



# Lake Winnipegosis Fishery

## On a Path to Stock Recovery

### Introduction

Lake Winnipegosis is located west of Lake Winnipeg, northwest of Lake Manitoba and south of Cedar Lake. Lake Winnipegosis is Manitoba's second largest lake by area (5,379 km<sup>2</sup>) and is approximately 200 km in length, 25 km wide, with water depths of up to 12 metres.

Lake Winnipegosis has a number of tributaries, including the Mossey, North Duck, Overflowing, Pelican, Pine, Point, Red Deer, Sclater, Shoal and Steeprock Rivers. Lake Winnipegosis outflows via the Little Waterhen and West Waterhen Rivers into Waterhen Lake.



Figure 1: Map of Lake Winnipegosis





## A Mixed-Use Fishery

Lake Winnipegosis is a multi-use fishery consisting of Indigenous subsistence harvest, commercial gill netting, and recreational angling. The fishery supports local communities where commercial fishing is the primary source of employment and is an integral part of the fisher's lifestyle.

### Rights-Based Harvest

Rights-based harvest by Indigenous communities occurs throughout the year. The level of subsistence harvest is not scientifically measured.

### Commercial Harvest

Lake Winnipegosis is Manitoba's third largest commercial fishery, generating between \$1 million and \$2 million in landed catch each year. There is a winter fishery with an unrestricted lake quota with 174 eligible fishers and an open water fishery with 116 fishers. Open water fishers hold quota entitlements that total 262,320 kg. There is also a year-round carp fishery.

### Recreational Angling

Recreational angling occurs mainly in the tributaries of the lake during the open water season. Provincial angling regulations apply to all licensed anglers. Mature female walleye have a high degree of protection from angling harvest thanks to a 45 – 70 cm release slot. The possession limit is four walleye.

A few commercial tourism lodges and outfitting operations offer recreational angling opportunities on Lake Winnipegosis. However, Lake Winnipegosis is not a prime recreational angling destination. A popular recreational fishery is a measure of fishery quality, as anglers actively seek high-yielding fisheries and share that information with other anglers. Millions of dollars in potential annual revenue, much of which would be spent in communities around Lake Winnipegosis, are being lost due to the mediocre state of the walleye stock.



## Fish Community

Twenty-six fish species occupy Lake Winnipegosis. The open water commercial fishery primarily targets walleye but also takes lake whitefish. The winter commercial fishery primarily targets white sucker and northern pike, although walleye is also harvested. Other species in the lake include yellow perch, sauger, shorthead redhorse (marketed with white sucker as “mullet”), cisco (marketed as “tullibee”) and common carp.

Lake Winnipegosis has been stocked with walleye fry for decades. In recent years, the annual stocking rate has ranged between one million and five million fry.

## Commercial Fisheries Management

### Eligible Fishers

To participate in the commercial fishery, an individual must be a member of a local fisher association under the larger Lake Winnipegosis Fishermen’s Association. Since the 1989-90 commercial fishing season, the Lake Winnipegosis Fishermen’s Association has operated under a series of by-laws, one of which limits the number of commercial fishers to 174 license holders. Carp fishery participants must obtain a separate carp fishery licence.

### Seasons

The winter season is open from November 1<sup>st</sup> or when “ice forms” to March 31<sup>st</sup>”

Open-water season dates vary, but the season is generally open in two parts – the first from the third Monday in June through the third Sunday in July and the second part from the second Monday in August through the third Monday in September.



### **Mesh Size**

Commercial harvesters are limited to using a mesh size not less than 102 mm (four-in.), whether fishing open water or through the ice. Winter commercial fishers may fish up to 11,100 m of nets, open water fishers up to 4,600 m. The year-round carp fishery is restricted to a mesh size of not less than 203 mm (eight-in.)

### **Quotas**

Quota entitlements were introduced during the early 1990s, after a buy-back program was implemented to reduce the number of fishers operating in the open water season. Today, the open water season has a total walleye quota of 263,320 kg (580,000 lbs).

The winter fishing season has an unrestricted quota.

In 2002, a permanent year-round common carp and sucker fishery was established. Today, the large mesh common carp and sucker fishery operates with an unrestricted annual quota.

### **Annual Collaborative Monitoring of Fish Stocks**

Manitoba Agriculture and Resource Development (ARD) conducts annual index gill net surveys and sampling of commercially-caught walleye to assess the status of the walleye stock in Lake Winnipegosis.

Sampling locations are selected, based on historical data collection around the lake. Currently, there are 12 sampling sites assessed through the Coordinated Aquatic Monitoring Program (CAMP), a partnership program between ARD and Manitoba Hydro. Six sites are located in the northern region of the lake and six sites in the south region.

An additional three sites in the Duck Bay area are being added to the stock monitoring program through the Collaborative Stock Monitoring Program in partnership with the Pine Creek First Nation, and an additional three sites in the north end in partnership with Sapatoweyak Cree Nation.





## Current Stock Status

### Walleye

Lake Winnipegosis has been commercially fished since the late 1800s. Production records date back to the early 1900s. Figure 2 shows walleye harvest was high through the 1920s to 1940s. The walleye population collapsed in the 1960s, significantly reducing commercial production.

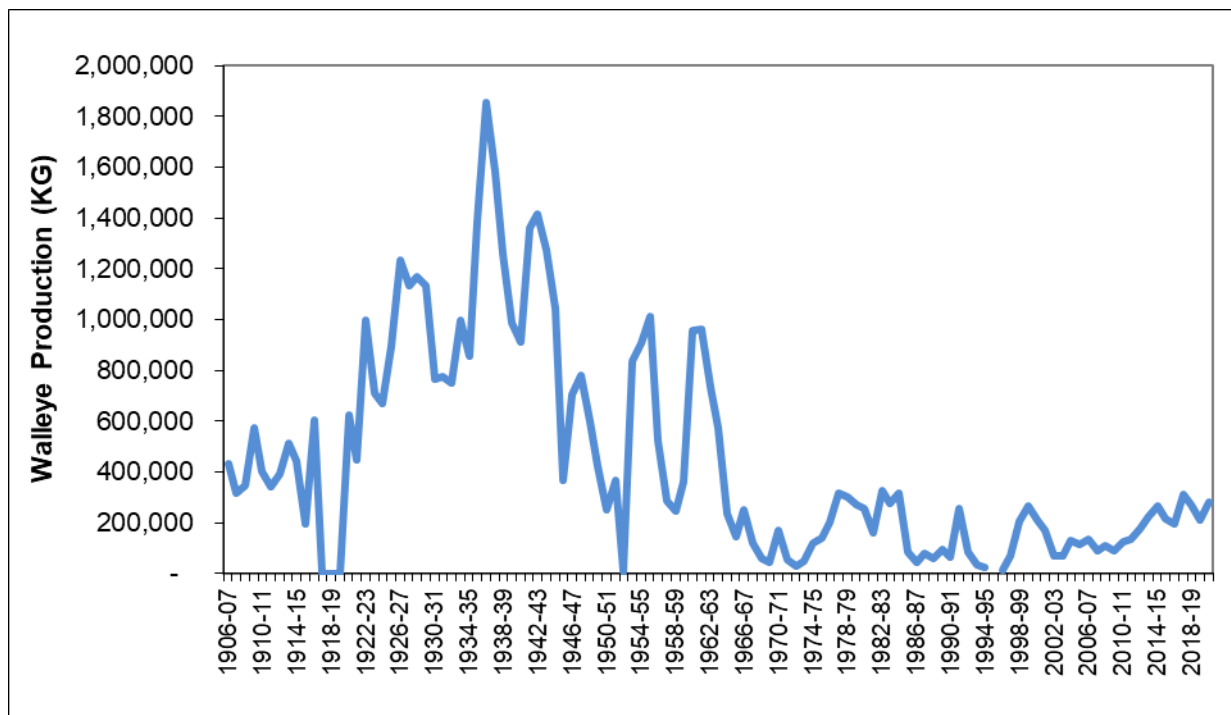


Figure 2: Walleye Production from 1906 to 2020



### Walleye Continued...

The end to small mesh (three in. minimum) fishing in 2008 allowed the start of walleye recovery from its collapsed state, but recovery has plateaued at around half of the potential walleye yield of a well-managed fishery. A lack of appropriate and sustainable harvest control rules, including unrestricted harvest in the winter commercial fishery, are believed to cause the plateau. The size of the walleye spawning stock is thought to remain at a low enough level that reproduction and recruitment are likely limiting annual commercial yields.

Figure 3 shows age composition of the walleye stock in 2020. Walleye ranging in age from young-of-the-year to 13 years were caught during the 2020 index-netting program. Walleye aged eight and over account for less than one per cent of the population sample. The 2016 year-class (age four) is the most abundant in the sample (48 per cent), and provides for an opportunity to rebuild the spawning stock. It is important to further protect and grow the spawning stock to allow for increased recruitment when ideal spawning conditions are present. The annual mortality rate of walleye in 2019-20 was 45.1 per cent, which is higher than the mortality rate that would deliver the highest yield of walleye for fishers and allow the population to continue to grow.

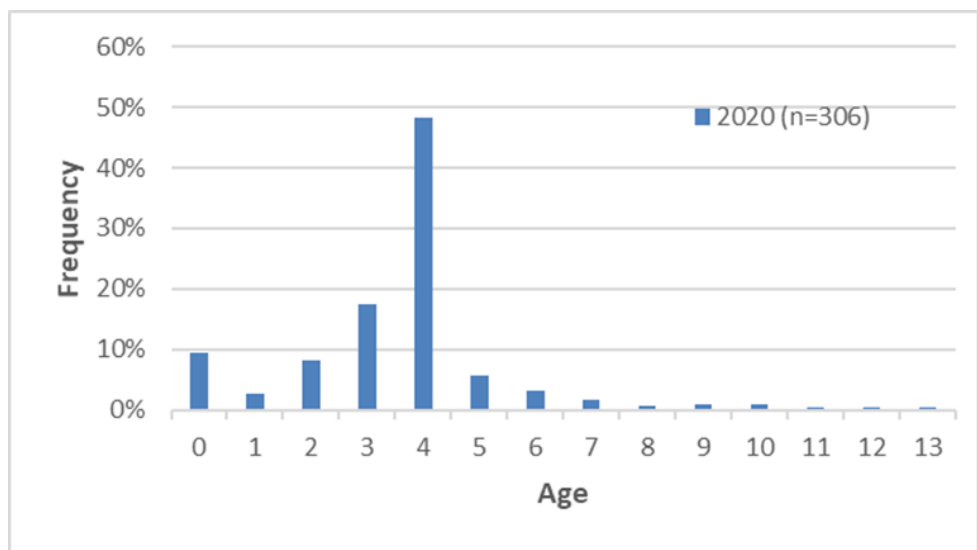


Figure 3: Age Composition of Walleye Stock from 2020



## Other Species

The northern pike stock in Lake Winnipegosis is sustainably managed, as female pike can spawn two or three times before they become susceptible to the fishery. Mullet and lake whitefish are the main bycatch species – mullet accounting for almost 60 per cent and whitefish accounting for five per cent of the total harvest. White sucker are generally the dominant species caught in most years' index netting program, although walleye harvest narrowly surpassed sucker harvest in 2020.

Sauger, a high value species, was harvested in modest quantities until the late 1960s, when the population collapsed, likely due to the widespread use of small mesh gill nets, which adversely affected sauger populations in other Manitoba lakes. The current four-in. minimum mesh size is nearly fully protective for sauger and should allow for stock recovery, assuming sufficient sauger remain to provide a viable spawning stock.

## Future Management

There are opportunities to increase the social and economic benefits of the Lake Winnipegosis fishery. Walleye is the most sought-after fish in Manitoba for subsistence harvest, recreational angling, and commercial fishing, so increasing the abundance of walleye is key to unlocking those benefits. History indicates that there is room to grow the stock (Figure 2): 500,000 kilograms of walleye a year were commonly delivered by the commercial fishery until the 1960s.

To grow the walleye stock, a new harvest control system, including a new winter quota, should be implemented to reduce fishing mortality to a level that aligns with producing the highest fishery yield. The number of eligible winter fishers and the number of quota entitlements could be reviewed as part of this implementation. Over time, lower fishing mortality (the proportion of the stock caught by fishing) will allow stock size to increase. It will provide more fish to harvest than is possible from a smaller stock, while, at the same time, improving stock sustainability.

A more sustainable walleye fishery means enhanced economic, environmental and social benefits for resource users and local communities.

**For more information on the Lake Winnipegosis fishery , please visit [www.manitobafisheries.com](http://www.manitobafisheries.com).**

Available in alternative format upon request. Please contact [fish@gov.mb.ca](mailto:fish@gov.mb.ca) to inquire.

