

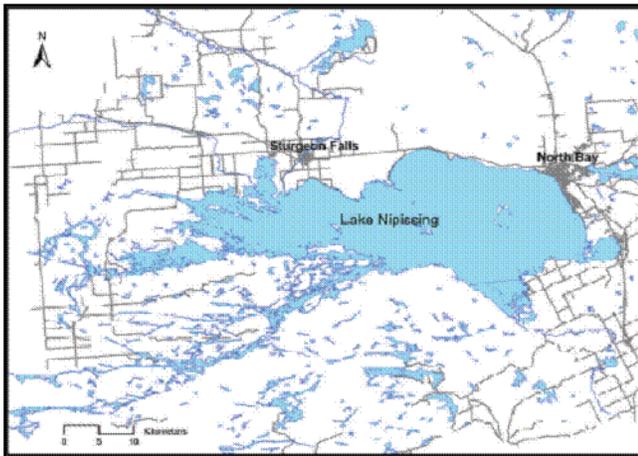
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SMALLMOUTH AND LARGEMOUTH BASS IN LAKE NIPISSING

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.



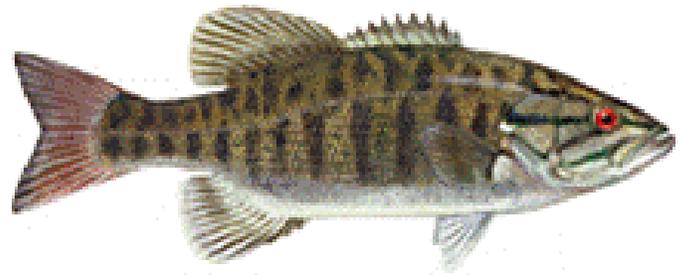
LAKE NIPISSING SMALLMOUTH AND LARGEMOUTH BASS FISHERY

In Ontario, smallmouth and largemouth bass are two of the most important fish for sport fishing and related tourism. Despite this fact, average angling hours for bass on the lake are estimated at only 10,000 hours per year, or 2.5 per cent of all angling pressure.

SMALLMOUTH AND LARGEMOUTH BASS BIOLOGY

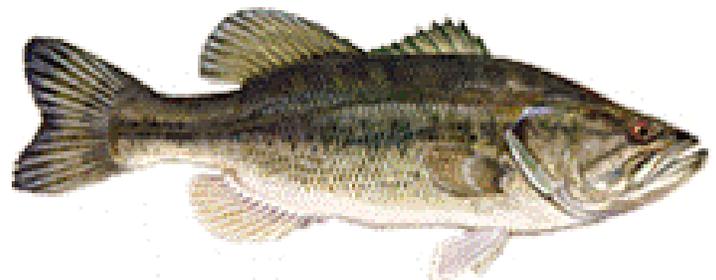
Smallmouth and largemouth bass thrive in warm water habitats of lakes and rivers. Smallmouth bass prefer clear, rocky waters with sandy substrates while largemouth bass prefer shallower waters with an abundance of aquatic vegetation.

Smallmouth bass in Lake Nipissing, typically reach 40 cm (16 in.) by five to seven years of age. Males reach sexual maturity between three and five years of age while females mature slightly later, between four and six years of age.



Smallmouth Bass

Largemouth bass grow slightly slower than smallmouth bass. They typically reach 40 cm (16 in.) by six to eight years of age.



Largemouth Bass

The diet of smallmouth and largemouth bass changes over time with growth. Zooplankton dominates the diet of younger fish, while other fish species and crayfish dominate the diet of the older bass. Crayfish are a very important food source for bass in Lake Nipissing, comprising up to 75 per cent of the adult diet.

ASSESSING THE LAKE NIPISSING SMALLMOUTH (AND LARGEMOUTH BASS) FISHERIES

During the last management plan objectives were only set for smallmouth bass. The key objectives for smallmouth bass in the 2007-2010 plan were:

- monitor the smallmouth bass population in Lake Nipissing; and
- promote and maintain a healthy smallmouth bass population.

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 and Nearshore Community Index Netting are assessment tools used to collect fishery-independent data and 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 seasons, involve counting and interviewing anglers about their daily catches. Fishery-dependent data are used to estimate fishing pressure, catch and harvest rates. Data have also been collected from anglers during angler tournaments that run each year on the lake. Together, these surveys help determine the overall health and sustainability of the population and whether current regulations are appropriate.

STATUS OF THE SMALLMOUTH AND LARGEMOUTH BASS FISHERY IN LAKE NIPISSING

Smallmouth and largemouth bass populations in Lake Nipissing are considered to be healthy with a robust age structure (Figure 1) and low adult mortality. Both fisheries are considered underutilized with only five per cent of targeted effort in open water angling for smallmouth bass and less than one per cent for largemouth bass (Figure 2). Total angler harvest of both species is low (≤ 5000 /yr fish) compared to other species (e.g., perch is 20,000/yr fish) on the lake. Catch rates range from 1 fish per two hours to 3.5 fish per hour (Figure 3 & 4).

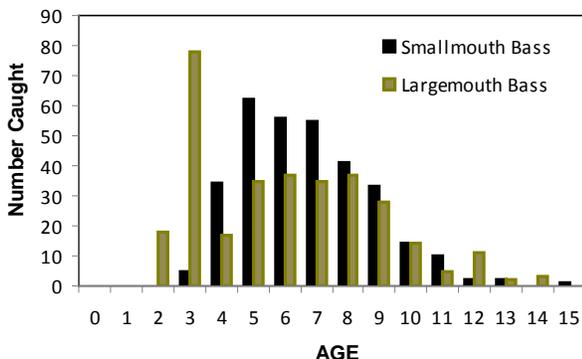


Figure 1: Lake Nipissing bass age class distributions as represented by number of fish caught during Ice Out Trap Netting Surveys.

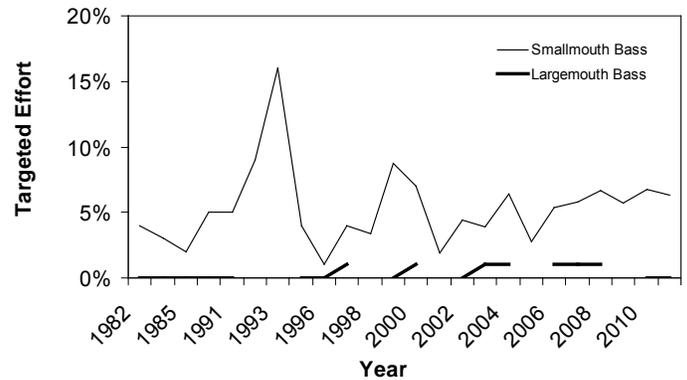


Figure 2: Percentage of targeted effort for bass in Lake Nipissing fishery as determined from creel surveys.

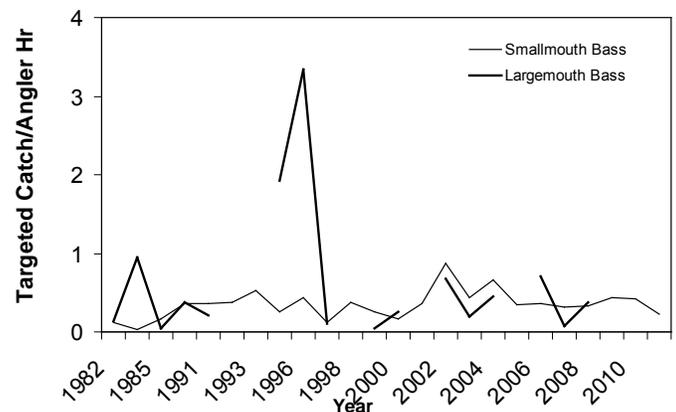


Figure 3: Catch rates of bass in Lake Nipissing as determined from targeted harvest from creel (open and winter) surveys.

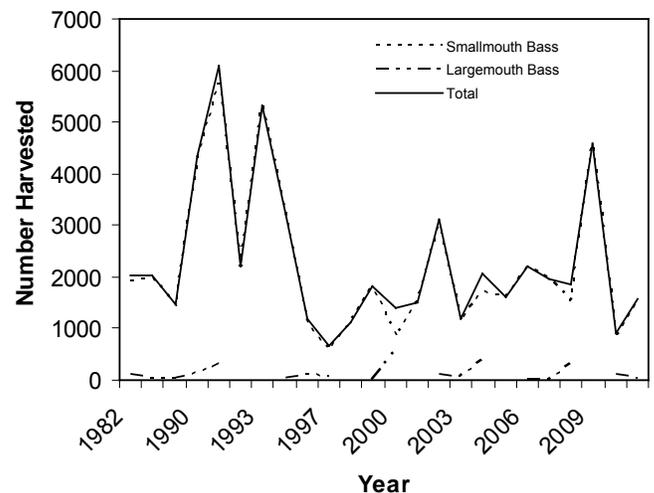


Figure 4: Harvest numbers of bass in Lake Nipissing as determined from creel (open and winter) surveys.

For more information please contact:

Scott Kaufman, Nipissing Area Large Lake Biologist, MNR
North Bay, 3301 Trout Lake Road, North Bay, ON

705-475-5537 Scott.Kaufman@Ontario.ca