

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

**Project Name:** Assessment of Lower Profile Game Species

**Fisheries Program Manager:** Peter Aku

**Project Leader:** Nikita Lebedynski

**Primary ACA Staff on Project:** Lindsay Dowbush, Kevin Fitzsimmons, David Jackson, Nikita Lebedynski, Ariel Schlereth, and Scott Seward.

**Partnerships**

Government of Alberta

**Key Findings**

- Pilot study burbot catch rates were 0.44 and 0.41 fish/net night at Peerless and Musreau lakes, respectively.
- Most respondents to our survey do not target burbot (57%) or goldeye and mooneye (69%) due to lack of knowledge around catching and cooking them. We may be able to improve this through future communications initiatives.

**Abstract**

Of the 18 sport fish species in Alberta, angler catch largely consists of northern pike, yellow perch, walleye, and rainbow trout. We believe that lower profile game species in Alberta can provide unique and significant angling and harvest opportunities. In 2022/23, we focused on burbot, goldeye, and mooneye to explore the current and potential recreational fishing opportunities for these species. We piloted burbot capture methods for future population monitoring; completed a social survey to understand angler interest and motivations regarding burbot, goldeye, and mooneye angling; and explored existing species data from the Fish and Wildlife Management Information System database.

Most survey respondents do not angle for burbot, goldeye, and mooneye, largely due to lack of knowledge on how to catch and cook them. In the future we may be able to enhance existing opportunities by providing information on how to catch, clean, and cook less popular species.

## **Introduction**

Of the 18 sport fish species in Alberta, angler catch largely consists of northern pike, yellow perch, walleye, and rainbow trout (Zwickel 2012). We believe that lower profile game species in Alberta can provide unique and significant angling and harvest opportunities. In this project, we focused on three such species (burbot, goldeye, and mooneye) to explore their current and potential recreational fishing opportunities for these species. Relatively little is known of burbot populations, and how to capture and assess these populations. To position ourselves to start assessing data gaps and population questions, we conducted a pilot study in 2022/23 that focused on burbot capture methods for future population monitoring and completed a social survey to understand the current use level of burbot, goldeye, and mooneye by anglers.

## **Methods**

### *Burbot sampling*

We performed a pilot study using cod traps to capture burbot. Burbot sampling was completed using baited cod-style traps set for 24-hour periods at randomly selected points on Peerless and Musreau lakes following methods used in British Columbia and Yukon (Barker et al. 2014, Giroux 2005, Prince 2007). Peerless Lake was selected for being more than 30 m deep in areas, allowing us to understand the potential for barotrauma as a source of mortality. Musreau Lake is a much smaller fishery, lacking significant populations of other sport fish species. We completed 27 net nights between June 14–16 at Peerless Lake, and 65 net nights between September 13–18 at Musreau Lake. Captured fish were measured (length and weight) and given a fin clip to track if individuals were recaptured. Mortalities were sampled for sex and maturity, and otoliths were collected for aging.

### *Social survey*

An online survey was developed to gather angler opinions on burbot, goldeye, and mooneye angling. Our goal was to discover if these species are commonly targeted, and if not, why they

are not targeted. We also collected information on angler demographics and current angling habits. The survey was open from August 5 to September 5 and was distributed through our social media and email subscribers.

## **Results**

### *Burbot sampling*

We caught 12 burbot for an average of 0.44 burbot/net night at Peerless Lake. We caught 27 burbot, five white suckers, and three pearl dace for an average of 0.41 burbot/net night or 0.54 fish/net night at Musreau Lake. Three and four mortalities occurred at Peerless and Musreau lakes, respectively. While these catch rates were lower than initially anticipated, the traps are still a viable, largely non-lethal, method for capturing burbot in lakes.

### *Social survey*

We received 2,986 responses from May 23 to September 5, 2022. Most respondents had been angling for more than 20 years (85%) and targeted walleye (72%), northern pike (67%), and rainbow trout (64%). Most respondents reported not targeting burbot (57%) or goldeye and mooneye (69%). Reasons to not target burbot included they catch them when angling for other fish anyway (28%), they do not want to catch them (28%), do not know how to catch them (21%), and do not know where to catch them (21%). Reasons to not target goldeye and mooneye include they do not want to catch them (28%), do not know where to catch them (28%), feel locations to catch them are inaccessible (20%), and do not know how to catch them (17%).

## **Conclusion**

Our 2022 pilot burbot sampling informed our planning for the 2023/24 season by establishing a familiarity with the gear and methodology. Social survey results show most respondents do not target burbot, goldeye, and mooneye mostly because they do not know how and where to catch them. We may be able to benefit anglers by providing this information through our communications department.

## **Communications**

- Conservation Works segment – Spring/Summer 2023 issue of *Conservation Magazine*.

## Literature Cited

Barker, O., A. Foos, and, N. Millar. 2014. *Method development: Burbot population assessment using longlines, hoop traps and cod traps Little Fox Lake 2011.*

Giroux, P.A. 2005. *Evaluation of burbot stocks and assessment of a cod trapping technique in four small lakes of Skeena Region, BC.* In Skeena Fisheries Report # SK - 144.

Prince, A. 2007. *East Kootenay burbot population assessment.*

Zwickel, H. 2012. *Sport fishing in Alberta 2010: summary report from the eighth survey of recreational fishing in Canada.* Alberta Sustainable Resource Development, Fisheries Management Branch. Edmonton, Alberta, Canada. 46pp.

## Photos



Photo 1. ACA staff, Scott Seward, holding a burbot trap over the edge of the boat.

Photo: Nikita Lebedynski



Photo 2. ACA staff, Nikita Lebedynski and Scott Seward, boating through the channel at Peerless Lake, Alberta. Photo: David Jackson



Photo 3. A captured burbot being measured by Nikita Lebedynski at Peerless Lake.  
Photo: Scott Seward