

Travers Reservoir Fall Index Netting Summary, 2023

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)

The Government of Alberta 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 2 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 5 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. 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

Travers Reservoir (2307 ha) is located 35 km southeast of the town of Vulcan. From October 4 to 5, 2023, 6 nets captured 10 lake whitefish, 11 shorthead redhorse, 5 Northern pike, 106 walleyes, 1 white sucker, and 3 yellow perch.

Walleye

The mean catch rate of walleyes was 17.7/ net-night. The catch rates of mature (Figure 1) and immature walleyes were 8.3/ net-night and 9.3/ net-night, respectively. The corresponding FSI score for the mature density of walleye was assessed at **high risk**.

The length distribution shows strong recruitment, low to moderate abundances of walleyes from 370 to 500 mm, and low abundance of fish larger than 500 mm (Figure 2).

The 2023 FIN sample represented approximately 0.4% of the estimated mature walleye population size.

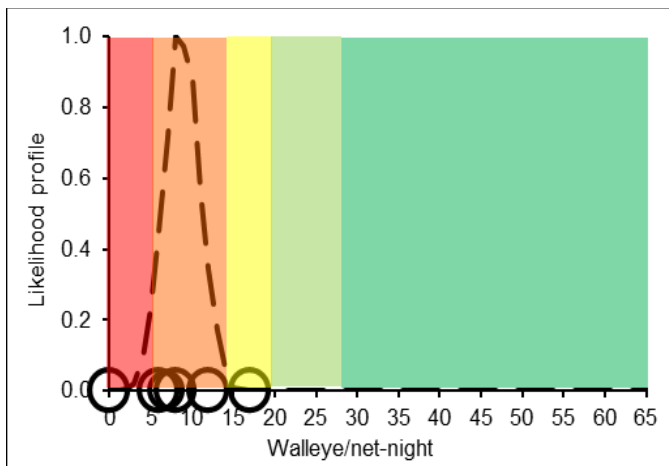


Figure 1 - The FIN catch rate of mature walleyes from Travers Reservoir, 2023. Dashed line is the mean catch rate (8.3 fish/ net-night), with individual net data as hollow circles (n=6 nets).

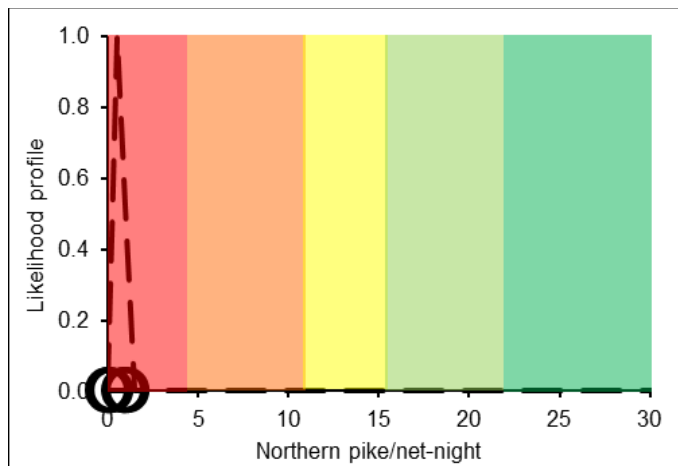


Figure 3 - The FIN catch rate of mature Northern pike from Travers Reservoir, 2023. Dashed line is the mean catch rate (0.5 fish/ net-night), with individual net data as hollow circles (n=6 nets).

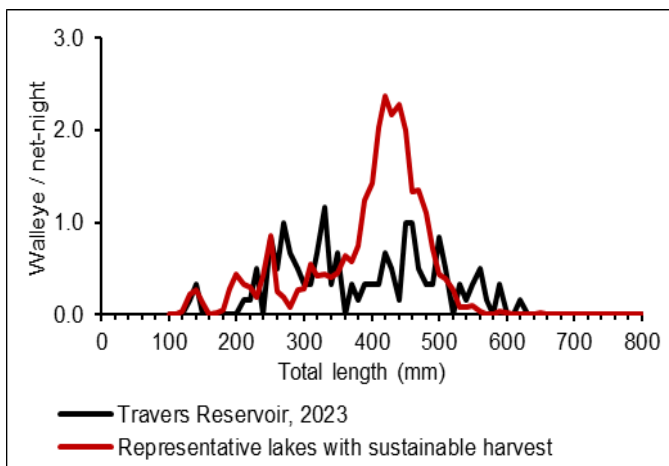


Figure 2 – FIN sample of showing size of walleyes from Travers Reservoir, 2023. The red line indicates the average length distribution of walleye from 5 Alberta lakes supporting long-term sustainable harvests of walleye.

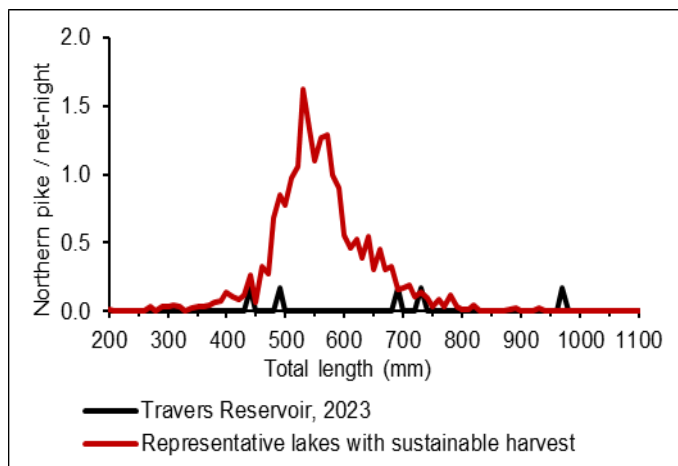


Figure 4 – FIN sample showing size of Northern pike from Travers Reservoir, 2023. The red line indicates the average length distribution of pike from 5 Alberta lakes supporting long-term sustainable harvests of pike.

Northern Pike

The mean catch rate of mature Northern pike was 0.5/ net-night (Figure 3). The corresponding FSI score for the mature density of Northern pike was assessed at **very high risk**.

The length distribution of Northern pike shows little evidence of recruitment and very low abundance of Northern pike across the distribution.

The 2023 FIN sample represented approximately 0.2% of the estimated mature Northern pike population size.

Summary

Since the 2020 FIN assessment, the status of walleyes has improved from **very high risk** to **high risk** in 2023.

Since 2021, Travers Reservoir has been stocked annually in the spring with walleye fry to supplement existing populations to provide sustainable angling opportunities.

The success of these stocking events and their contribution to the Travers Reservoir Walleye population will be assessed in coming years.

The Government of Alberta is closely monitoring a recent regulation change for walleyes at Travers Reservoir to ensure the population continues to meet sustainability objectives.

The FSI status of Northern pike has remained at **very high risk** since the 2020 FIN assessment. Strict conservation-based management remains necessary.

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.

