

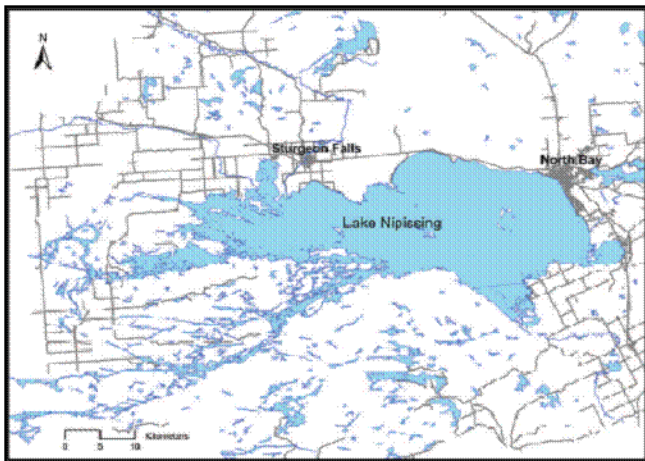
*Natural. Valued. Protected.*

## MUSKELLUNGE 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 MUSKELLUNGE FISHERY

Muskellunge is an under-utilized species on the lake and is primarily targeted as a trophy fishery. Assessment data suggests that Lake Nipissing has a high quality muskellunge fishery, from the perspective of producing large fish. On average a thousand hours of open water angling effort targets muskies on the lake.

### MUSKELLUNGE BIOLOGY

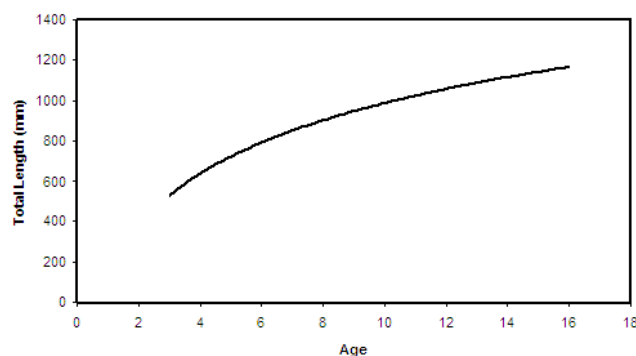
Muskellunge is the second largest freshwater fish in Ontario after the lake sturgeon.



They thrive in warm, heavily vegetated lakes, stumpy, weedy bays, and slow, heavily vegetated rivers. Muskellunge are solitary and sedentary, and ambush predators that remain close to vegetation or near stumps.

Females grow faster, are larger and live longer than males. Therefore, most trophy muskie are typically females. Spawning for both sexes begins between three and five years of age. Spawning takes place shortly after the ice melts in April and continues on into early May, slightly after northern pike. Spawning occurs in heavily vegetated floodplains of rivers, marshes, and bays of larger lakes.

Growth in length for the species is very rapid in the first three years and only slows with sexual maturation. While growth in weight continues as the fish ages, size depends on the availability of food fishes of the appropriate size.



**Figure 1:** Muskellunge growth pattern in Lake Nipissing as measured by mean length by year caught during Ice Out Trap Netting.

FACT SHEET: MUSKELLUNGE IN LAKE NIPISSING

**ASSESSING THE LAKE NIPISSING MUSKELLUNGE FISHERY**

The key objectives for muskellunge in the 2007-2010 Management Plan were:

- monitor the muskellunge population; and
- maintain a healthy population of large muskellunge in Lake Nipissing.

To assess our achievement of these objectives, two types of fisheries assessment data are collected: fishery-independent and fishery-dependent data. Ice Out Trap Netting Surveys are an assessment tool used to collect fishery-independent data and used to provide measures of relative abundance, as well as information on growth and other life history characteristics for particular species.

Creel surveys, conducted during both open water and winter seasons, involve counting and interviewing anglers about their daily catches. Fishery-dependent data 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.

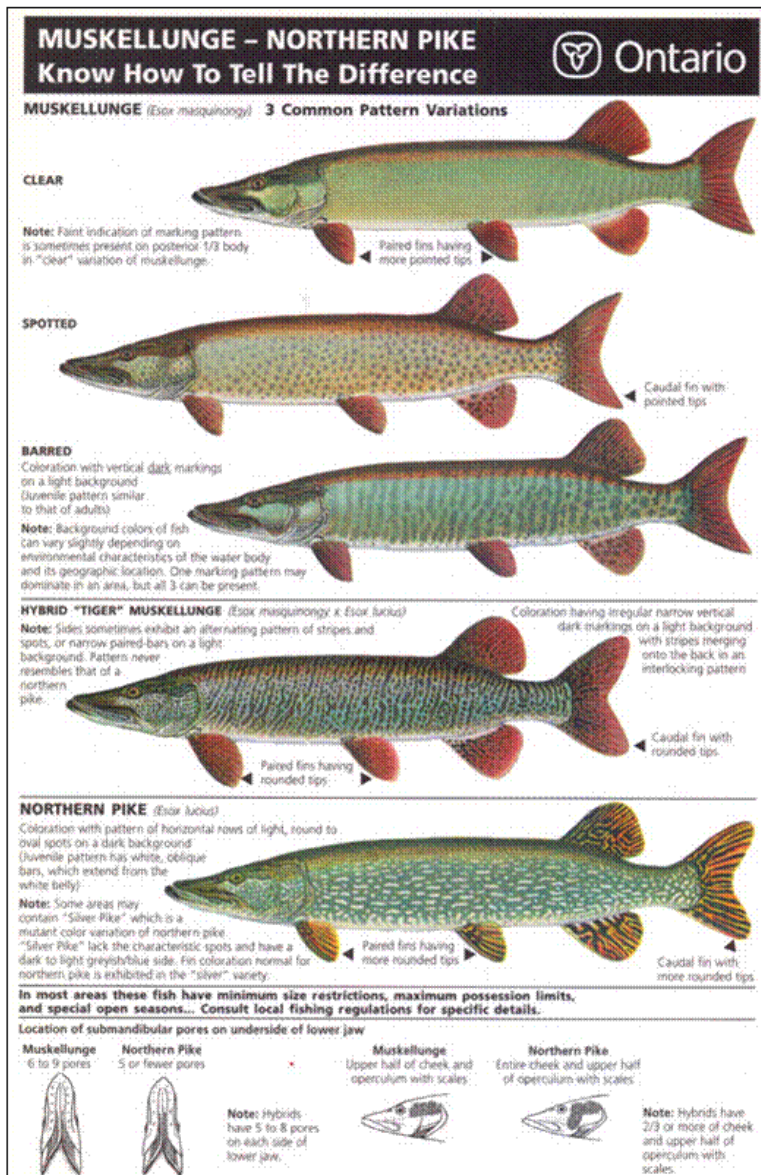
**STATUS OF MUSKELLUNGE IN LAKE NIPISSING**

Assessment data specific to muskellunge are limited for the lake. A trap-netting study conducted in 2000 observed a number of very large fish in the catch, measuring 117 to 137 cm (46 to 54 in.) and weighing 18 kg and more. This suggests that Lake Nipissing has a high quality muskellunge fishery that produces large fish. Studies on muskellunge growth rates have been used to develop biologically-based size limits designed to protect large individuals in a population. The current regulation for muskie on the lake allows anglers to catch and keep one over 122 cm (48 inches) for a sport licence and zero fish for a conservation licence.

Based on the analysis completed to date, it appears that Lake Nipissing is capable of producing very large fish. As a result, management objectives have typically focussed on trophy opportunities, an approach that has gathered public support as indicated during the previous public consultation process.

**KNOW THE DIFFERENCE**

"Know The Difference" signage initiatives are part of Muskies Canada's efforts to help educate the public to be able to recognize the difference between muskie and pike. These signs can be found posted across the province in various locations.



**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](mailto:Scott.Kaufman@Ontario.ca)