

Alberta Conservation Association
2020/21 Project Summary Report

Project Name: Yellow Perch Fisheries in Joker Lake

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Partnerships

Alberta Environment and Parks

Key Findings

- AEP and ACA set four North American standard index nets in Joker Lake in August 2020 to establish baseline conditions prior to transferring yellow perch from Mink Lake.
- We captured 39 perch, 29 pike, and one walleye.
- The high abundances of northern pike and yellow perch of various sizes suggests there is ongoing pike and perch recruitment and no need to transfer perch to re-establish a perch fishery.

Abstract

Joker Lake, near Red Earth Creek, was once a very popular fishery that was well-known for its high abundance of large yellow perch. However, AEP gillnet data from 2017 suggests that Joker Lake has low abundances of yellow perch and northern pike. Winterkill is believed to be the likely cause of the poor catches. ACA, in collaboration with AEP, intended to transfer perch from Mink Lake to aid in the recovery of the fishery in Joker Lake. However, upon ACA and AEP setting gillnets in Joker Lake to establish baseline abundances of yellow perch and northern pike, we were able to demonstrate a high abundance of healthy northern pike and yellow perch (39 perch and 29 pike), suggesting the fishery is recovering on its own and does not require a yellow perch transfer to improve the quality of the fishery in Joker Lake.

Introduction

Joker Lake, near Red Earth Creek, historically supported a native population of northern pike and a stocked population of yellow perch and was once a very popular fishery (Schroeder 1996). Joker Lake offered a robust summer and winter fishery, receiving the highest fishing pressure per hectare (10.18 +/- 2.31 angler h/ha) of nine lakes during a 1998 winter perch creel survey of northwestern boreal lakes (Lucko 1998). However, Joker Lake is known to occasionally winterkill. A recent gill netting survey by Alberta Environment and Parks (AEP) in 2017 shows a low abundance of both northern pike and yellow perch: a total of 26 fish were captured (17 northern pike, 5 walleye, and 4 yellow perch) from 11 net sets, suggesting Joker Lake may have suffered a recent partial winterkill event. The primary objective of this project is to transfer yellow perch to Joker Lake from a donor lake (Mink Lake) to aid in the recovery of the yellow perch fishery in Joker Lake.

Methods

In collaboration with AEP, we intended to set a total of eleven North American Standard Index Nets (NASIN) in Joker Lake, over a 48-hour period, following the methods outlined in Bonar et al. (2009). Four of the eleven nets were set August 18, 2020 to determine the current abundance of northern pike and yellow perch in Joker Lake and to establish a baseline with which to gauge the success of the yellow perch transfer against. All fish were measured for total length, fork length, and weight.

Results

We captured 39 yellow perch, 29 northern pike, and one walleye in four nets. We suspended further sampling after catch rates from the four nets indicated high abundances of both northern pike and yellow perch. The decision to not set more nets was made collaboratively between Alberta Conservation Association (ACA) and AEP.

Conclusions

Although only four of the eleven nets were set, the number and size distribution of both northern pike and yellow perch suggest there is a healthy population with naturally occurring recruitment. Both AEP and ACA believe the perch population in Joker Lake is recovering and does not require a perch transfer to improve the fishery.

Literature Cited

- Bonar, S., W. Hubter, and D. Willis, editors. 2009. *Standard methods for sampling North American freshwater fishes*. American Fisheries Society, Bethesda, Maryland.
- Schroeder, D. 1996. Joker Lake test-netting, February, 1996. Environmental Protection. Natural Resources Service. Fisheries Management Division. Peace River. Unpublished report.
- Lucko, B. and K. Potter. 1998. Yellow Perch Winter Angling Survey in the Northwest Boreal Region, January – April 1998. Alberta Conservation Association.
- Macleod, J. 2015. Joker Lake draft fisheries management objectives. Alberta Environment and Sustainable Resource Development.

Photos



Yellow perch captured from four, overnight gillnet set in Joker Lake on August 18, 2020. A total of 39 yellow perch were captured. Photo: Scott Seward.



A healthy northern pike and yellow perch captured in a gill nets set in Joker Lake. Photos: Scott Seward.