourse Crossing Inventory (ABWCI) App*. Government of Alberta fact sheet.

Government of Alberta (GoA). 2023. *Watercourse Crossing Program*.

<https://www.alberta.ca/watercourse-crossing-program.aspx>. Accessed Feb 6, 2023.

Sinnatamby, N., A. Cantin, J.R. Post. 2019. Threats to at-risk salmonids of the Canadian Rocky Mountain Region. *Ecology of Freshwater Fish* 29: 477-494.

## Photos



Photo 1. ACA staff Zachary Spence inspecting a stream crossing in the Elk Creek watershed.  
Photo: Lindsay Dowbush



Photo 2. Area identified for bioengineering project along Peppers Creek. Photo: Chad Judd