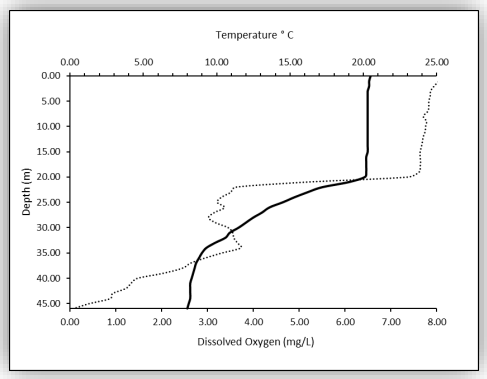
A/OFRC PROJECT UPDATE
NIPISSING FIRST NATION

March 2017

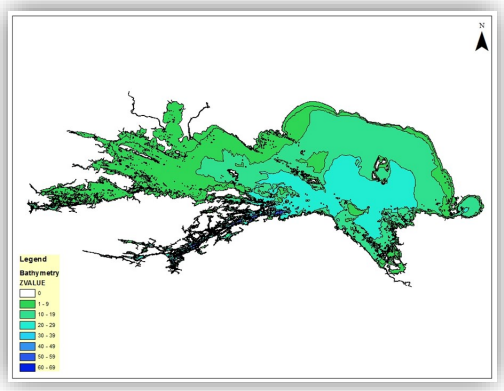
LAKE WHITEFISH INDEX NETTING

INTRODUCTION

The Anishinabek / Ontario Fisheries Resource Centre (A/OFRC) in partnership with Nipissing First Nation, and in accordance with Dokis First Nation, completed a Lake Whitefish Index Netting Survey on Lake Nipissing. The objective of this survey was to capture, biosample, and compare population dynamics of the lake whitefish population in Lake Nipissing. This survey took place from September 8—22, 2016.



Temperature and dissolved oxygen profile for the upper French River. Note that temperatures exceed 20 degrees up to 20 m within the water column, indicating summer stratification tends. In addition, the graph represents a typical eutrophic lake profile. High water temperature at the depth of 20 m and low dissolved oxygen beginning at 38 m may limit the amount of habitat available to Whitefish in hot years, such as that experienced in the Nipissing watershed in 2016.



Bathymetry map of Lake Nipissing

METHODS

A total of 15 net sets, consisting of graded gillnet mesh ranging from 1.5" to 5.0", were set overnight in depths ranging from 19.0 –47.7 m when surface water temperatures ranged from 18.8—19.9°C and air temperatures ranged from 12.5-23.0°C.

RESULTS

A total of 2420 fish were captured representing 11 different species. A total of 1786 lake herring (cisco) and 206 lake whitefish were captured.

CONCLUSION

Lake Nipissing can be described as a shallow lake with an average depth of 4.5 m. Due to its shallow depth, the lake is prone to heating, and a high epilimnion (upper, warmer layer of water) can displace lake whitefish forcing them to find a thermal refuge in deeper portions of the lake. Therefore, most of the lake whitefish population of Lake Nipissing can be found in the deeper portion of the upper French River. In the fall, winter, and spring, when water temperatures decrease, lake whitefish can be found within the Lake Nipissing basin.

Results from this survey will be compared to similar surveys conducted in 2003-2004 and 2011-2012.

A full technical report will be completed in spring 2017.

Typical morphology of lake herring (cisco) captured in index nets

Typical lake whiteish captured in index nets

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