

Alberta Conservation Association
2019/20 Project Summary Report

Project Name: Angler Survey in the Berland River Watershed

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Partnerships

Alberta Environment and Parks

Key Findings

- We counted 28 anglers during 23 aerial overflights in the Berland River between June 1 and September 15, 2019.
- No anglers were observed on the Berland River on 14 of the 23 (61%) flights.
- We estimated a total angling effort of 1,595 h (773–2,541, 95% CI) in the Berland River between June 1 and September 15, 2019.

Abstract

The Native Trout Recovery Program (NTRP) is a government-based initiative used to promote the recovery of declining native trout and whitefish populations along the eastern slopes of North Central Alberta. The Berland River watershed is a focal system in the NTRP, as recent fisheries sustainability index (FSI) analysis indicate that native trout and whitefish populations in the system are at a *high-* to *very high-* risk state compared to provincial standards. Given the Berland River is open to public recreational fishing, angling pressure constitutes a potential threat that

could impact fish populations, yet very little recent data exists on it. We conducted an aerial type angler survey to estimate angling effort on the Berland River. Results from the study will assist in effective management and contribute to species recovery as part of the NTRP. Between June 1 and September 15, 2019, we completed 23 instantaneous aerial (rotary wing) angler counts on the Berland River from the mouth, upstream to the convergence of the North Berland and South Berland rivers. We counted 28 anglers over the study period, averaging 1.2 ± 1.78 (\pm SD); we did not observe anglers during 14 (61%) of the flights. Using bootstrapping methods, we estimated a total angling effort of 1,595 h (77–2,541, 95% CI) on the Berland River, and the majority of the effort occurred on weekends in August and September. It is likely that unseasonably high stream flows affected angler counts in the Berland River in 2019. Therefore, angling effort estimates in this report may not have adequately captured the level of effort in a typical year.

Introduction

The Native Trout (NTRP) recovery programs is a government-led initiative implemented to recover native trout and whitefish in the central and northern East Slopes of Alberta (Government of Alberta 2020). Using an adaptive management framework, the Berland River watershed is one of the focal systems for the NTRP. Alberta Environment and Park (AEP) uses a Fish Sustainability Index (FSI), as a standardized process of assessment, that provides a landscape-level overview of fish sustainability in provincial waters (MacPherson et al. 2014). Recent FSI analysis for the Berland River indicate that populations of native trout and mountain whitefish in the system are at *high-* to *very high-*risk state compared to provincial standards (Government of Alberta 2019). Given the Berland River is open to public recreational fishing, angling pressure constitutes a potential threat that could impact fish populations yet very little recent data exist on it (Mike Blackburn, AEP pers. comm.). In 2019, Alberta Conservation Association (ACA) conducted an aerial type angler survey to estimate angling effort in the Berland River to generate data to support the NTRP. The primary objective of the angler survey is to determine the total angling effort in the Berland River in the summer angling season.

Methods

We conducted an aerial type angler survey following Hoenig et al. (1993) and Pollock et al. (1994) on the Berland River. Between June 1 and September 15, 2019, we conducted 23 instantaneous angler counts using a rotary wing aircraft from the mouth of the Berland River, upstream to the confluence of the South Berland and North Berland rivers (Figure 1). Survey dates and times were selected using Pollock et al. (1994) two-stage sampling design, stratified by day type (weekend/holiday or weekday), and time of day (morning or afternoon). We used bootstrapping (50,000 replicates) to derive estimates and associated 95% confidence intervals for angling effort from aerial angler counts (Government of Alberta 2015; Sullivan 2004).

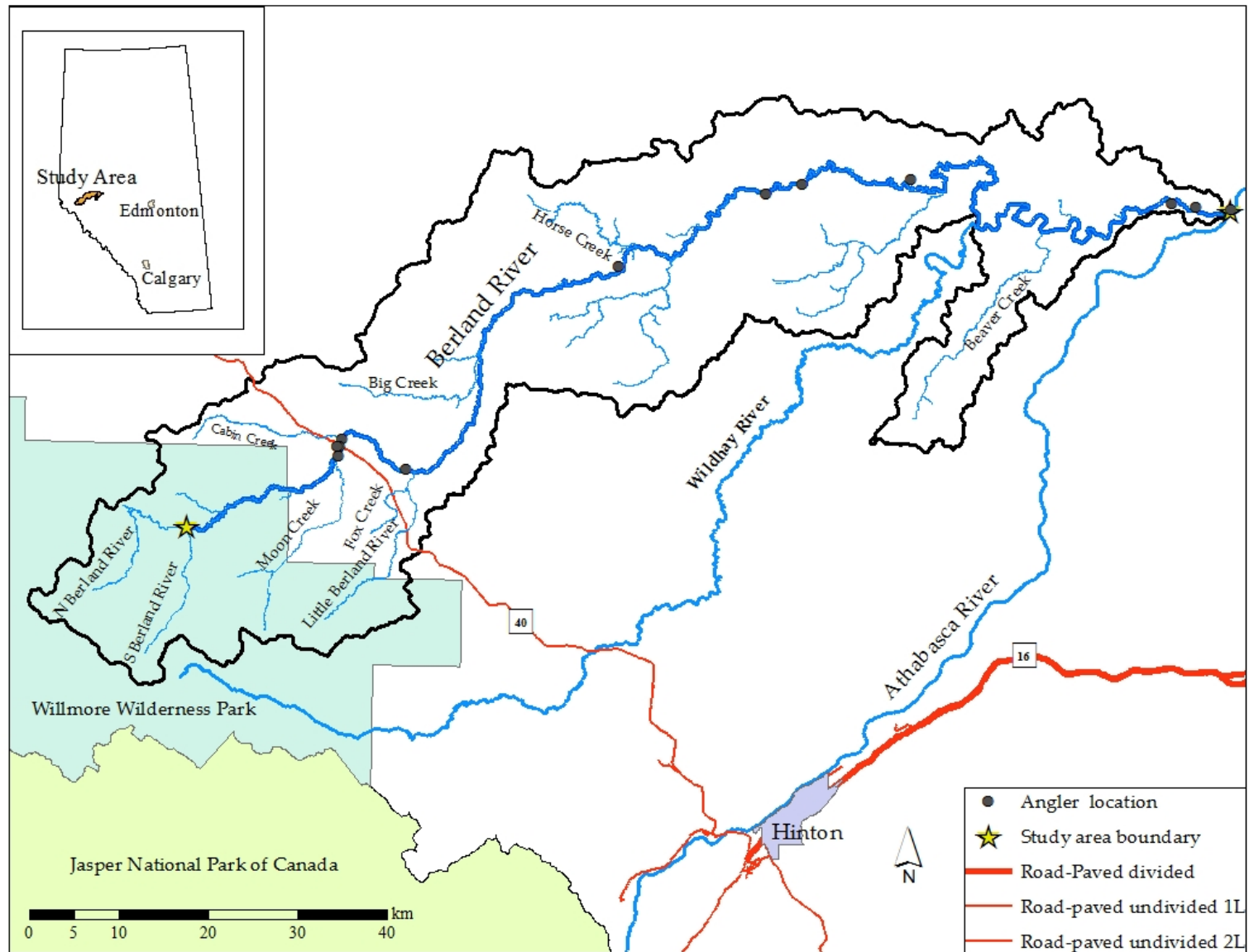


Figure 1. Angler count locations on the Berland River, 2019.

Results

Between June 1 and September 15, 2019, we counted 28 anglers over 23 flights; only eight anglers were counted in the first 12 flights in June and July during flooding. Mean instantaneous angler counts were 1.2 anglers per flight. We did not observe anglers on the Berland River on 14 (61%) flights. Of the flights where we observed anglers, only a maximum of five anglers were counted in one flight. Based on aerial count data, we estimated a total angling effort of 1,595 h (773–2,541, 95% CI) on the Berland River with most of the effort occurring on weekends 1,158 h (532–1,789, 95% CI) (Weekday effort: 437 h (0–1,092, 95% CI)) in August and September. It is likely that unseasonably high stream flows affected angler counts on the Berland River in 2019.

Conclusions

From June 1 to September 15, 2019, we estimated that anglers fished at the Berland River for a total 1,595 h with most of the angling effort occurring on weekends. It is likely that unseasonably high stream flows affected angler counts in the Berland River in 2019. Therefore, angling effort estimates in this report may not have adequately captured the level of effort in a typical year.

Communications

- Data report provided to Alberta Environment and Parks.

Literature Cited

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Photos



Berland River (left) converging into the Athabasca River (right) during high flows. Photo: Nikita Lebedynski



Aerial photograph of the Highway 40 crossing over the Berland River. Photo: Nikita Lebedynski



Overlooking a floodplain in the upper reach of the Berland River. Photo: Nikita Lebedynski