



# Lake Manitoba Fishery

## A Fishery on the Road to Sustainability

### Introduction

Lake Manitoba is Manitoba's third-largest lake, with an area of 4,660 square kilometres. By surface area, it is the thirty-third largest freshwater lake on Earth. The lake supports Manitoba's second-most valuable mixed-use fishery. Lake Manitoba's commercial and recreational fisheries are valued at approximately \$9 million per year, split more or less evenly between the two sectors. Indigenous subsistence harvest contributes further to the fishery's value.





## Commercial Fisheries Management

### Eligible Fishers

There are 554 eligible fishers on Lake Manitoba, of whom 250 to 300 have been active in recent years.

In 1987, a new licensing structure established two types of commercial fishing licences: Category A and Category B. Fishers that had delivered an average of at least 200 kilograms per year in the preceding three years were granted Category A licences. All other fishers were granted Category B licences.

Category A licences are transferrable. Eligibility to acquire a Category A licence includes a minimum age of 18 years, two years fishing experience and residency in a rural municipality or an unorganized territory adjacent to Lake Manitoba.

Category B licences cannot be transferred. Once the holder exits the fishery, the licence is retired.

### Seasons

Regulation of Lake Manitoba's commercial fishery began in 1895. In 1905, the fishery began to operate as a winter fishery only. The fishing season is open from "*when ice makes on or after November 1 to March 31.*"

There is a limited spring creek mullet fishery, conducted under a separate licence, which is approved annually. This fishery's opening depends on annual snowmelt and runoff conditions, and it generally closes before the start of the angling season.

A lake carp fishery, conducted under a separate carp licence, is permitted year-round.

A Delta Marsh carp fishery is also permitted on a limited entry basis. Season opening depends on spring snowmelt and runoff conditions, and the fishery generally closes in mid-July.



## Mesh Size

The minimum allowable mesh size is 95 millimetres or 3.75 inches of stretched mesh. This mesh size has been in place since the 2017 season on an interim basis, at the request of Lake Manitoba fishers. The maximum mesh size allowed in the fishery is 127 mm or five inches of stretched mesh.

The minimum mesh size for the carp fishery is 203 millimetres or eight inches of stretched mesh.

## Quotas

The Lake Manitoba commercial fishery has a maximum allowable lake quota of 907,000 kg in roundweight of walleye and sauger combined. There are no quotas in place for other species.

## Annual Monitoring of Fish Stocks

Manitoba Agriculture and Resource Development conducts annual index gill net surveys to assess the status of the fish stocks in Lake Manitoba. The program, in its current form, has been in place since 2009.

There are four sampling locations: Manipogo, Whitemud, Lundar and Steeprock. In 2021, the department added a fifth sampling location at the Narrows and expanded the program to collect biological information from by-catch species.

Manitoba Agriculture and Resource Development also tracks and monitors commercial production for quota and non-quota species.





## Brief History of the Fishery

An Indigenous subsistence fishery was present before the first commercial fishery. The first written account of Indigenous subsistence fishing of an abundant lake whitefish stock dates to 1804. Records of the managed commercial fishery begin in 1895 when a railhead at Westbourne made commercial exports from Manitoba possible.

In 1905, Lake Manitoba became a winter-only fishery. Advantages of winter fishing include less spoilage of fish, and in the days before commercial refrigeration, cold Manitoba winters made long distance distribution possible. Winter fishing also fit into the annual agricultural cycle around Lake Manitoba: producers could supplement their summer farm income with winter fishing income. The Lake Manitoba fishery is thus primarily an income supplement fishery.

The initial target species of the fishery was lake whitefish, caught in five to six-inch stretched mesh nets. As whitefish were depleted and smaller mesh sizes permitted, harvest shifted to walleye and sauger, where 3.75-inch mesh gillnets proved effective.

The development of the walleye and sauger fishery and the subsequent reduction in their population sizes allowed their main prey, yellow perch, to grow in numbers. By the mid-1980s, fishers began using three-inch mesh to catch yellow perch, to the detriment of sauger and walleye populations.

A high-value walleye fishery has returned because of the end of small mesh fishing, beginning in the north basin in 2001 and in the south in 2017.





## Current Status of the Fishery

### Commercial Fishing Production

The performance of Lake Manitoba's two quota species, walleye and sauger, plummeted after three-inch mesh was allowed in 1985. The minimum mesh size had been 3.75 inches, but fishers were anxious to catch small but abundant and valuable yellow perch. The sauger fishery that once delivered 200,000 kg per year fell to less than 2,000 kg in 2014. The walleye fishery struggled to produce 100,000 kg annually. Discussions about increasing the minimum mesh size occurred, but were unsuccessful at that time.

In 2013, perch stocks were so low that few fishers used three-inch mesh and recovery of the fishery began. In the 2016-2017 fishing year, fishers took the initiative to formally request a return to a minimum mesh size of 3.75 inches. The results have been spectacular. Walleye surplus production has averaged 600,000 kg in the most recent three years and the sauger stock has begun to recover.

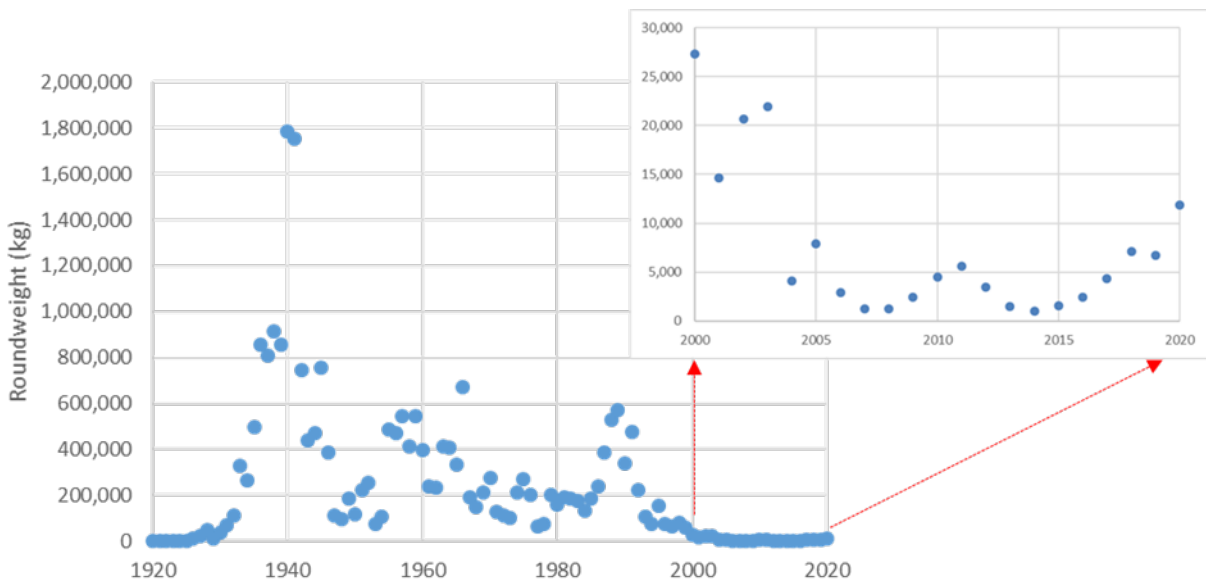
### Walleye

Walleye in Lake Manitoba have high growth rates and good condition, suggesting there is no food limitation. Walleye abundance is currently high. Commercial harvest has also been high in recent years.

The total harvest of walleye from commercial, recreational and Indigenous harvesters is estimated to be an average of 546,087 kg annually over the past 4 years, whereas the estimated maximum sustainable yield is estimated to be 450,000 kg. Harvest can be higher than the estimated maximum sustainable yield when spawning biomass is high and mortality is low. The current estimated mortality rate for walleye is above the level that would produce maximum sustainable yields, meaning the walleye stock is not currently being managed to secure its highest long-term yields.

## Sauger

A recovery of the sauger population is underway, following the implementation of a larger minimum mesh size in 2016-2017 (Figure 1). Sauger stocks are growing, however the stock remains in a collapsed state. Sauger growth rates are slower than average for the species across North America. This is more likely a result of intensive cropping of the stock due to over-harvest, rather than from food limitation, because relative weights of sauger show no evidence of a lack of food. Fast-growing sauger are being removed from the stock through the commercial fishery.



**Figure 1. Time series of Lake Manitoba sauger commercial deliveries over the past century. Notable peaks in production occur during the Second World War when a 3.25-inch minimum mesh size was used in the fishery, and in the 1980s when three-inch mesh was used until 2017. Since 2017, the minimum mesh size has been set at 3.75-inch stretched mesh. The inset is a rescaling of the period from 2000 to present to show more recent trends in deliveries.**



### Maximum Sustainable Yield

The Lake Manitoba commercial fishery has a quota of 907,200 kg of walleye and sauger combined, which is approximately double the estimated maximum sustainable yield of 450,000 kg. While commercial harvest has never reached the quota, it was over 750,000 kg in 2018-2019, over 675,000 kg in 2019-2020, and over 700,000 kg in 2020-2021. These catch rates are not sustainable in the long-term and will lead to an eventual decline in fish stocks.

### Recreational Angling

The improved fishing has been noticed by the economically important angling industry, with summer and winter angling growing quickly on Lake Manitoba, bringing additional benefits to Manitoba's economy and local communities.

### Seafood Watch Report

In 2015, Seafood Watch, an environmental non-government organization, reviewed the Lake Manitoba fishery and recommended buyers avoid buying Lake Manitoba fish because the management of the fishery was not aligned with modern sustainable fishery management practices. It is likely that future Seafood Watch reviews would result in a similar avoid rating until the sustainability of the fishery improves through management changes.





## The Road Ahead

The regulations governing the modern Lake Manitoba fishery are a legacy of the fishery's evolution. A series of community meetings a decade ago made it clear that most fishers and lakeside citizens wanted the return of a vibrant, high-yielding walleye fishery and the recovery of the sauger fishery. The first step in achieving these goals was taken when commercial fishers ended small mesh fishing in 2016-2017. The benefits of the change have been as impressive as, or more so than those seen on other commercially fished lakes in Manitoba such as Lake Winnipegosis and Waterhen Lake.

The current regulation of the Lake Manitoba commercial fishery does not fit easily into the framework of sustainable fishing certification schemes required by today's marketplace. In particular, certification requires a move away from fixed lake quotas, to harvest levels that are responsive to the state of the stock. For example, there were so many walleye in Lake Manitoba in 2019 that the 2020 stock assessment recommended a commercial harvest of 612,000 kg for the subsequent fishing year. By contrast, a decade earlier, the entire estimated standing stock of catchable walleye and sauger in Lake Manitoba was less than 200,000 kg and a reasonable quota that would have allowed for stock rebuilding would have been less than 100,000 kg. Adjusting the quota as fish abundance increases and decreases ensures that commercial fishing opportunities are increased when appropriate and reduced when a fish stock declines.

The number of commercial net fishing licences is also a concern. When licensing began, there was a largely unexploited stock that was fished by a large number of fishers who had little time and inefficient gear. Modern nets are very efficient and the fishing season is long. If all currently eligible fishers participated in the fishery, it would take only a few seasons for deliveries to return to the low point of the previous decade.

There is an opportunity to modernize the Lake Manitoba fishery to create a better future for subsistence harvesters, commercial fishers and recreational anglers. The task ahead is to continue to build on the recent success of recovered walleye and sauger stocks. This will lead to enhanced cultural, social and economic returns from the Lake Manitoba fishery for this and future generations.

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

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