

# HOW TO READ A LAKE FACT SHEET

## LAKE FACT SHEETS

Lake fact sheets are available for 45 lakes within the Cataraqui Region (i.e. lakes where current and / or past monitoring information are available). While every lake is unique, it is possible to take measurements and samples to compare results against standards or classifications to identify possible concerns, changes, or special considerations. In each report, lake health is ranked in relation to water quality and invasive species when information is available from 2009 to 2015. Below is a description of the ranking method and additional information found within each report.

Specific parameters included, where available, for each of the reported lakes are:

1. Lake Statistics
2. Lake Map
3. Lake Characteristics
4. Vulnerability
5. Water Quality
6. Aquatic Diversity

### Lake Statistics

A brief summary provides information about the lake's location and physical features.

### Lake Map

A bathymetric map is presented with water inflows, outflows, public water access points, and other features of interest.

### Lake Characteristics

Each lake is defined based on characteristics such as lake depth, water temperature, and whether the lake exists as a result of natural drainage patterns or a water control structure. Other important information such as land use, geology, water level fluctuations, protected or naturally significant areas, and recreational access points are also presented.

### Vulnerability

Lakes within the Cataraqui Region have been ranked by three factors that are important to function and resilience: level of eutrophication, invasive species presence, and risk of acidification.

<b>Eutrophication</b>	<b>Low:</b>	Low nutrient levels (oligotrophic), minimal algae present
	<b>Medium:</b>	Moderate nutrient levels (mesotrophic), algae abundant
	<b>High:</b>	High nutrient levels (eutrophic), algae blooms present

<b>Invasive Species*</b>	<b>Absent:</b>	Aquatic invaders monitored but none observed
	<b>Present:</b>	Aquatic invaders reported and established

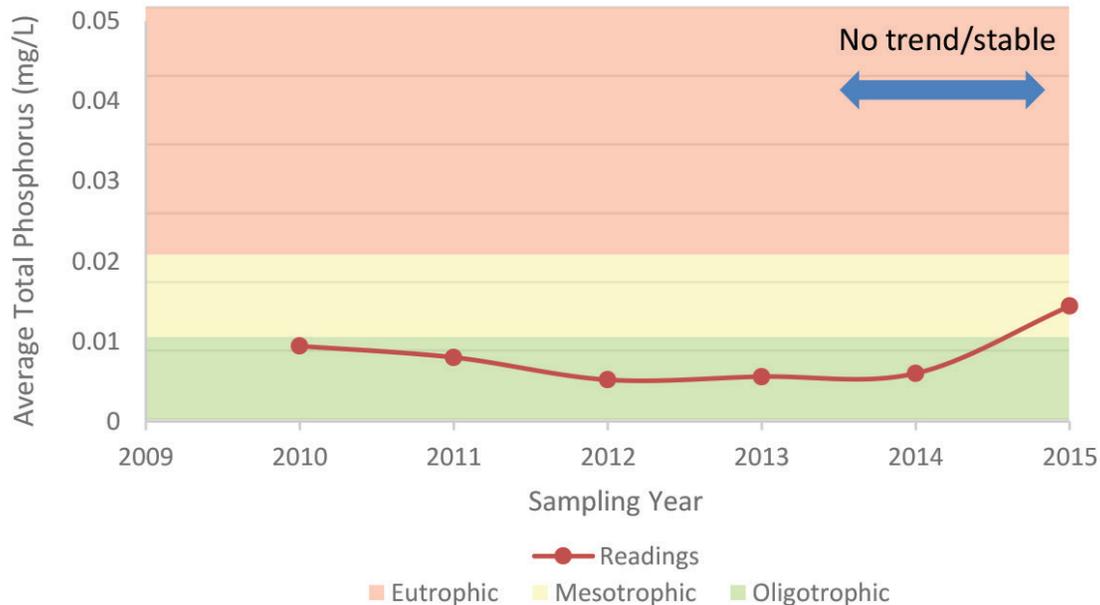
<b>Acidification</b>	<b>Low:</b>	pH 6.5 to >7.5, not impacted, neutral or alkaline conditions
	<b>Medium:</b>	pH 6 to 6.5, sensitive but acceptable range
	<b>High:</b>	pH <6 hyper-sensitive, threatened or critically impaired

\* Only reported for zebra mussels

## Water Quality

Lake water quality over the past seven years (2009 to 2015) is reported for available parameters including lake temperature (thermal regime), dissolved oxygen, trophic status, water clarity (Secchi disk depth), average total phosphorus, pH, and calcium concentrations.

As total phosphorous is one of the mostly influential and widely monitored parameters in Cataraqui Region lakes, each lake summary report includes a discussion about any identified trends, and a graph indicating the trophic status classification for each year's average as compared to the Provincial Water Quality Objective of 0.02 mg/L (see example below).



## Aquatic Diversity

Lake environments are host to a wide variety of aquatic organisms including plants, fish, reptiles, amphibians and birds. For each Lake Summary Report, fisheries and amphibian data are reported where data is available.

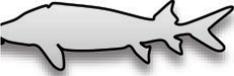
### Fisheries

The majority of lakes have a high diversity of fish species indicating good water quality and suitable temperatures throughout. Habitats support both warmwater and coldwater fisheries creating complex food-webs and opportunities for recreational sport fishing. Most notably are the number of lakes supporting sensitive trout populations such as lake trout (14 out of 50), some of which are annually stocked by the Ontario Ministry of Natural Resources and Forestry<sup>1</sup>.

The Province of Ontario is categorized into 20 Fisheries Management Zones to provide customized local management of aquatic habitat, designate different catching limits, protect vulnerable fisheries, re-establish vulnerable populations, and adjust fishing seasons based on climate differences<sup>2</sup>. Each zone has its own fishing regulations that must be followed. The Cataraqui Region is part of Fishing Management Zone 18.

Fish species found in the Cataraqui Region are identified in the table below. There are also a variety of minnows and smaller shoreline fish species present that have not been noted, but are

essential for sustaining food webs and aquatic communities. For each lake within this report, common fish families and species are listed along with information on fish stocking, fishing regulations, guidelines for eating sport fish, and species of special concern in the region.

	Common Fish Families	Species Present	
		Common Name	Scientific Name
	Sturgeons	Lake Sturgeon	<i>Acipenser fulvescens</i>
	Freshwater Eels	American Eel	<i>Anguilla rostrate</i>
	Gars	Spotted Gar	<i>Lepisosteus oculatus</i>
	Bowfin	Bowfin	<i>Amia calva</i>
	Carps and Minnows	Common Carp	<i>Cyprinus carpio</i>
	Suckers	White Sucker	<i>Catostomus commersonii</i>
	North American Catfish	Brown Bullhead	<i>Ameiurus nebulosus</i>
	Trout and Salmon	Lake Trout Brook Trout	<i>Salvelinus namaycush</i> <i>Salvelinus fontinalis</i>
	Pikes	Northern Pike	<i>Esox lucius</i>
	Sticklebacks	Brook Stickleback	<i>Culaea inconstans</i>
	Sculpins	Mottled Sculpin	<i>Cottus bairdii</i>
	Cods	Burbot	<i>Lota lota</i>
	Temperate Basses	White Bass White Perch	<i>Morone chrysops</i> <i>Morone americana</i>
	Sunfishes and Basses	Largemouth Bass	<i>Micropterus salmoides</i>
		Smallmouth Bass	<i>Micropterus dolomieu</i>
		Pumpkinseed	<i>Lepomis gibbosus</i>
		Bluegill	<i>Lepomis macrochirus</i>
		Rock Bass	<i>Ambloplites rupestris</i>
		Black Crappie	<i>Pomoxis nigromaculatus</i>
	Perches and Darters	Yellow Perch	<i>Perca flavescens</i>
		Walleye	<i>Sander vitreus</i>
	Herrings	Alewife	<i>Alosa pseudoharengus</i>
	Topminnows	Banded Killifish	<i>Fundulus diaphanus</i>
	Silversides	Brook Silverside	<i>Labidesthes sicculus</i>

\* images not to scale

## Species at Risk

The Cataraqui Region is home to a variety of sensitive species that are at risk due to changes in habitat from development and climate change. Each lake summary report lists fish, amphibian and reptile species identified by the Ontario Ministry of Natural Resources and Forestry, Fisheries and Oceans Canada, and Ontario Nature Reptile and Amphibian *Atlas as Endangered, Threatened, or Species of Special Concern* which are under pressure and would benefit from habitat conservation.

## Lake Fact Sheets

Click on the watershed name to reveal lake names and associated fact sheets. All fact sheets are in PDF format, click on the lake name to view.

Assessment Report	Cataraqui River Watershed	Gananoque River Watershed	Millhaven Creek Watershed	Collins Creek Watershed
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	<h3>CATARAQUI RIVER WATERSHED</h3> <p>For further details on how to read the sections of the Lake Fact Sheets view our '<b>How to Read a Fact Sheet</b>' document.</p> <p>Fact Sheets are in PDF format.</p>	<ul style="list-style-type: none"><li>» <b>Benson Lake</b></li><li>» <b>Big Clear Lake</b></li><li>» <b>Birch Lake</b></li><li>» <b>Buck Lake</b></li><li>» <b>Canoe Lake</b></li><li>» <b>Colonel By Lake</b></li><li>» <b>Cranberry Lake</b></li><li>» <b>Desert Lake</b></li><li>» <b>Devil Lake</b></li><li>» <b>Dog Lake</b></li><li>» <b>Elbow Lake</b></li><li>» <b>Fishing Lake</b></li><li>» <b>Guerley Lake</b></li></ul>	<ul style="list-style-type: none"><li>» <b>Indian Lake</b></li><li>» <b>Knowlton Lake</b></li><li>» <b>Loon Lake</b></li><li>» <b>Loughborough Lake</b></li><li>» <b>Lower Rock Lake</b></li><li>» <b>Newboro Lake</b></li><li>» <b>North Otter Lake</b></li><li>» <b>Opinicon Lake</b></li><li>» <b>Sand Lake</b></li><li>» <b>Troy Lake</b></li><li>» <b>Upper Rock Lake</b></li><li>» <b>Whitefish Lake</b></li></ul>
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<sup>1</sup> MNRF (Ministry of Natural Resources and Forestry). 2015. Inland Ontario Lakes Designated for Lake Trout Management. Fisheries Section, Species Conservation Policy Branch. Accessed January 2016.

<https://dr6j45jk9xcmk.cloudfront.net/documents/4922/inland-ontario-lakes-final-english.pdf>

<sup>2</sup> MNRF (Ministry of Natural Resources and Forestry). 2016. Fisheries management zones. Accessed December 2016.  
<https://www.ontario.ca/page/fisheries-management-zones>