

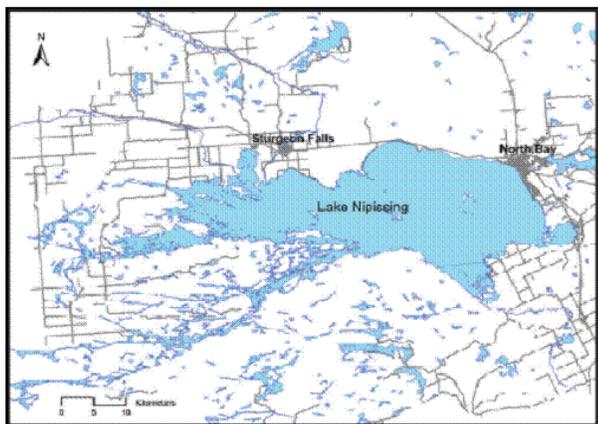
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LAKE WHITEFISH & CISCO IN LAKE NIPISSING

This fact sheet is part of a series prepared in support of the development of a new Fisheries Management Plan for Lake Nipissing.

LAKE NIPISSING FISHERIES MANAGEMENT PLANNING

Under the Ministry of Natural Resources' Ecological Framework for Fisheries Management, Lake Nipissing is a Specially Designated Water due to its large size and socio-economic importance. At 90,000 hectares, Lake Nipissing is Ontario's fourth largest lake, excluding the Great Lakes, and the seventh most fished lake, including the Great Lakes. Lake Nipissing has been a premier fishing destination in Northeastern Ontario for decades, and it is estimated that fishing activities contribute up to \$60 million annually into Ontario's economy. Ontario manages this valued resource through a lake specific management plan.

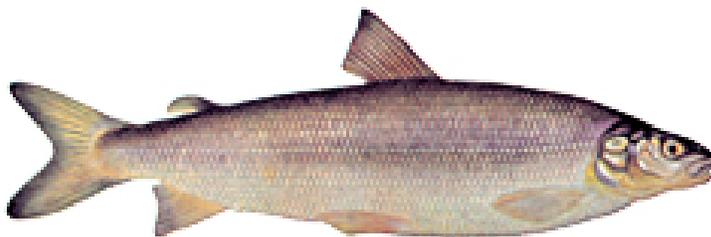


LAKE NIPISSING LAKE WHITEFISH AND CISCO FISHERY

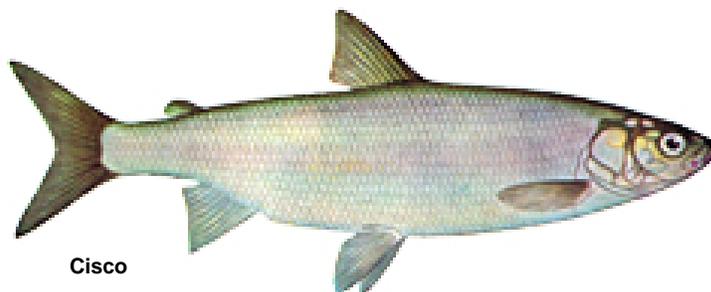
Both lake whitefish and cisco angling harvest levels remain very low on the lake. These fish also represent a small segment of the First Nation commercial harvest. Almost no time is spent by anglers targeting these species.

LAKE WHITEFISH AND CISCO (LAKE HERRING) BIOLOGY

The lake whitefish and cisco are cool-water species that inhabit large rivers and cold freshwater lakes. They migrate from shallow to deep water and back to the shallows with seasonal shifts in water temperature.



Lake Whitefish



Cisco

Spawning for both species occurs in late fall, generally in November and December. Cisco usually spawns a week or two after whitefish. Both species exhibit rapid growth rates.

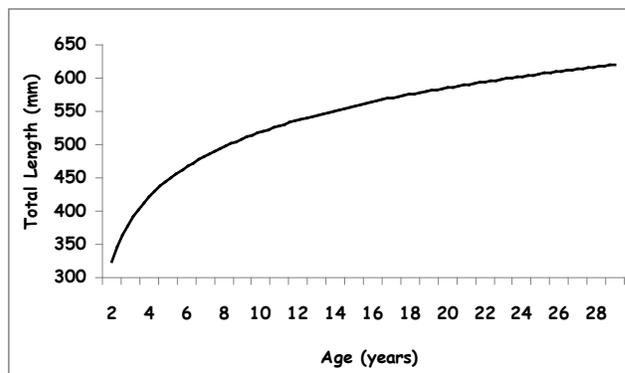


Figure 1: Lake whitefish growth pattern in Lake Nipissing as measured by total length by year caught during an Index Netting program carried out by Nipissing First Nation.

ASSESSING THE LAKE NIPISSING LAKE WHITEFISH FISHERY

During the last management plan, objectives were only set for lake whitefish. The key objectives for lake whitefish in the 2007-2010 plan were:

- monitor the whitefish population in Lake Nipissing, and
- maintain a healthy whitefish population.

To assess our achievement of these objectives, two types of fisheries assessment data are collected: Fall Walleye Index Netting (FWIN) and creel surveys. FWIN is an assessment tool used to provide measures of relative abundance, as well as information on growth and other life history characteristics.

Creel surveys, conducted during both open water and winter angling seasons, involve counting and interviewing anglers about their daily catches. They are used to estimate fishing pressure, catch and harvest rates. Together, these surveys help determine the overall health and sustainability of the population and whether current regulations are appropriate.

STATUS OF LAKE WHITEFISH AND CISCO IN LAKE NIPISSING

Too few whitefish are sampled in the annual FWIN program to accurately assess their numbers. However, cisco catches reveal a drop in their abundance from 2002 to 2006, followed by stable catches.

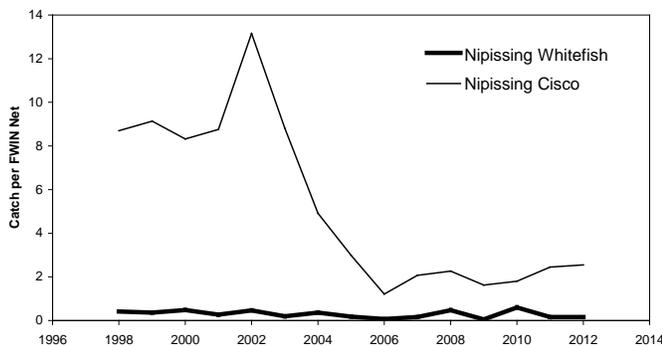


Figure 2: Relative abundance of lake whitefish and cisco (herring) in Lake Nipissing as measured as catch per unit effort represented by the number of fish caught per net during Fall Walleye Index Netting.

Angling harvest of lake whitefish on the lake has been relatively stable to slightly decreasing since the 1980s. Cisco harvest has stabilized at a low level following several large peaks in the 1980s and 2000s.

As noted earlier, assessment data is limited on these two species. Further assessments need to be completed in order to acquire a better understanding of the status of these populations.

It is also important to note, that these two species' life history patterns are heavily influenced by temperature and the need for cold water. As such, any change towards warmer lake waters could negatively impact the species.

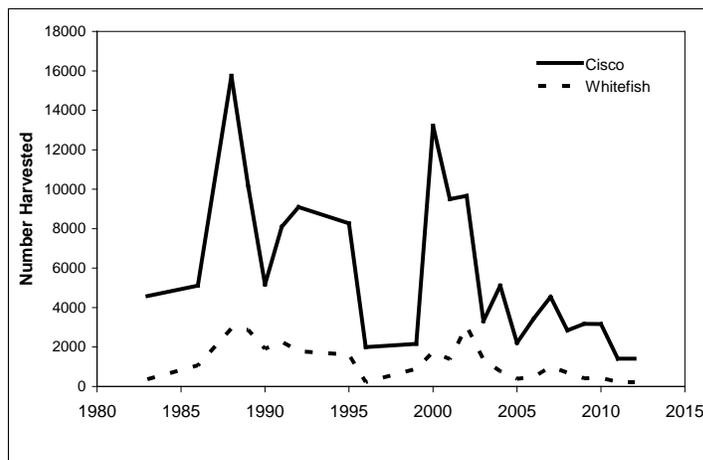


Figure 3: Harvest patterns of cisco and whitefish on Lake Nipissing as represented by numbers of fish harvested during both the open water and winter seasons.

Acknowledgement: Nipissing First Nation provided the data used in Figure 1.

For more information, please contact:
 Scott Kaufman, Nipissing Area Large Lake Biologist, MNR North Bay, 3301 Trout Lake Road, North Bay, ON P1A 4L7
 705-475-5537
Scott.Kaufman@Ontario.ca