LAKE FACT SHEET (2017)

WHITEFISH LAKE

CATARAQUI REGION CONSERVATION AUTHORITY
The Cataraqui Region Conservation Authority (CRCA) has provided environmental leadership and service to local communities since 1964. It is one of 36 watershed-based agencies within Ontario dedicated to the conservation and protection of the natural environment through a variety of management tools including land ownership, education, monitoring, reporting and regulation.

To learn more about the lakes in our region, the CRCA and partners collect samples, take measurements and compare this information against established standards to identify any significant changes or areas of concern. This Lake Fact Sheet focuses on key parameters to assess the health and resilience of Whitefish Lake with respect to nutrient loading, invasive species colonization and acidification.
Whitefish Lake is located in the Cataraqui River watershed directly south of Jones Falls. Nearby lakes include Crow Lake, Horseshoe Lake, Traverse Lake, Mud Lake, Troy Lake, Little Cranberry Lake and Grippen Lake.

County: United Counties of Leeds Grenville
Municipality: Township of Rideau Lakes and Leeds and the Thousand Islands

Watershed: Cataraqui River
Average Depth (m): 2.1

Coordinates: 44.514 Lat., -76.239 Long.
Volume (m³ x10⁶): 13.61

SURFACE AREA (HA)  MAX. DEPTH (M)  SHORE LENGTH (KM)
437               7.6               48.8
The map below shows water depths and the topography of the lake bottom (bathymetry). Water flows into Whitefish Lake from Sand Lake through Jones Falls, Little Mud Lake, and surrounding wetlands. The majority of outflow is to Little Cranberry Lake with a minor amount of flow to Morton Creek.
Whitefish Lake is a natural, shallow, warmwater lake located on the Canadian Shield and enhanced by the construction of a dam. Like the majority of lakes within the Cataraqui Region, Whitefish Lake mixes in the spring and fall due to lake water warming and cooling. During this mixing process, nutrients are cycled throughout the lake, giving the water a cloudy appearance as well as a brown or green hue from algae that feed off the cycling nutrients. Later in the spring, summer, and winter, water temperatures vary by depth (thermal stratification) so multiple fish species are found at different depth and temperature ranges. Refer to the Cataraqui Region Lake Assessment Report for more detail.

Whitefish Lake water levels are controlled by Parks Canada and Energy Ottawa as part of the Rideau Canal System at the Jones Falls Dam to the north of the lake, and the Morton Spillway Dam at the outlet to Morton Creek. Water levels are regulated with Dog Lake, Little Cranberry Lake, Cranesnest Lake, and Cranberry Lake to within 0.5-meter fluctuation based on changes in precipitation, drought or flood conditions, and the rate of evaporation.

**LAKE FEATURES**

**IMPORTANT NATURAL FEATURES:**
Provincially Significant Wetland, Area of Natural & Scientific Interest

**SURROUNDING LAND USE:**
Woodlots, Agriculture, Wetlands, Residential (seasonal & permanent)

**PRIMARY WATER LEVEL CONTROL:**
Parks Canada and Energy Ottawa

**WATER ACCESS:**
3 km west of Jones Falls Road (parking and boat fee)
Information about Whitefish Lake has been used to identify whether it is vulnerable to a few common stressors to lake water quality and biodiversity. Stressors include excess nutrient build up (eutrophication), the introduction of invasive species, and pH levels that are too low (acidification). Refer to the scoring card below that grades these risks for Whitefish Lake.

**EUTROPHICATION:** The process of increasing nutrient levels in a waterbody. It results in excess algal growth, lower oxygen levels, and reduced biodiversity. For more information refer to the *Cataraqui Region Lake Assessment Report*.

- **Low:** Low nutrient levels (oligotrophic), minimal algae present
- **Medium:** Moderate nutrient levels (mesotrophic), algae present
- **High:** High nutrient levels (eutrophic), algae bloom presence likely

**INVASIVE SPECIES:** Species that are not native to an environment, but are introduced, establish, and reproduce in a new system. For more information about invaders in the region, refer to *Appendix 5* of the Cataraqui Region Lake Assessment Report.

- **Absent:** No aquatic invaders reported
- **Present:** Aquatic invaders established
**ACIDIFICATION:** The process of lake water becoming more acidic, resulting in reduced biodiversity and increased water clarity.

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

**WHITEFISH LAKE VULNERABILITY SCORES**

<table>
<thead>
<tr>
<th>Eutrophication</th>
<th>Invasive Species</th>
<th>Acidification</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDIUM</td>
<td>PRESENT</td>
<td>LOW</td>
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</tbody>
</table>

- Based on an average total phosphorus concentration of 0.015 mg/L, nutrient levels are moderate providing for a productive lake with some risk of nuisance algae bloom growth
- Zebra mussel veligers (young mussels) have been reported by the Invasive Tracking System
- Whitefish Lake maintains a netural pH with little risk to acidification

The water quality of a lake is affected by many factors including temperature, pH, oxygen, nutrients (trophic status), and transparency (Secchi disk depth). Classifying lakes by these factors can provide a better understanding of lake health. For more information, refer to the Cataraqui Region Lake Assessment Report.

**Water Quality Summary**

- **Thermal Regime:** Warmwater
- **Dissolved Oxygen (mg/l):** ~9.0
- **Trophic Status:** Mesotrophic
- **Total Phosphorus (mg/l):** 0.015
- **pH:** 8.2
Nutrient concentrations have been stable over the past seven years within the range of mesotrophic classification. An average Secchi disk depth of less than five meters indicates moderate water clarity and reduced turbidity within the lake environment, suitable for visual predators such as largemouth bass.

Average calcium concentrations are moderate providing adequate concentrations for animal growth and reproduction. A pH of 8.2 indicates slightly alkaline conditions providing a stable buffering capacity. Zebra mussels have been reported in the lake by Parks Canada.
Whitefish Lake is host to a variety of aquatic species including many popular sport fish. Fish species previously found in Whitefish Lake are listed below. There are also a variety of minnows supplementing the food chain along the shallow shoreline areas that have not been recorded.

<table>
<thead>
<tr>
<th>COMMON FISH FAMILIES</th>
<th>SPECIES PRESENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>North American Catfish</td>
<td>Brown Bullhead</td>
</tr>
<tr>
<td>Pikes</td>
<td>Northern Pike</td>
</tr>
<tr>
<td>Sunfishes &amp; Basses</td>
<td>Largemouth Bass</td>
</tr>
<tr>
<td></td>
<td>Smallmouth Bass</td>
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<tr>
<td></td>
<td>Pumpkinseed</td>
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<tr>
<td></td>
<td>Bluegill</td>
</tr>
<tr>
<td></td>
<td>Black Crappie</td>
</tr>
<tr>
<td>Carps &amp; Minnows</td>
<td>Variety</td>
</tr>
<tr>
<td>Perches &amp; Darters</td>
<td>Yellow Perch</td>
</tr>
</tbody>
</table>
There are some species at risk in the region that will benefit from good lake care practices. At the time of reporting, the following species at risk have been observed within the last ten years:

- Eastern Musk Turtle
- Northern Map Turtle
- Snapping Turtle

Additional species may also be present, but have yet to be reported. It is important to conserve shoreline vegetation and woody debris, and reduce pollution to maintain healthy aquatic communities.

For more information, follow the links below:

- Fish ON-Line
- Reptile and Amphibian Atlas
- Zone 18 Fishing Regulations
- Guide to Eating Ontario Fish
- Species at Risk by Region
Maintain a natural shoreline:
Create a buffer zone by planting native species to control erosion, increase habitat for wildlife, maintain cooler water temperatures (shade), protect from flooding and improve water quality.

Contact Watersheds Canada to learn more about their Natural Edge shoreline naturalization program.

Build low impact-docks:
Increase habitat and reduce sediment disruption. Examples of low impact docks include cantilever, floating or post styles.

Reduce runoff from pollutants:
Use phosphate-free, biodegradable soaps and detergents at a distance from the lake and limit or eliminate fertilizers to decrease nutrient input. Limit the amount of hard surfaces to control runoff of pollutants entering the lake.

Handle and dispose of chemicals properly:
Fuel motor craft responsibly to avoid spills and bring extra chemicals and storage containers to a hazardous waste depots.

Manage animal waste and grazing areas:
Avoid overgrazing as it can expose soil and increase erosion. Remove animal waste to avoid excess nutrients.

Maintain your septic system:
Septic systems can last 15-25 years if properly maintained; pump out your septic tank every 3-5 years. Keep septic systems far from the shore to reduce risk of water pollution and limit damage.

Prevent the spread of invasive species:
Clean, drain, dry and disinfect any watercraft prior to entering the lake. Do not release live fishing bait or aquarium fish.
Become a citizen scientist:
Citizen science is a great way to learn and engage with nature. Volunteers provide valuable research that allow scientists to track environmental changes to a greater extent than if they were to do it alone. Learn how to get involved by visiting the sites below.

Invading Species Watch Program  
Lake Partner Program  
Loon Watch  
Nature Watch (frog, plant, ice, worm)  
Ontario Reptile & Amphibian Atlas  
Water Rangers

To report large blooms of algae:
Leeds, Grenville & Lanark Health Unit  613-345-5685  
Blue-Green Algae Bloom Sighting (MOECC)  1-800-268-6060

To report invasive species:
EDD Mapping System App  
Invasive Species Hotline (OFAH)  1-800-563-7711 or info@invadingspecies.com

For more information:
Cataraqui Region Conservation Authority  1-877-956-2722 or 613-546-4228  
Water Level Questions (Energy Ottawa)  613-225-0418 or info@energyottawa.com  
Water Level Questions (Parks Canada)  1-888-773-8888 or information@pc.gc.ca

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1 Data provided by Queen’s University (2014)  
2 Based on average total phosphorus data from the Lake Partner Program (2009-2015)  
3 Data provided by Queens’ University (2013)  
4 Ministry of Natural Resources and Forestry Fisheries Data (Fish ON-line and personal communication, 2016)  
5 Ontario Nature Reptile and Amphibian Atlas