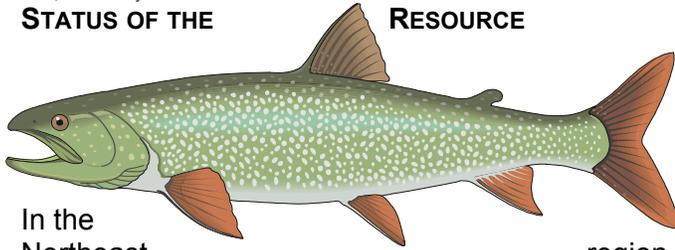


Natural. Valued. Protected.

FACT SHEET: Lake Trout in Fisheries Management Zone 11

This fact sheet for lake trout in Fisheries Management Zone (FMZ) 11 is based on the report, *Status of Lake Trout Populations in Northeastern Ontario (2000-2005)* (Selinger et al., 2006) and on other recent assessments.

STATUS OF THE RESOURCE



In the Northeast region, lake trout fisheries were in poor condition overall. For example, only 32% of the 130 lakes sampled had healthy numbers of lake trout. Of these lakes with healthy populations, only 1/2 of them (or 17% of the lakes overall) were being fished at sustainable levels (Figure 1).

Lake trout fisheries in FMZ 11 were no different

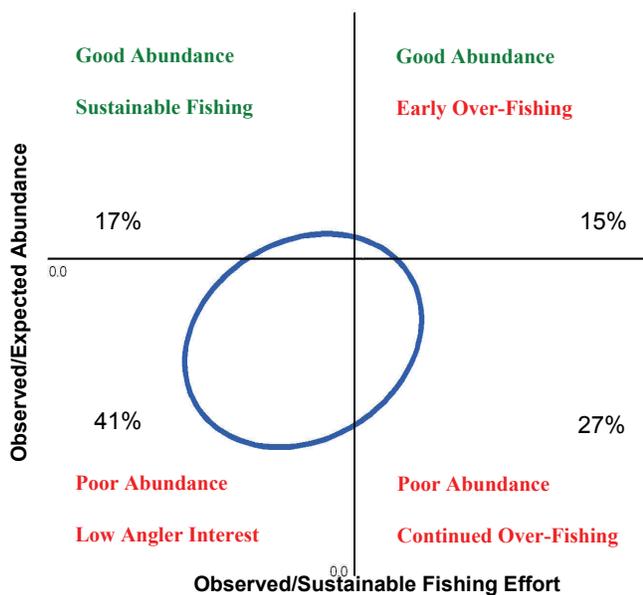


Figure 1: The state of lake trout fisheries in Northeastern Ontario (Selinger et al. 2006). The condition of FMZ 11 lake trout fisheries was not substantially different from those in the rest of the region as a whole.

than the rest of the region. Only 28% of FMZ 11 lakes have healthy populations, and of those, less than half of them (13%) were being fished at a sustainable level.

Further analysis shows that the vast majority of populations were at abundances less than 50% of what could be considered healthy (Figure 2). In fact, many of the populations were 75% below a healthy level.

STRESSORS ON LAKE TROUT

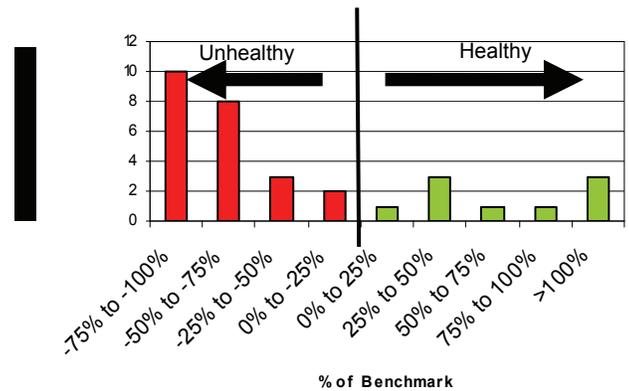


Figure 2: Graph of the number of lake trout populations sampled in FMZ 11 as a percentage of their respective healthy abundance benchmark.

The lake trout is a sensitive species that requires clean, cold, well oxygenated water. They lay few eggs, relative to other species, and are generally older to mature (see Lake Trout Biology section).

The main stressors on lake trout are:

- Harvest - lake trout populations can only sustain small amounts of angling pressure. In most cases, lakes can not sustain harvests of more than 0.75kg per hectare per year.
- Introduced species - it is illegal to move species such as smallmouth bass, walleye or rock bass into lake trout lakes. Such movements permanently damage populations.
- Acidification - lake trout eggs can not survive in acidic waters (pH below 5.5). Reduced acid emissions are reducing this problem slowly.
- Water levels - lake trout eggs incubate in inshore areas during the winter months. Draw downs during these times may de-water eggs, killing them.

STRESSORS IN FMZ 11

Most of the lakes in FMZ 11 that were acidified are recovering on their own (passive restoration). Only a small percentage of lakes are affected by water level fluctuations. Angling occurs on 98% of the lake trout lakes in FMZ 11, representing 90% of the available lake trout water by surface area.

COMPARISON TO REFERENCE LAKES

Stressor	% of Surface Area	% of Number of Lakes
Acidification – not restored	4 %	6 %
Acidified - showing passive restoration	24 %	13 %
Water level fluctuations (man made dams)	27 %	9 %
Angling pressure	90 %	98 %

Six reference lakes were surveyed in the northeast region. These reference lakes were either extremely remote and fished at very low levels, or were long term fish sanctuaries (more than 10 years without fishing).

Fish densities in the reference lakes were almost triple the regional average. In addition, populations in the reference lakes contained a greater proportion of mature female lake trout. The average age of lake trout in the reference lakes was about twice that of the regional average (12.7 versus 6.1 years). The table below shows other comparisons of lake trout size, etc., between regional lakes and reference lakes.

Cette publication spécialisée n'est disponible qu'en anglais.

LAKE TROUT BIOLOGICAL INFORMATION

State Indicator	Regional Lakes	Reference Lakes
Adult Abundance as % of MSY Benchmark	77%	124%
Female Length @ 50% Maturity	40.2 cm	38.6 cm
Overall Lake Trout Density	6.27 /ha	17.7 /ha
Mature female Lake Trout Density	1.2 /ha	5.7 /ha
Average Age	6.1 years	12.7 years
Average Age of Mature Females	9.3 years	15 years
Percent of Population as Mature Females	19%	32%
Average Total Length	36.9 cm	48.8 cm
Average Total Length of Mature Females	47.0 cm	54.1 cm

The growth of lake trout in FMZ 11 is highly variable, and is typically determined by the type of forage available in a given lake. For instance, when few fish are available to eat, lake trout will consume mostly freshwater shrimp (Mysis) and other invertebrates. Lake trout in these lakes typically grow slowly and do not reach large sizes. In contrast, in large lakes where there are cisco (lake herring), smelt, or other abundant fish to eat, lake trout can grow to very large sizes. Figure 3 shows the average, minimum and maximum size lake trout achieve at a given age in FMZ 11.

The following table shows how large and how old female lake trout are, in FMZ 11, when they

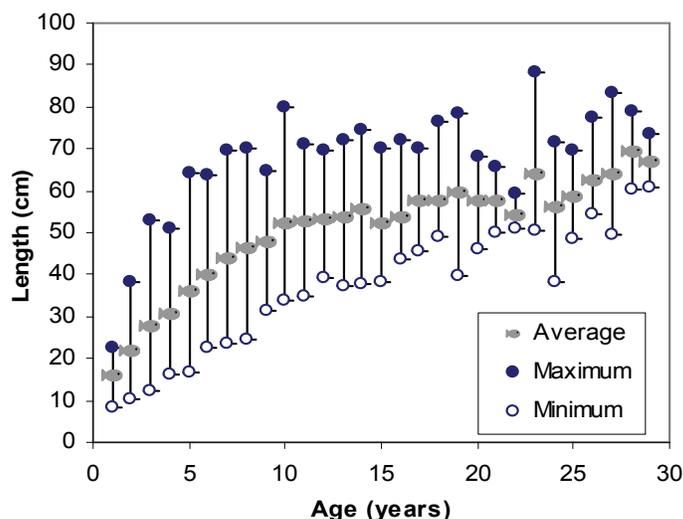


Figure 3: Lake trout growth in FMZ 11

spawn for the first time. Typically, it takes a female about 7 years to become sexually mature.

The FMZ 11 Advisory Council is currently deliberating on the desired future condition of

Characteristic	Min	Avg	Max
Female age-at-maturity	3 years	7 years	11 years
Female length-at-maturity	30 cm	40 cm	54 cm

lake trout over the next 20 years.

If you have any questions, please contact: Chuck McCrudden, Lead FMZ 11 Biologist 705-475-5522 or chuck.mccrudden@ontario.ca