

Hutch Lake Fall Index Netting Summary, 2023

Background

A healthy fish population and fish community means we can all enjoy the benefits of sustainable fisheries and healthy ecosystems. A common question biologists receive is “how are the fish in my lake doing?” This is an important question to answer to set appropriate fishing regulations, understand and correct any problems with fish habitat, and guard against invasive species.

Fall Index Netting (FIN)

Environment and Protected Areas (EPA) uses an accepted standard of index netting for assessing walleye and Northern pike in lake fisheries (Morgan, 2002). This method provides the necessary data on fish abundance, biological data, and species diversity to assess the sustainability of these fish and fisheries. It also allows for comparisons at a lake over time and to other lakes.

Fall index netting occurs during late summer and fall when water temperatures are 10-15 °C. Standardized multi-mesh gill nets are set at random locations between two and 15 metres deep, set for 21-27 hours (i.e., a net-night), and then reset in new random locations.

Information from yellow perch, lake whitefish, burbot, minnow, and sucker species are also collected. The information collected from each fish includes length, weight, age, gender, and maturity. After sampling, if fish are appropriate for human consumption, EPA provides the fish to local Indigenous peoples or to persons on approved subsistence lists. Typically, a very small proportion of the lake’s fish population (less than 1 or 2%) are killed in this sampling.

How is this information used?

Catch rates (i.e., number of fish captured per net-night) of walleye and Northern pike are an index of the populations’ abundance, with higher catch rates meaning there are more fish in the lake. The abundance of adult fish is compared to the standardized thresholds for five broad categories of risk to the long-term sustainability of the fish population, with higher densities of fish having lower risk (Table 1). The sizes and age of fish also tell us if problems with overharvest (e.g., too few large and old fish) or habitat (e.g., poor spawning success results in too few small and young fish) are a concern. Biologists use this information, as well as a variety of data on water quality, access, development, and habitat threats as part of Alberta’s Fish Sustainability Index (FSI).

The management goal for most Alberta fisheries is long-term sustainability, shown by the red lines on the graphs below. In support of achieving this goal netting data is collected to determine the FSI, which helps determine the most appropriate regulations for a lake. This landscape-level assessment allows for consistent, broad temporal comparisons of fish sustainability and status. For more information, please see [Alberta’s Fall Index Netting website](#) and [Fish Sustainability Index website](#).

Table 1 – Alberta’s Fish Sustainability Index risk thresholds for walleye and Northern pike using the standardized Fall Index Net (FIN) method. Note: Thresholds align with species management frameworks.

Mature Walleyes/net	Mature Pike/net	Risk to Sustainability
>29.0	>21.8	Very Low
20.3-29.0	15.3-21.8	Low
14.5-20.2	10.9-15.2	Moderate
5.8-14.4	4.4-10.8	High
<5.8	<4.4	Very High

Results of the 2023 FIN at Hutch Lake

Hutch Lake (593 ha) is located 30 km north of the town of High Level. From September 13 to 14, 2023, 6 nets captured 64 Northern pike. No other species were captured during the survey.

Walleye

No walleyes were captured during the survey, despite the lake being at low risk to sustainability in 2018. Evidence of winterkill was observed in spring of 2020, but it was not known if the winterkill was complete as Northern pike were captured. As per this assessment, walleyes are considered to be **extirpated** from Hutch Lake.

Northern Pike

The mean catch rate of mature Northern pike was 10.7/ net-night (Figure 1). The corresponding FSI score for the current mature density of Northern pike was assessed at **moderate** to **high risk**.

The length distribution shows poor recruitment, a large proportion of fish under 550 mm total length and very few large (>700 mm) fish (Figure 2).

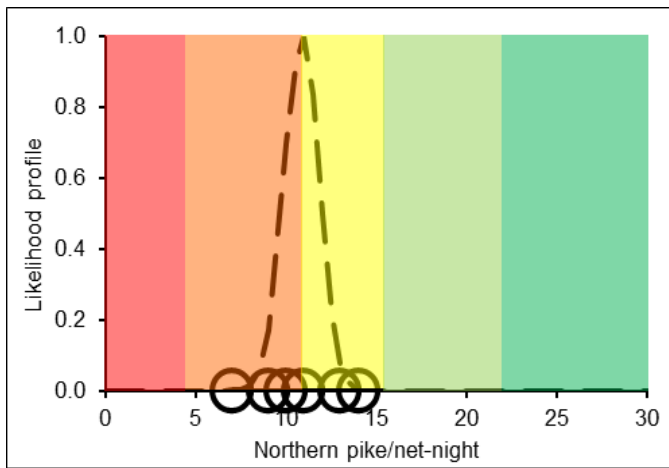


Figure 1 - The FIN catch rate of mature Northern Pike from Hutch Lake, 2023. Dashed line is the mean catch rate (10.7 fish/ net-night), with individual net data as hollow circles (n=6 nets).

As Northern pike were observed swimming over the control structure of the dam, Meander River may provide a source of pike for Hutch Lake.

The 2023 FIN sample represented approximately 0.4% of the estimated Northern pike population size.

Summary

Hutch Lake was assessed in 2011, 2018 and 2023. The status of Northern pike has remained stable between **high** and **moderate risk** to sustainability with poor recruitment (no evidence of immature fish). Evidence of a population limited by winterkill events suggests that a more liberal management objective could be considered. Walleye stocking may be considered in the future if an appropriate source can be located and overwinter conditions are suitable.

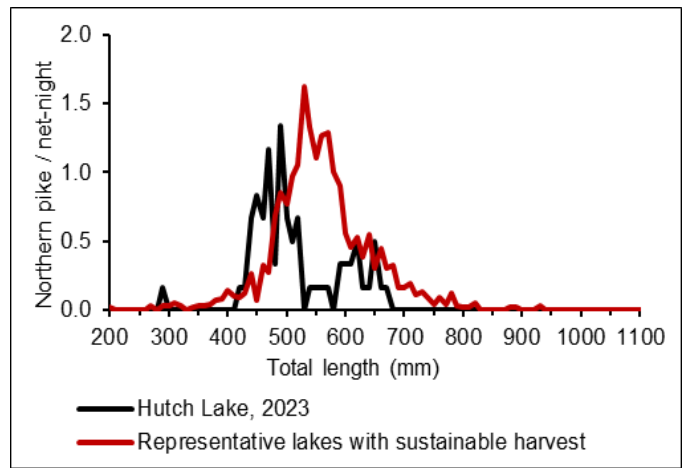


Figure 2 – FIN sample showing size of Northern Pike from Hutch Lake, 2023. The red line indicates the average length distribution of pike from 6 Alberta lakes supporting long-term sustainable harvests of pike.

Literature

Morgan, G.E. 2002. Manual of Instructions-Fall Walleye Index Netting. Percid Community Synthesis, Diagnostics and Sampling Standards Working Group. Laurentian University, Sudbury Ontario.