

Alberta Conservation Association
2023/24 Project Summary Report

Project Name: Low Profile Game Species Fisheries

Fisheries Program Manager: Peter Aku

Project Leader: Nikita Lebedynski

Primary ACA Staff on Project: Taylor Dickson, David Jackson, Nikita Lebedynski, Kelly Riehl, Ariel Schlereth, Scott Seward, and Clayton Temple

Partnerships

Government of Alberta

Key Findings

- We set 30 cod traps for 31, 24-hour periods, over five events, totalling 930 sets with an average of 0.85 burbot captured per trap per 24-hour period.
- A total of 525 unique individuals were captured with 395 caught once, 56 caught twice, 43 caught three times, 30 caught four times, and one caught five times.
- Burbot ranged in length from 111 to 954 mm and weighed between 20 to 5,645 g.

Details

Of the 18 sport fish species in Alberta, anglers primarily target northern pike, yellow perch, walleye, and rainbow trout. We believe that lower profile game species, including burbot, can provide unique and significant angling and harvest opportunities. Burbot are widespread across Alberta and have liberal harvest limits; however, little is known about their populations. Over the next several years we aim to develop a monitoring protocol for burbot populations in Alberta through population estimates at several lakes.

Between May and October 2023, we conducted five mark-recapture sampling events at Musreau Lake to estimate burbot population using baited cod-style traps as our main capture technique. During the final sampling event we deployed additional sampling techniques, baited set lines and

gill nets, to increase our total catch and analytical robustness. All gear types were set for 24-hour periods and distributed throughout the lake. Cod traps were baited with 150 grams of minnows, and set lines were baited with beef liver, minnows, or sucker meat. All burbot captured were measured (length and weight), given a fin clip unique to each event, and scanned with a passive integrated transponder (PIT) tag reader to determine if they had previously been tagged. If no tag was detected, a PIT tag with a unique code was implanted under the abdominal skin. Any mortalities were sampled for sex and maturity, and otoliths were collected for aging.

We set 30 cod traps for 31, 24-hour periods equal to 930 total sets. We captured 786 burbot, including initial captures and recaptures, for an average of 0.85 burbot per trap per 24-hour period. An additional 83 burbot were captured on 30 set lines, and four caught in ten gill nets. Preliminary results indicate we captured 525 unique individuals with 395 caught once, 56 caught twice, 43 caught three times, 30 caught four times, and one caught five times. Burbot ranged in length from 111 to 954 mm and ranged in weight from 20 to 5,645 g. Other species captured were pearl dace, longnose sucker, and white sucker.

In summer 2024, we will conduct fieldwork for two more population estimates at Lac Ste. Anne and Lac Sante. Complete population estimate analysis for all three waterbodies will be conducted in winter 2024. A detailed Alberta Conservation Association Final Report will be publicly available in April 2025.

Photos



Photo 1. Alberta Conservation Association staff, Clayton Temple, implanting a passive integrated transponder (PIT) tag into a captured burbot. Photo: Nikita Lebedynski



Photo 2. Three burbot in a container of water prior to being processed and released. Photo: Nikita Lebedynski



Photo 3. Alberta Conservation Association staff, Nikita Lebedynski, releasing a burbot into Musreau Lake, Alberta.

Photo: Ariel Schlereth