

Aquatic Environment Report

Manitouwabing Lake

Author

Georgian Bay Mnidoo
Gamii Biosphere

September 2023

Prepared For

Township of McKellar &
Manitouwabing Lake
Community Association



TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
INTRODUCTION	1
WATER QUALITY	3
OVERVIEW	3
LAKE PARTNER PROGRAM	3
BENTHIC MONITORING	12
MANITOUWABING LAKE STATE OF THE BASIN REVIEW 2018	21
FISH COMMUNITIES	23
OVERVIEW	23
NEARSHORE COMMUNITY INDEX NETTING PROJECT	26
CONSUMPTION ADVISORIES	30
SUMMARY OF RECOMMENDATIONS	32
WATER QUALITY	32
FISH COMMUNITIES	33
STEWARDSHIP ACTIVITIES	33
REFERENCES	34
APPENDICES	36



EXECUTIVE SUMMARY

The purpose of this environment report prepared by the Georgian Bay Mnidoo Gamii Biosphere for the Township of McKellar and Manitouwabing Lake Community Association (MLCA) is to provide residents and cottagers with one report summarizing water quality and fish community monitoring data for Manitouwabing Lake. In addition, the report provides recommendations for further monitoring as well as possible stewardship activities. The report is divided into three sections to reflect this purpose – water quality, fish communities, and recommendations.

Water Quality

Volunteers on Manitouwabing Lake participate in the Lake Partner Program (LPP) and the MLCA and McKellar Township recently initiated a benthic monitoring program (Figure 1).



Figure 1. Active and recently active monitoring sites on Manitouwabing Lake.

The LPP collects data about phosphorus, water clarity, and calcium from volunteers. The simple tests for total phosphorus (TP) and water clarity provide a strong basis for assessing the health of the ecosystem, and whether TP is too high or too low.

Monitoring TP is very important as phosphorus is the nutrient that controls plant growth (including algae) in lakes. Measuring TP year after year is necessary to detect long-term changes in water quality that may be due to impacts of shoreline development, climate change, and other stressors.

A high-level summary of current Manitouwabing Lake LPP results is presented in Table 1. It is important to note that recent updates to information gathered through the LPP are limited. Due to the Covid-19 pandemic, the LPP received and analysed a greatly reduced number of water samples in 2020 and 2021. As such, gaps in the data may be present in these years. Where available, updated information is presented.

Table 1. Overview of Manitouwabing Lake LPP sampling results (Station 2973).

	Site ID 8	Site ID 9	Site ID 13	Site ID 18	Site ID 19	Site ID 23
TP average	n/a	n/a	n/a	n/a	n/a	11.1 µg/L
TP trend	Decreasing	Increasing	Decreasing	Decreasing	Decreasing	n/a
Trophic status	Mesotrophic	Mesotrophic	Mesotrophic	Mesotrophic	Mesotrophic	Mesotrophic
Clarity	2.3 m	1.5 m	2.0 m	2.2 m	3.3 m	1.4 m

Note: Clarity is reported as an average. TP is reported as an average for sites with three to five years of data. Trends are reported for sites with more than five years of data. Trophic status is described in terms of three broad categories – oligotrophic, mesotrophic, and eutrophic. TP concentrations between 10-20 µg/L indicate a mesotrophic or moderately enriched environment.

Benthic monitoring was initiated in 2020 in four locations throughout the lake following the Ontario Benthos Biomonitoring Network protocol. Benthic macroinvertebrates, or benthos, are small aquatic organisms (e.g., insects, crustaceans, worms) that spend all or part of their lifecycle living at the bottom of the lake. Some benthos can only be found in waterbodies with very good water quality, while others can tolerate poor water quality (Figure 2).

Benthic monitoring is a type of biological monitoring that uses an “effect-based approach” to provide information about how an ecosystem has responded to a stress. This complements water chemistry monitoring (e.g., TP, pH, dissolved oxygen) which looks at water quality from a “stressor-based approach”, providing information about an ecosystem’s exposure to stress. Together these approaches offer a more complete picture of aquatic ecosystem health (i.e., the lake’s exposure to stress and associated ecological response).

Benthic monitoring results for all four sites on Lake Manitouwabing were analyzed, given that there are now three years of data collected. Currently all four sites are considered ‘typical’

when compared to other lakes in the region. This means that the benthic community in the lake is typical for what we would expect to find in this region.

Highly pollution tolerant - most likely to be found in poor, fair, and good quality water



Chironomidae (Midge Larva)



Hirundinea (Leech)

Semi-pollution tolerant - most likely to be found in fair and good quality water



Anisoptera (Dragonfly Larva)



Amphipoda (Scud)

Pollution sensitive - most likely to be found in good quality water



Ephemeroptera (Mayfly Larva)



Trichoptera (Caddisfly Larva)

Figure 2. Benthic macroinvertebrates found in Manitouwabing Lake and their pollution sensitivities.

A thorough review of existing water quality data for Manitouwabing Lake was conducted by aquatic scientist Bev Clark and published in 2018. The report indicates that TP concentrations throughout the lake are very similar among monitoring sites and between years. There is no clear evidence of increasing TP concentrations over time. The lake is at the lower end of the mesotrophic range (10-20 $\mu\text{g/L}$), meaning that it will share characteristics more like

oligotrophic lakes. In addition, the lake is highly influenced by its watershed. This means that water in the lake will have water quality characteristics similar to the water coming in from the various sources, such as Manitouwabing River.

Fish Communities

Manitouwabing Lake is home to a variety of fish species. Table 2 provides a high-level overview of the fish communities in the lake.

Table 2. Summary of Manitouwabing Lake fish communities and their management (see [link](#))

Major fish species	Largemouth bass (introduced), smallmouth bass (introduced), walleye (introduced), black crappie (introduced), northern pike (introduced)
Other fish species	Lake whitefish, creek chub, brown bullhead, yellow perch, bluntnose minnow, eastern blacknose dace, cisco, pumpkinseed, rock bass, common carp, white sucker
Lake trout management	Not designated
Current stocking	None
Historic stocking	Walleye (1938, 1950-2010), smallmouth bass (1941, 1950-1966)
Contaminants (species tested)	Northern pike, walleye, black crappie

The most recent surveys conducted on Manitouwabing Lake were part of a Nearshore Community Index Netting (NSCIN) project undertaken in 2014 and 2015. Findings from the project suggest that the fish community of Manitouwabing Lake has changed significantly since the next most recent survey in 2004 (Figure 3). Since 2004, black crappie were illegally introduced to the lake and have become a major component of the fish community. Brown bullhead declined in abundance from the peak seen in 2004. Largemouth bass catch rates have increased steadily over the successive surveys although they still comprise a small portion of the catch. Catch rates of the other species did not display any major changes. Based on the 2014-2015 NSCIN project, further walleye stocking is not advised and the lake should instead be managed as a natural walleye lake.

Fish consumption advisories for Manitouwabing Lake are determined by the Ministry of Environment, Conservation and Parks. Fish are exposed to, and absorb, contaminants in the water in a variety of ways (e.g., consuming contaminated food) and pass those contaminants on to humans when consumed. In Manitouwabing Lake, mercury is the contaminant of concern. Table 3 summarizes the Manitouwabing Lake fish consumption advisories.

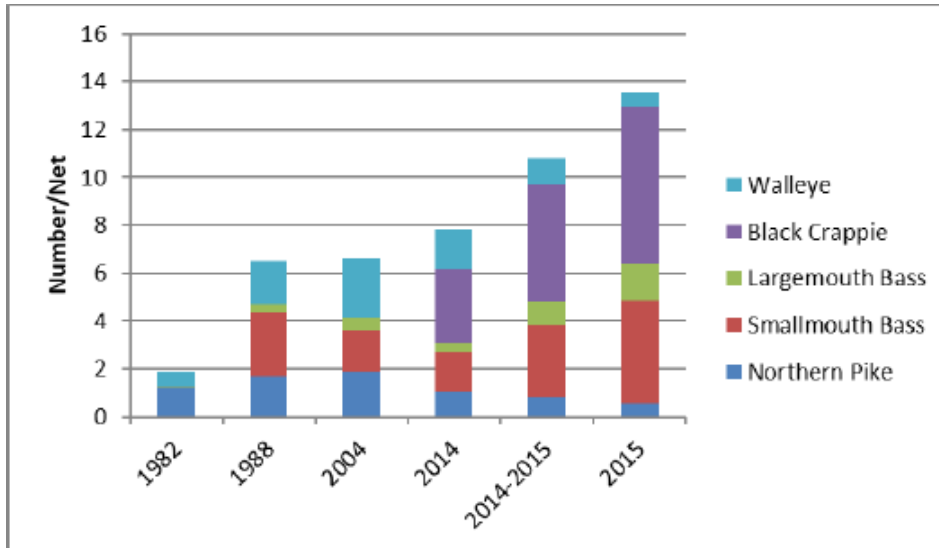


Figure 3. Catch rate (number/net) of major game fish species from 6' trap nets in Manitouwabing Lake, by year (Scholten, 2020).

Table 3. Fish consumption advisories for Manitouwabing Lake (see [link](#)).

Species	General Population	Sensitive Population*
Black crappie ¹	<ul style="list-style-type: none"> max 32 meals/month of fish 20-25cm max 12 meals/month of fish 25-30cm 	<ul style="list-style-type: none"> max 12 meals/month of fish 20-25cm max 4 meals/month of fish 25-30cm
Northern pike ¹	<ul style="list-style-type: none"> max 16 meals/month of fish 30-35cm max 16 meals/month of fish 35-40cm max 16 meals/month of fish 40-45cm max 12 meals/month of fish 45-50cm max 8 meals/month of fish 50-55cm max 8 meals/month of fish 55-60cm max 8 meals/month of fish 60-65cm max 4 meals/month of fish 65-70cm max 4 meals/month of fish 70-75cm max 4 meals/month of fish >75cm 	<ul style="list-style-type: none"> max 8 meals/month of fish 30-35cm max 8 meals/month of fish 35-40cm max 4 meals/month of fish 40-45cm max 4 meals/month of fish 45-50cm max 4 meals/month of fish 50-55cm max 4 meals/month of fish 55-60cm no meals of fish 60-65cm no meals of fish 65-70cm no meals of fish 70-75cm no meals of fish >75cm
Walleye ¹	<ul style="list-style-type: none"> max 8 meals/month of fish 25-30cm max 8 meals/month of fish 30-35cm max 4 meals/month of fish 35-40cm max 4 meals/month of fish 40-45cm max 4 meals/month of fish 45-50cm max 2 meals/month of fish 50-55cm max 2 meals/month of fish 55-60cm max 2 meals/month of fish 60-65cm max 0 meals/month of fish 65-70cm 	<ul style="list-style-type: none"> max 4 meals/month of fish 25-30cm no meals of fish 30-35cm no meals of fish 35-40cm no meals of fish 40-45cm no meals of fish 45-50cm no meals of fish 50-55cm no meals of fish 55-60cm no meals of fish 60-65cm no meals of fish 65-70cm

* Women of child-bearing age and children under 15; ¹ Mercury

Recommendations

Based on results from LPP sampling, benthic monitoring, Clark's (2018) water quality report, and the most recent fish community survey, several recommendations are made in this report.

Water Quality

1. Continue LPP sampling at several sites. Preference should be given to sites that are spread throughout the lake and that have the longest datasets. Suggested sites are Station 2973, Site IDs 8, 9, 13, and 18.
2. Continue with annual benthic monitoring. With lakes in the region facing many threats (e.g., climate change, biodiversity loss, development, pollution), benthic communities act as a barometer of ecological change and impacts. Continuing to monitor the benthic community in Manitouwabing Lake will allow for trends to be tracked over time and the observation of any notable shifts (statistically significant changes) that would be cause for further investigation and potentially require remedial actions.
3. Conduct late summer monitoring of dissolved oxygen in the deepest location and in isolated bays where depths are greater than 7-8 m (see map on page 11 of Clark (2018) report).
4. Focus bacteria monitoring on beaches as per the province's Beach Management Guidance Document.
5. Should the MLCA wish to continue with bacteria monitoring elsewhere, it should happen in the framework of a scientific investigation focused on testing specific hypotheses on potential sources of contamination through a focused sampling program.
6. Start keeping long-term records of water temperature.

Fish Communities

1. Anglers should familiarize themselves with the [new regulations](#) for the sale and possession of live bait in Ontario. Highlights include:
 - A valid fishing license is required to catch your own live baitfish, leeches, crayfish, and northern leopard frogs.
 - There are specific fish species that can and cannot be used as bait in Ontario.
 - Bait can only be caught in your home Bait Management Zone (BMZ) and cannot leave your BMZ.
 - Baitfish and leeches you catch cannot be sold unless you are a licensed dealer.

- If you fish outside your home BMZ, you must buy your baitfish and leeches locally, keep a receipt, and use or dispose of your bait within two weeks of the purchase date.
2. Anglers should use the app [MyCatch](#) by Angler's Atlas to log fishing trips and share fishing data confidentially with biologists.

Stewardship Activities

1. Encourage Manitouwabing Lake property owners to maintain and/or restore natural shorelines. GBB's [Life on the Bay Stewardship Guide](#) and [Planting for Pollinators](#) guide are helpful resources for property owners interested in native plants and naturalization. Native plants can be sourced from the MLCA [Native Plant Seedling Sale](#) and the annual GBB Native Plant Fundraiser (check the GBB [events page](#) in the spring).
2. Property owners interested in minimizing their ecological footprint can utilize GBB's [Life on the Bay Stewardship Guide](#).
3. There are many [citizen science programs](#) for interested cottagers and residents to get involved in (e.g., invasive species reporting, IceWatch, FrogWatch, Canadian Lakes Loon Survey).

INTRODUCTION

Manitouwabing Lake is situated within the Williams Treaty of 1923 and the Robinson-Huron Treaty of 1850 (Ministry of Indigenous Affairs, 2022) in the traditional territory of Wasauksing First Nation and Shawanaga First Nation (Figure 4).

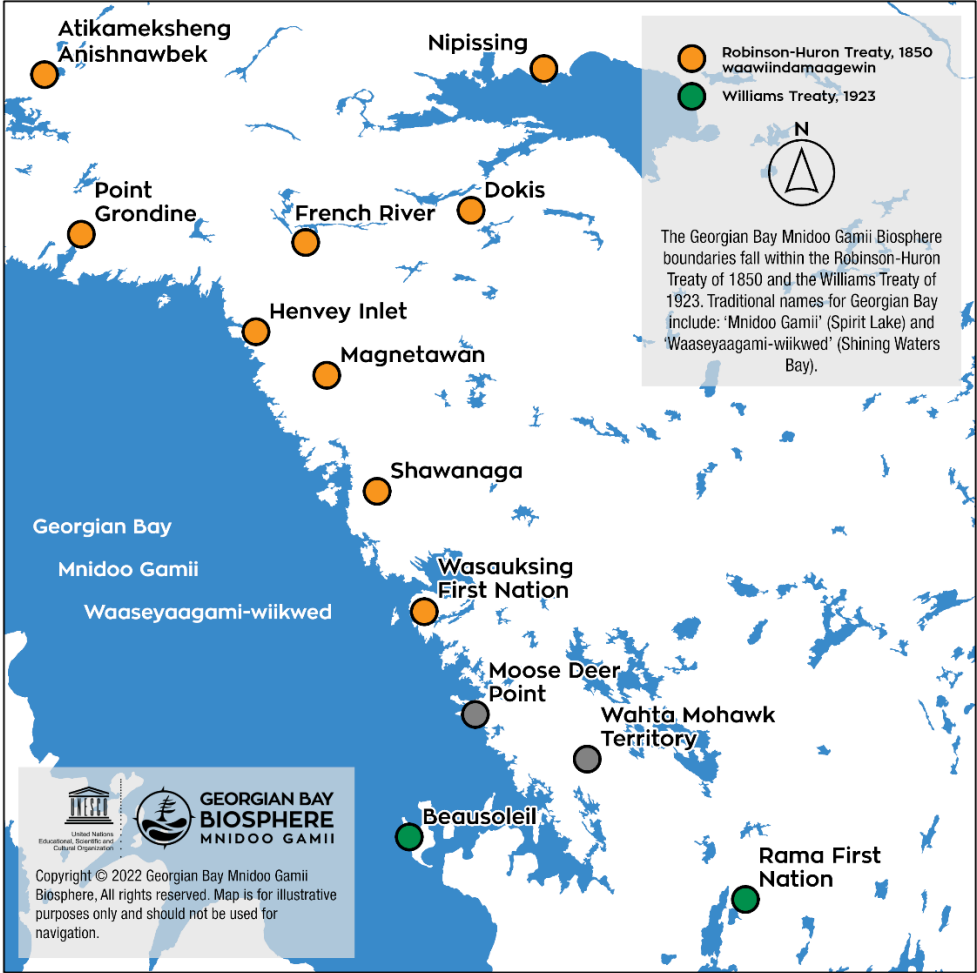


Figure 4. Signatories to the Robinson-Huron Treaty of 1850 and Williams Treaty of 1923.

Manitouwabing Lake is located almost entirely within the geographic and municipal township of McKellar (Figure 5). It is one of the largest lakes in the Parry Sound area, measuring roughly 1,200 hectares in size (Scholten, 2020). The lake collects water from a fairly large watershed through numerous inflows including the Manitouwabing River, and outflows at the south end of the lake (Clark, 2018). Lake water level is regulated by a dam located on the outflow at Hurdville which has raised the water by approximately 2.5 m from its natural level (Scholten, 2020). The dam is owned and operated by Parry Sound Generation Corporation for the purpose of hydroelectric power generation downstream at Parry Sound (McIntyre, 2005).

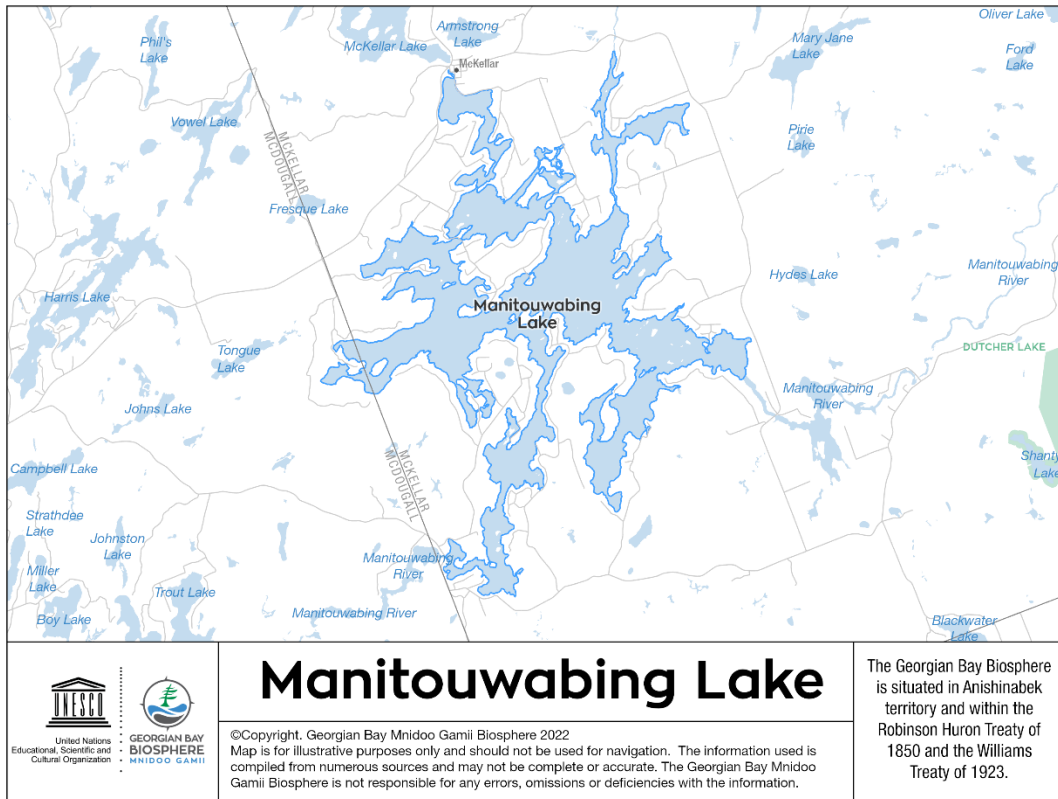


Figure 5. Manitowabing Lake and surrounding area of McKellar.

The lake has a maximum depth of 33.6 m (110 ft), a mean depth of 5.6 m (18.4 ft) (McIntyre, 2005), and a flushing rate of 2.8 times per year (Clark, 2018). A diverse cool/warm water fish community is supported by the lake, dominated by northern pike, smallmouth and largemouth bass, black crappie, and walleye (Scholten, 2020).

Manitouwabing Lake is the site of six resorts and over 1,000 private residences (MLCA, 2019). Public access to the lake is possible from several boat launches as well as public docks.

WATER QUALITY

Overview

Volunteers on Manitowabing Lake participate in the Lake Partner Program (LPP) run by the Ministry of Environment, Conservation and Parks (MECP). Additionally, benthic monitoring is conducted by GBB at four sites on the lake as of 2020 (Figure 6). All past and present LPP data for Manitowabing Lake can be found in Appendix A.

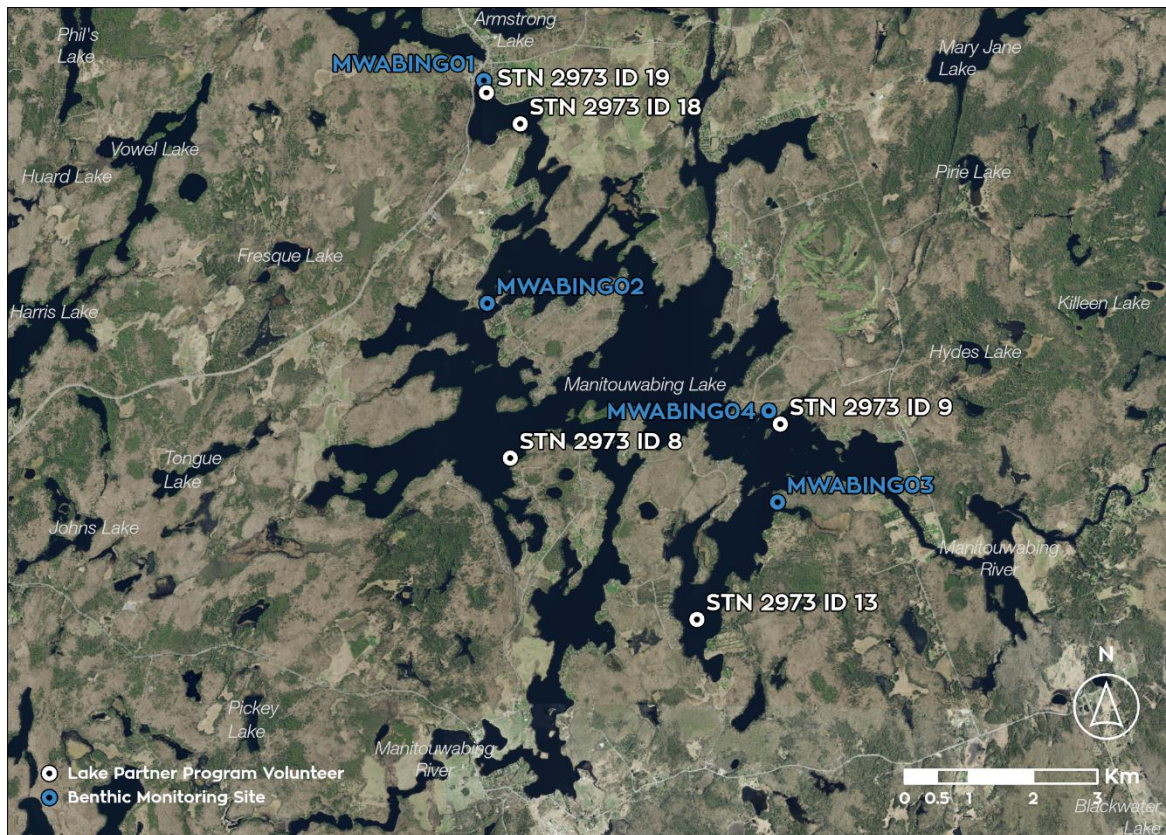


Figure 6. Active and recently active monitoring sites on Manitowabing Lake.

Lake Partner Program

The LPP is an Ontario-wide, publicly funded, free program that collects data about phosphorus, water clarity, calcium, and chloride from volunteers. The simple tests for total phosphorus (TP) and water clarity provide a strong basis for assessing the health of the ecosystem, and whether TP is too high or too low.

Monitoring TP is very important as phosphorus is the nutrient that controls plant growth (including algae) in lakes. Measuring TP year after year is necessary to detect long-term changes in water quality that may be due to impacts of shoreline development, climate change, and other stressors. Inland lakes require TP data to help assess background concentrations relative to present day concentrations. Data collected by volunteers are analyzed by the Dorset Environmental Science Centre (DESC) which makes all data [available online](#).

Methods

As a general rule, only one representative sampling location is required for each lake even in large convoluted lakes with multiple arms. In the event that there are compelling reasons to believe that water quality in different areas of the lake would be influenced differently by rivers or development for example, or there are local observed differences or perceived problems, more sites might be recommended. Generally speaking, if the watershed influences are similar across a lake, the water quality will be similar as well.

Spring total phosphorus sampling (following [LPP protocols](#)) is sufficient for most locations in the region, as there are few areas that experience fall algal blooms. Additionally, Secchi disc water clarity measurements are taken each month at the same location as the TP samples. The black-and-white Secchi disc is lowered into the water until it is at the absolute limit of being visible. This depth is the Secchi depth of visibility, which is directly related to water clarity and can be used as a simple and effective monitoring tool for determining the effects of human activities on water clarity and, indirectly, on the nutrient content in the water.

The materials needed to take the water samples and conduct water clarity measurements are sent to volunteers by the province. Instructions are included in this package, additionally, training videos are available online. Samples are returned (postage paid) to DESC for analysis and Secchi observation sheets are mailed to DESC in November.

Interpreting Results

Water Clarity

In general, water clarity, as measured by Secchi depth, tends to be higher in large bodies of water like the open areas of Georgian Bay and in bays with good water circulation. Water clarity tends to diminish (smaller Secchi depth values) in enclosed bays, near wetlands or

sources of organic material, and in lakes or areas that have higher nutrient levels either from natural or anthropogenic sources.

Secchi depth values should be compared over several years to assess whether there are water clarity trends for a particular area. Where more than one year of water clarity data exists for a sampling location, Secchi depth in metres is graphed and an average depth is given.

Calcium

Calcium is a nutrient that is required by all living organisms. Some organisms, including those that make up the lower food web, use calcium in the water to form their calcium-rich body coverings. The lower food web forms the foundation of a healthy food web. Prey fish and juvenile predatory fish (piscivores) rely on the lower food web as a main source of food for growth, and predators depend on plentiful prey for their growth – if the lower food web is in poor condition, in time higher levels of the food web will respond and reflect that condition. These organisms of the lower food web, like Daphnia, mollusks, clams, amphipods, and crayfish, are very sensitive to declining calcium levels.

Calcium concentrations have been shown to be decreasing in Canadian Shield lakes in response to depleted watershed stores of calcium caused by logging and decades of acid loading associated with acid rain. Combined with lower food availability and warmer temperatures predicted as part of a changing climate, this decrease represents an important stressor for many aquatic species.

Calcium concentrations should be considered over the long term to identify trends.

Total Phosphorus

As phosphorus is the nutrient that controls the growth of plants (e.g., algae) in the aquatic environment, TP concentrations are used to interpret nutrient status. The nutrient status of an aquatic environment is typically described in terms of three broad categories – oligotrophic, mesotrophic, and eutrophic (Figure 7). TP concentrations below 10 µg/L indicate an oligotrophic or unproductive environment. Aquatic environments with TP concentrations ranging between 10 and 20 µg/L are termed mesotrophic and are moderately enriched. Finally, TP concentrations over 20 µg/L indicate a eutrophic aquatic environment in which persistent, nuisance algal blooms are possible.

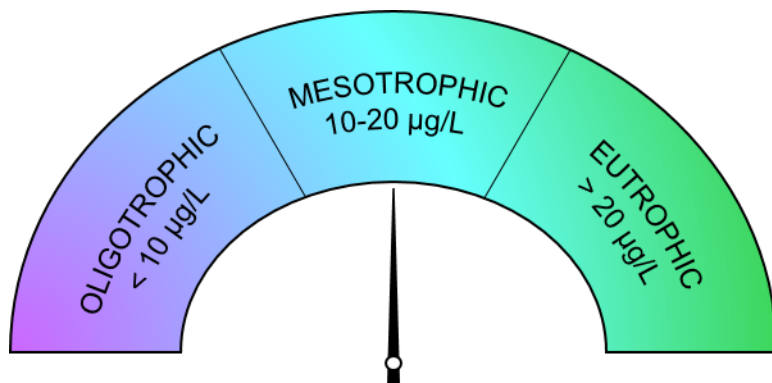


Figure 7. A lake's trophic status is determined by its total phosphorus concentration. Oligotrophic lakes have TP levels less than 10 µg/L; mesotrophic lakes have TP concentrations ranging between 10 and 20 µg/L; and eutrophic lakes have TP concentrations over 20 µg/L.

The Interim Provincial Water Quality Objective (PWQO) for TP in lakes is 20 µg/L. This measure is intended to serve as a warning for, and to prevent, conditions that could result in the nuisance growth of algae. Results in this report are used to characterize trophic condition and assess TP trends (e.g., upward, downward). When interpreting data, the MECP cautions that although only three years of data are required to establish a reliable, long-term average to measure current nutrient status, a longer data set is required to examine trends. Some aquatic environments exhibit relatively large differences in TP between years, highlighting the need for long-term data collection to distinguish between natural variation and true anomalies.

Average TP is calculated for sampling locations with between three and five years of data, as well as, locations with five or more years of data for which there is no apparent trend. For sampling locations with five or more years of TP data and for which there is an apparent trend, a trend line is shown on the TP graph and average is not calculated. Visible outliers are removed for the purpose of determining whether a trend exists.

The LPP database (available [here](#)) contains TP data from over one thousand sampling locations across Ontario. Readers may find the database useful in understanding how Manitouwabing Lake TP concentrations compare to other waterbodies across the province.

Results

All recent sites sampled on Manitouwabing Lake through the LPP have TP concentrations indicating mesotrophic conditions. This means the lake is moderately enriched with TP concentrations ranging from 10 to 20 µg/L.

Station 2973, Site ID 8	
• Description: West of Maplewood	• Average TP: n/a
• Data collector: LPP volunteer	• Trend: decreasing
• Trophic status: mesotrophic	• Average Secchi depth: 2.3 m
• Years sampled: 2002 – 2019, 2021 – 2022	• Visible outliers: TP of 90 µg/L in 2022

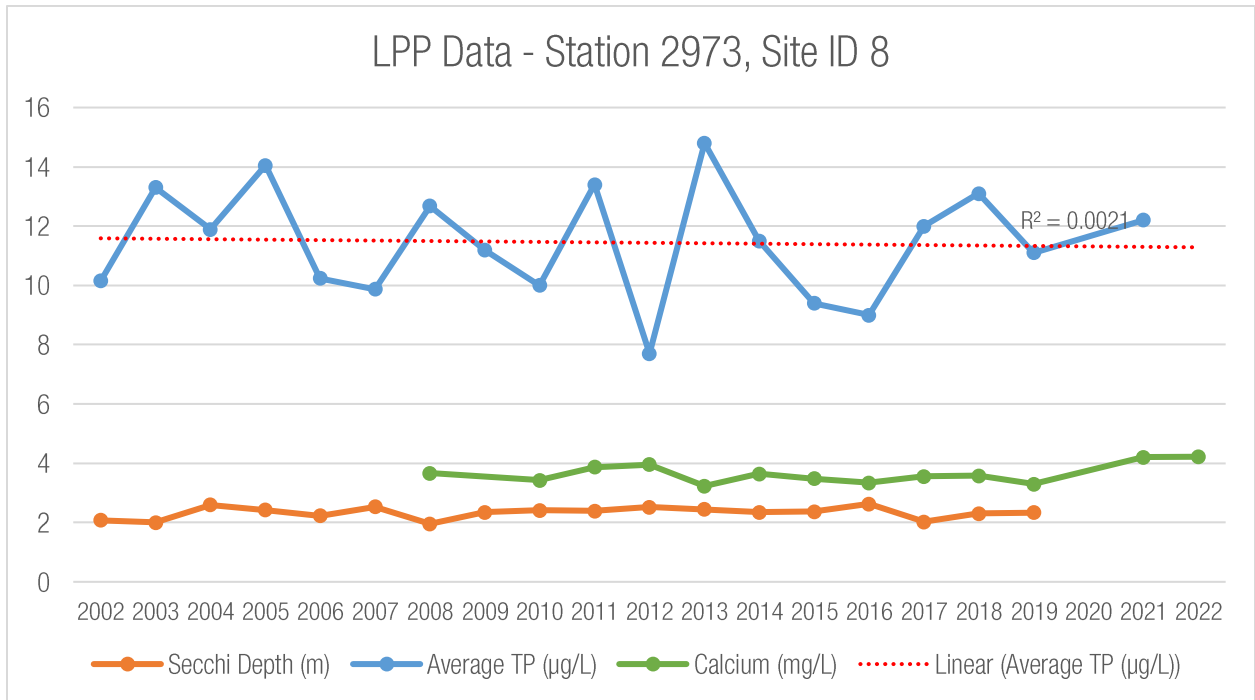


Figure 8. Lake Partner Program data for water clarity, calcium, and total phosphorus at Station 2973, Site 8.

Station 2973, Site ID 9	
• Description: E of Longhorn, Hardle's Cr	• Average TP: n/a
• Data collector: LPP volunteer	• Trend: increasing
• Trophic status: mesotrophic	• Average Secchi depth: 1.5 m
• Years sampled: 2007, 2008, 2016 – 2019	• Visible outliers: none

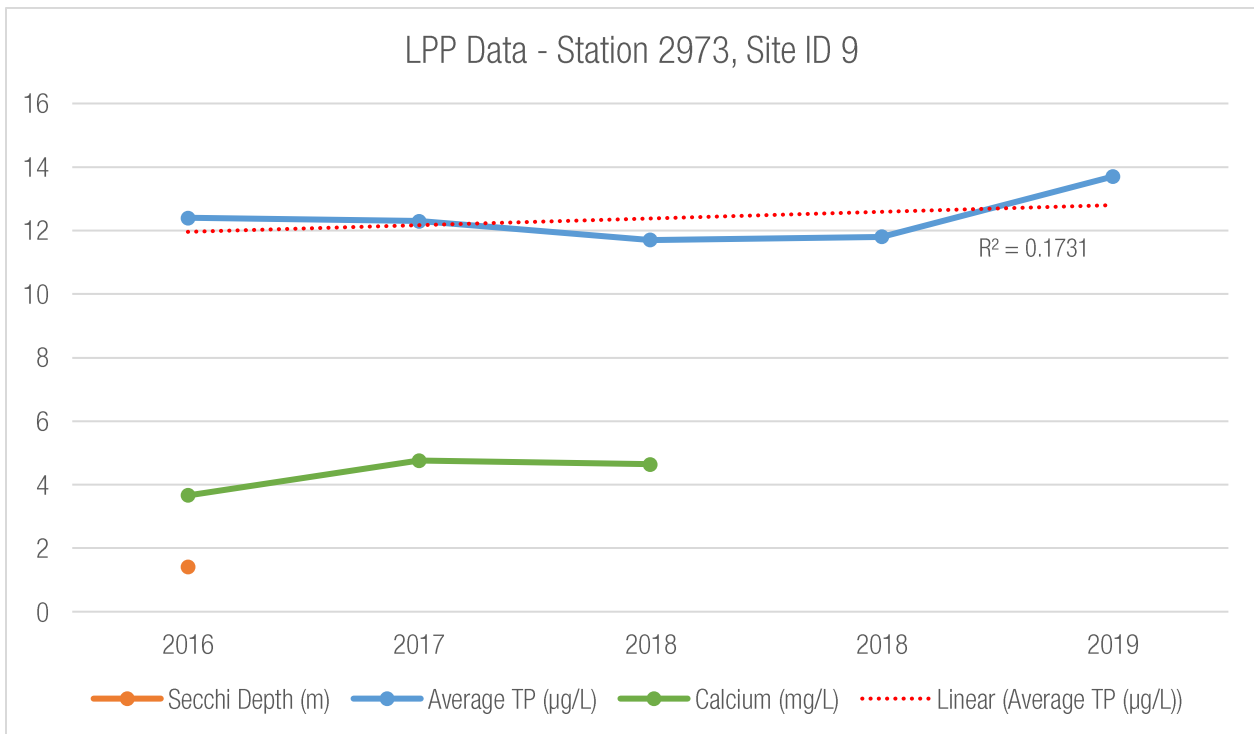


Figure 9. Lake Partner Program data for water clarity, calcium, and total phosphorus at Station 2973, Site 9. Note: two TP data points are given in the LPP database for 2018.

Station 2973, Site ID 13	
• Description: Jones Bay	• Average TP: n/a
• Data collector: LPP volunteer	• Trend: decreasing
• Trophic status: mesotrophic	• Average Secchi depth: 2.0 m
• Years sampled: 2006 – 2009, 2011 – 2017, 2020 – 2022	• Visible outliers: none

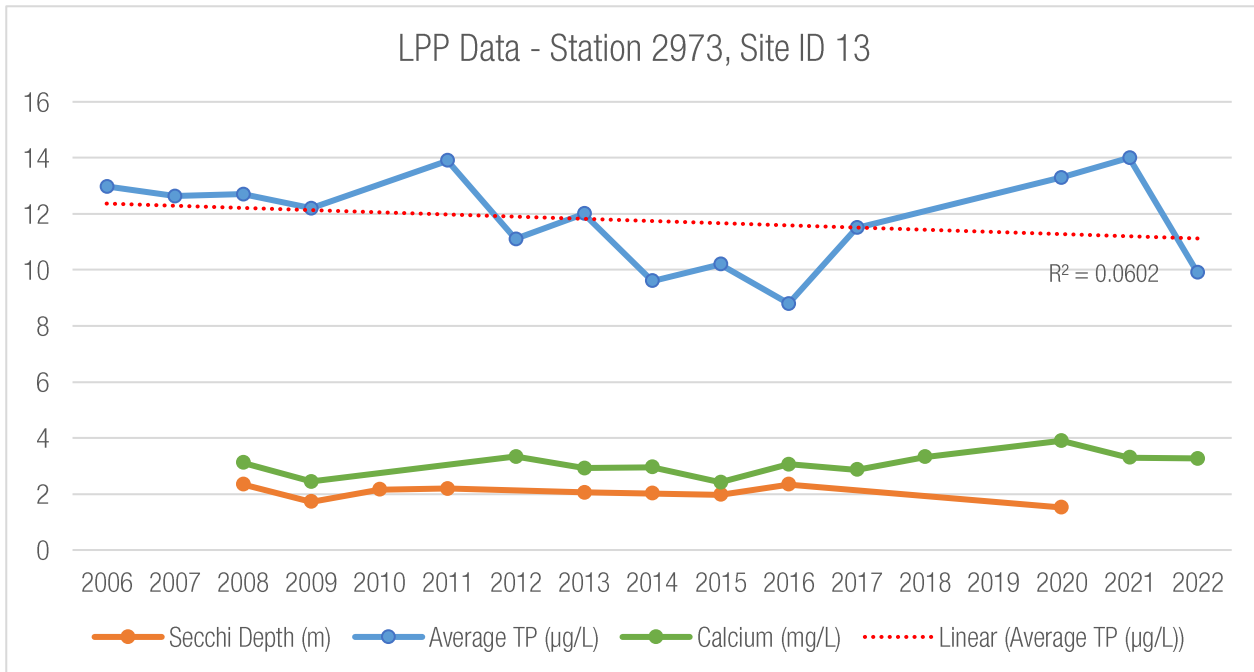


Figure 10. Lake Partner Program data for water clarity, calcium, and total phosphorus at Station 2973, Site 13.

Station 2973, Site ID 18	
• Description: McKellar Bay	• Average TP: n/a
• Data collector: LPP volunteer	• Trend: decreasing
• Trophic status: mesotrophic	• Average Secchi depth: 2.2 m
• Years sampled: 2017 – 2022	• Visible outliers: none

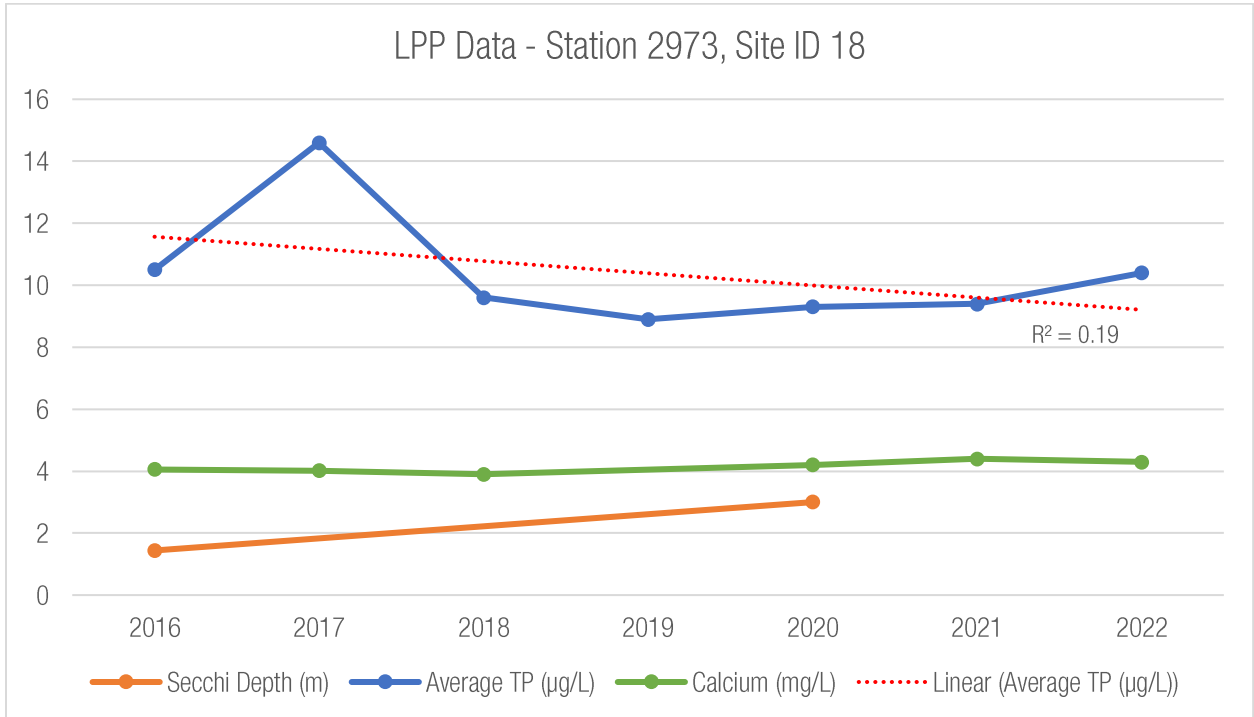


Figure 11. Lake Partner Program data for water clarity, calcium, and total phosphorus at Station 2973, Site 18.

Station 2973, Site ID 19	
• Description: McKellar Bay, near dock	• Average TP: n/a
• Data collector: LPP volunteer	• Trend: decreasing
• Trophic status: mesotrophic	• Average Secchi depth: 3.3 m
• Years sampled: 2017 – 2019, 2021-2022	• Visible outliers: none

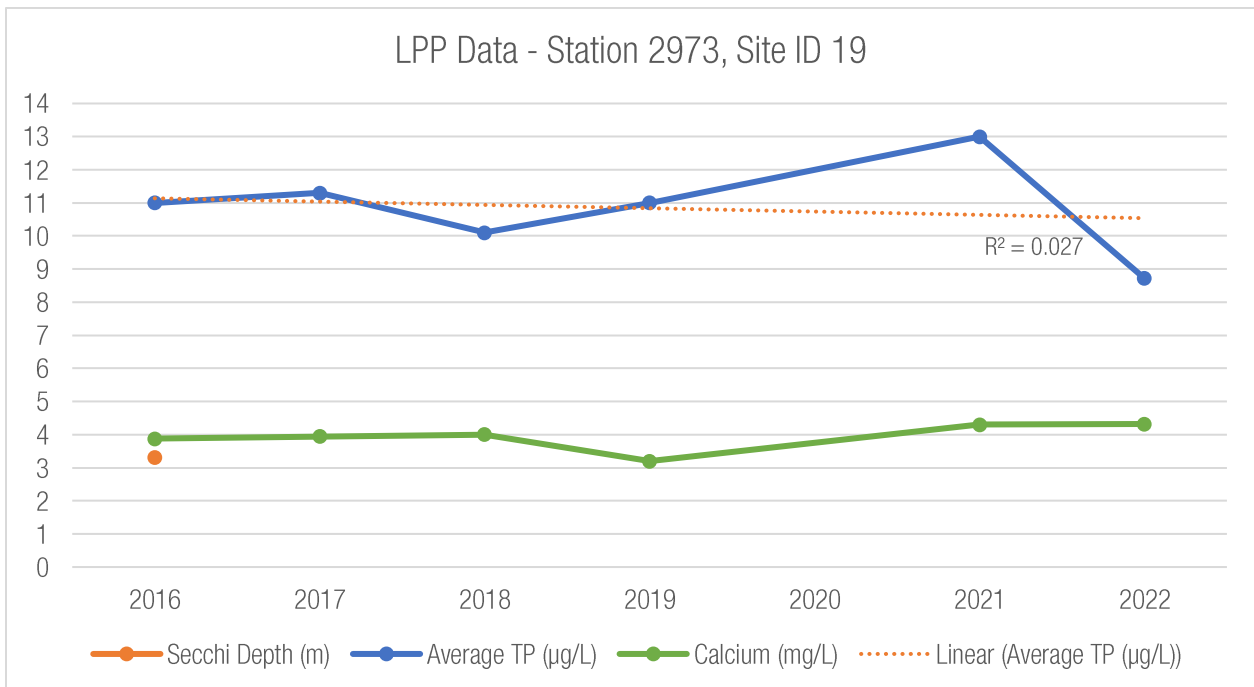


Figure 12. Lake Partner Program data for water clarity, calcium, and total phosphorus at Station 2973, Site 19.

Station 2973, Site ID 23	
• Description: East of Hurdville	• Average TP: 11.1 µg/L
• Data collector: LPP volunteer	• Trend: n/a
• Trophic status: mesotrophic	• Average Secchi depth: 1.4 m
• Years sampled: 2020 – 2022	• Visible outliers: none

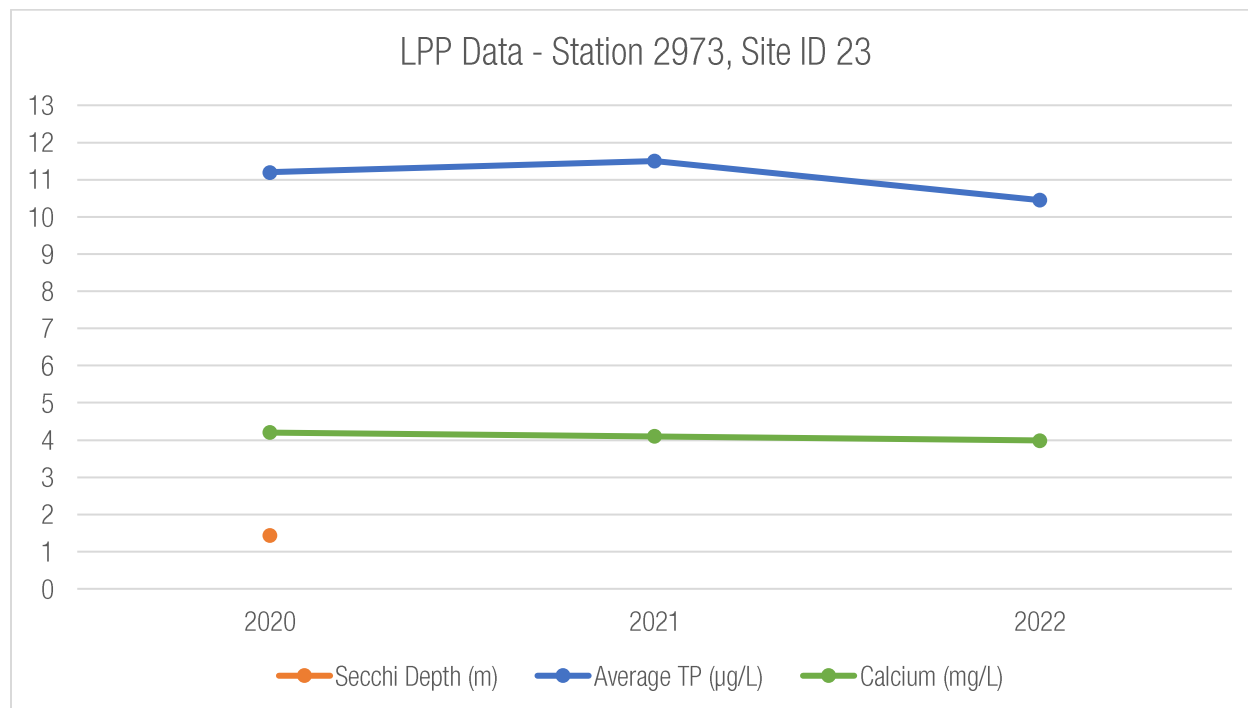


Figure 13. Lake Partner Program data for water clarity, calcium, and total phosphorus at Station 2973, Site 23.

Recommendations

Continue LPP sampling annually. Prioritize locations that have a long, continuous history of sampling or areas with notable water quality concerns. Suggested sites are Station 2973, Site IDs 8, 9, 13, and 18.

Benthic Monitoring

Different types of water quality monitoring provide water managers with complementary information. Most people are familiar with the idea of looking at water quality from a “stressor-based approach”. This includes monitoring water chemistry parameters like pH, dissolved oxygen, total phosphorus, and others. Stressor-based monitoring approaches provide

important information about an ecosystem's exposure to stress, but they leave unanswered questions about the significance (or effect) of that stress.

Biological monitoring uses an “effect-based approach” to provide information about how ecosystems have responded to a stress, for example by looking at fish communities or benthic macroinvertebrates. However, effect-based approaches leave unanswered questions about what stresses are being responded to. Therefore, these approaches (chemical and biological monitoring) are complementary and together provide a complete picture of aquatic ecosystem health (i.e., the lake's exposure to stress and associated ecological response).

For example, volunteers on Manitouwabing Lake monitor phosphorus levels which provide a measure of exposure to stress (e.g., impacts from humans, climate change). These measures could be phosphorus levels going up, going down, or staying the same (as shown by the trend lines on the LPP data charts). But what is the impact from these trends on the ecosystem? By adding benthic monitoring, we can start to see if and how the ecosystem is reacting to a stressor.

Over the last three decades, the use of biological monitoring in Ontario has increased dramatically. Researchers, water managers, and the larger scientific community are recognizing the ability of biological monitoring to reflect the impacts of stressors on aquatic ecosystems including the effects of non-point-source and episodic pollution, habitat changes, and the cumulative effects of multiple stressors. Accordingly, the use of biotic changes to evaluate ecosystem condition and water management performance has grown in relevance and legitimacy – to the point that legal and regulatory frameworks in many countries now require information on biological condition. Ontario's Water Resources Act (R.S.O. 1990, C. 040) and Environmental Protection Act (R.S.O. 1990, C. E19), for example, define impairment and adverse impact in clearly biological terms.

Benthic macroinvertebrates (or benthos) are small aquatic organisms (including insects, crustaceans, worms, and mollusks). The term benthic macroinvertebrate can be broken down to better understand the nature of these organisms. Benthic macroinvertebrates spend all or part of their life cycle living at the bottom of the lake (benthic), they are quite small but can generally still be seen with the naked eye (macro), and they lack a backbone (invertebrate).

These animals are well suited as indicators of water and sediment quality as they spend most or all of their lives (1-3 years) in constant contact with the benthic environment in a specific

area. Furthermore, they are relatively easy and inexpensive to sample, and have varying tolerances to disturbances and pollution.

A healthy lake will support high richness (the number of species) and abundance (the number of individuals). If a lake has low species richness and mainly pollution-tolerant species, the lake could be impaired. Figure 14 highlights common taxa found in lakes throughout the Parry Sound-Muskoka District, including Manitouwabing Lake, and their varying pollution sensitivities.

Highly pollution tolerant - most likely to be found in poor, fair, and good quality water



Chironomidae (Midge Larva)



Hirundinea (Leech)

Semi-pollution tolerant - most likely to be found in fair and good quality water



Anisoptera (Dragonfly Larva)



Amphipoda (Scud)

Pollution sensitive - most likely to be found in good quality water



Ephemeroptera (Mayfly Larva)



Trichoptera (Caddisfly Larva)

Figure 14. Benthic macroinvertebrates found in Manitouwabing Lake and their pollution sensitivities.

It is important to note that an aquatic ecosystem with pollution tolerant species is not necessarily a cause for concern. If pollution sensitive species are also present in the same area, this indicates that the water quality must be good enough for the pollution sensitive species to thrive, along with those that are less sensitive. When an aquatic ecosystem hosts pollution tolerant species with no evidence of pollution sensitive species, this could indicate a need for further investigation into potential water quality issues.

Changes in the benthic community of a lake (e.g., changes in the types of organisms, abundance) can indicate changes in the lake ecosystem (e.g., improvements in water quality, habitat alteration, introduction of invasive species).

Finally, benthic macroinvertebrates are an important part of the food web of a lake. Certain benthic macroinvertebrates are a critical food source for a variety of fish species, while others play a key role in decomposing organic matter.

The objectives of the Manitouwabing Lake benthic monitoring program are to:

- Determine the ecological condition of Manitouwabing Lake and compare it;
- Compare Manitouwabing Lake to similar lakes in the Parry Sound-Muskoka District; and
- Compare sites within Manitouwabing Lake.

Methods

Certified GBB staff oversee benthic macroinvertebrate sampling on behalf of the Township of McKellar and MLCA using the standardized Ontario Benthos Biomonitoring Network (OBBN) protocol for lakes. For each of the four sites, three shallow, nearshore areas representative of the lake are selected as test sites (referred to as “lake segments” in the protocol) and sampled each year using the travelling kick-and-sweep method. The individual doing the sampling disturbs the bottom of the lake in transects from 1m depth to the water’s edge for approximately 10 minutes. Using a net, the dislodged material is collected and placed in a bucket. These samples are then processed to count and identify the different types of benthos in the sample (video available [here](#)). There are 27 different groups of benthos that are searched for, ranging in sensitivity to water pollutants and water quality.

Interpreting Results

Manitouwabing Lake has had benthic macroinvertebrate sampling conducted each year since 2020. The objective of the benthic monitoring is to characterize the average benthic

community of the lake and compare it to lakes in the Parry Sound-Muskoka District to determine whether the benthic community in Manitouwabing Lake is considered typical of what would be expected for a lake in this region.

The District Municipality of Muskoka has been working with lake associations to conduct benthic monitoring throughout the district since 2004. This rich Muskoka dataset, combined with additional benthic data for lakes in south-central Ontario from the Dorset Environmental Science Centre and from Jones et al. (2007), provides the basis needed for regional comparisons among lakes.

As detailed in the [2018 Muskoka Watershed Report Card Background Report](#), the Muskoka Watershed Council (MWC) reports on lake benthic communities in terms of the percentage of pollution-sensitive taxa found. Specifically, the pollution-sensitive taxa include larval mayflies (*Ephemeroptera*), dragonflies and damselflies (*Odonata*), and caddisflies (*Trichoptera*), collectively referred to as EOT. These taxa are very sensitive to pollution and habitat alterations, meaning that their numbers will be highest in healthy lakes and lowest in unhealthy or disturbed lakes. The average %EOT for a lake is compared to the normal range for %EOT in lakes in the region. In other words, this monitoring seeks to answer the question, does the %EOT for the lake of interest fall within the normal range of what would be expected for a lake in the region?

The normal range for %EOT in lakes in the region was determined by MWC for the Muskoka Watershed Report Card by “randomly selecting one data point from each lake sampled between 2012 and 2017 and characterizing the distribution of values observed among these lakes” (MWC, 2018, p. 46). The resulting range of %EOT values is shown in Figure 15 and is used for analysis in this report.

Following the methodology used by MWC (2018), the average %EOT was calculated for each of the four sites on Manitouwabing Lake using data collected between 2020 and 2023. The average %EOT for each lake was then compared to the normal range (Figure 15) to determine whether the lake is considered typical, atypical, or extremely atypical. These categories are defined by MWC (2018) as follows:

- **Typical:** %EOT is between the 10th and 90th percentile. These lakes resemble the majority of lakes in the region, and therefore are comprised of typical percentages of EOT species.

- **Atypical:** %EOT is between either the 5th and 10th percentile or the 90th and 95th percentile. These lakes are outside of the normal range of the majority of lakes in the region. The percentages of EOT species may be slightly higher or lower compared to the majority of lakes in the region.
- **Extremely Atypical:** %EOT is less than the 5th percentile or greater than the 95th percentile. These lakes do not represent the majority of lakes in the region in terms of the percentages of EOT species. These lakes may have very high or very low percentages of EOT species compared to the majority of lakes in the region.

If a lake is considered atypical or extremely atypical, additional monitoring may be necessary to determine a cause.

Typical Range of EOT values, 113 Random Lakes

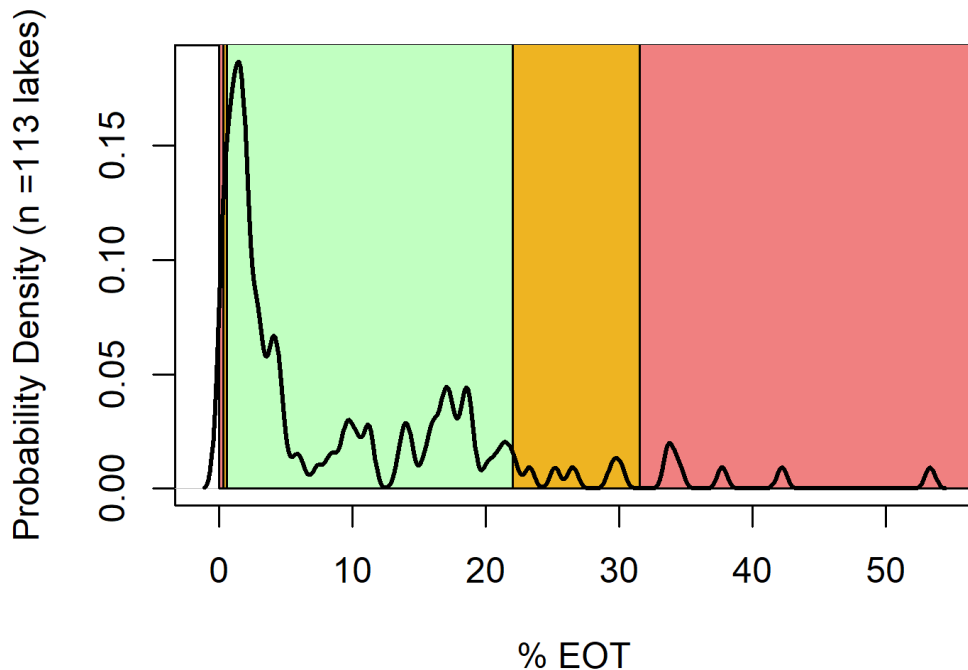


Figure 15. Range of %EOT values of sampled lakes in the region from 2012 to 2017. Typical is shown in green which is between the 10th and 90th percentile (%EOT between 0.55 and 20.99). Atypical is shown in orange which is between the 5th and 10th percentile (%EOT between 0.3 and 0.54) and 90th and 95th percentile (%EOT between 22.1 and 28.01). Extremely atypical is shown in red which is less than the 5th percentile (%EOT less than 0.29) or greater than the 95th percentile (%EOT greater than 31.5).

Results

Four sites (three lake segments each) were sampled in Manitouwabing Lake from 2020-2023 (Figure 16). Average %EOT results are presented below, annual %EOT and taxa results are available in Appendix B.

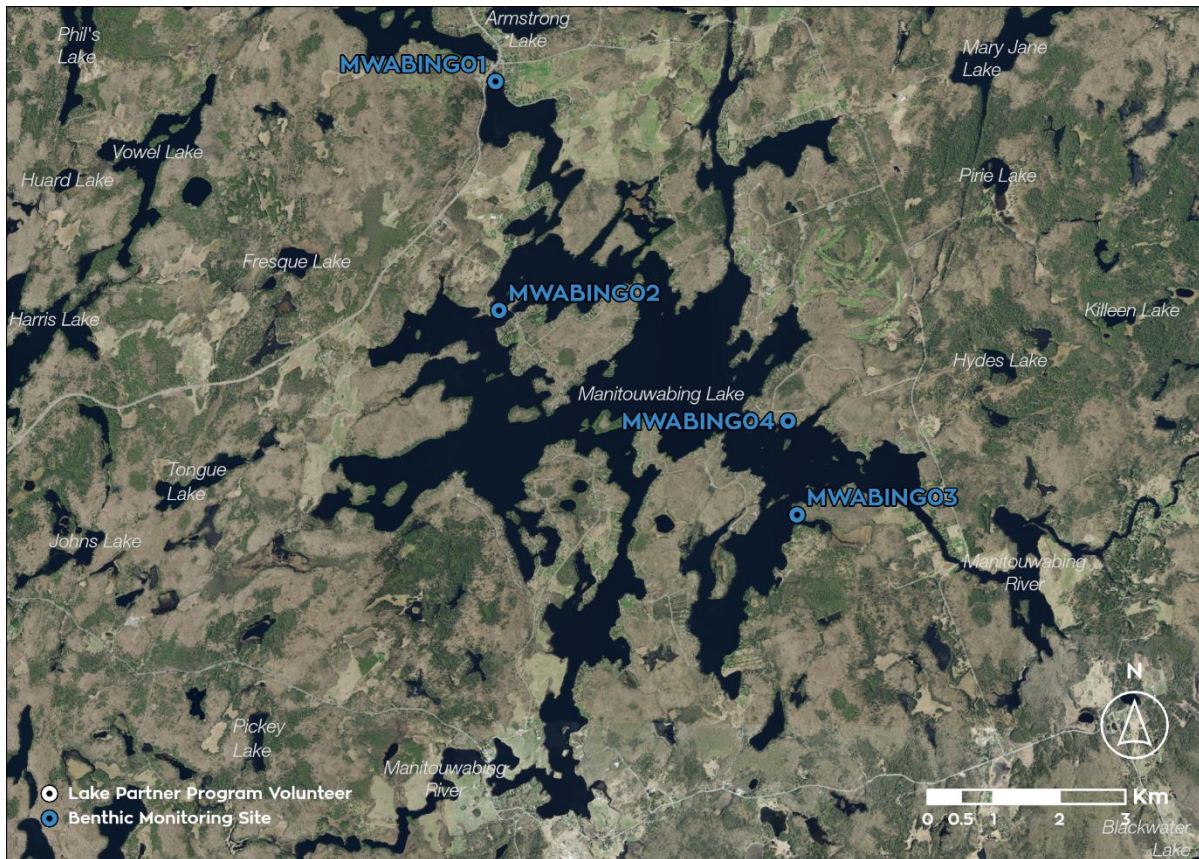


Figure 16. Benthic sampling locations on Manitouwabing Lake.

Site 1 – Manitowabing Lake

As shown in Figure 17, the %EOT for site 1 on Manitowabing Lake falls within the normal range of what is expected for lakes in the region.

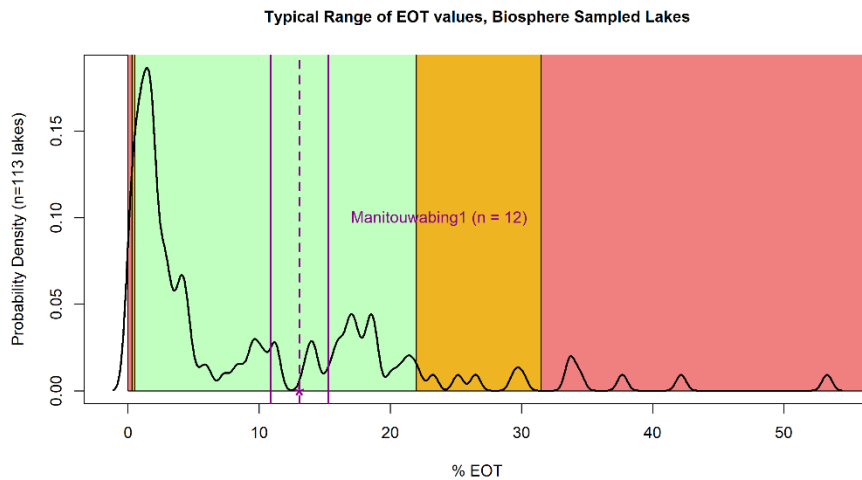


Figure 17. Manitowabing Lake site 1 average %EOT (dashed purple line) and standard deviation (solid purple line) sampled from 3 lake segments over 4 years (n=12) fall within the "typical" category (green area) on the typical %EOT range plot (based on 113 sampled lakes). This indicates that the benthic community for site 1 is typical of what would be expected for a lake in this region.

Site 2 – Manitowabing Lake

As shown in Figure 18, the %EOT for site 2 on Manitowabing Lake falls within the normal range of what is expected for lakes in the region.

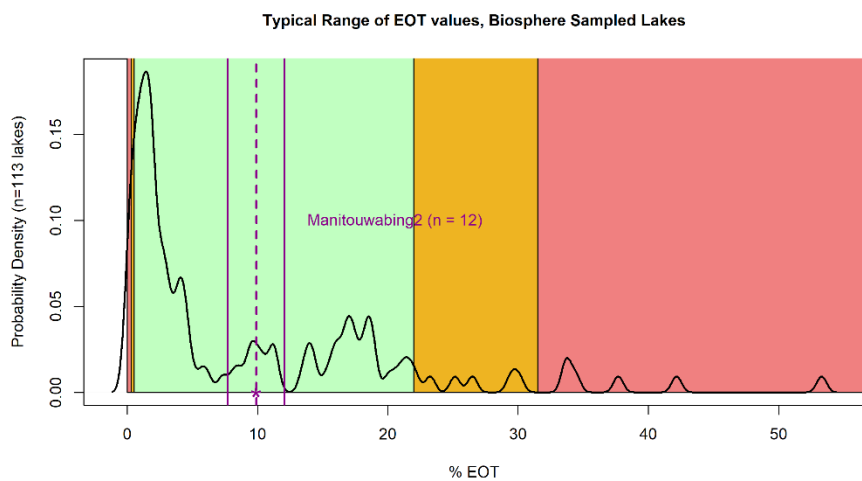


Figure 18. Manitowabing Lake site 2 average %EOT (dashed purple line) and standard deviation (solid purple line) sampled from 3 lake segments over 4 years (n=12) fall within the "typical" category (green area) on the typical %EOT range plot (based on 113 sampled lakes). This indicates that the benthic community for site 2 is typical of what would be expected for a lake in this region.

Site 3 – Manitowabing Lake

As shown in Figure 19, the %EOT for site 3 on Manitowabing Lake falls within the normal range of what is expected for lakes in the region.

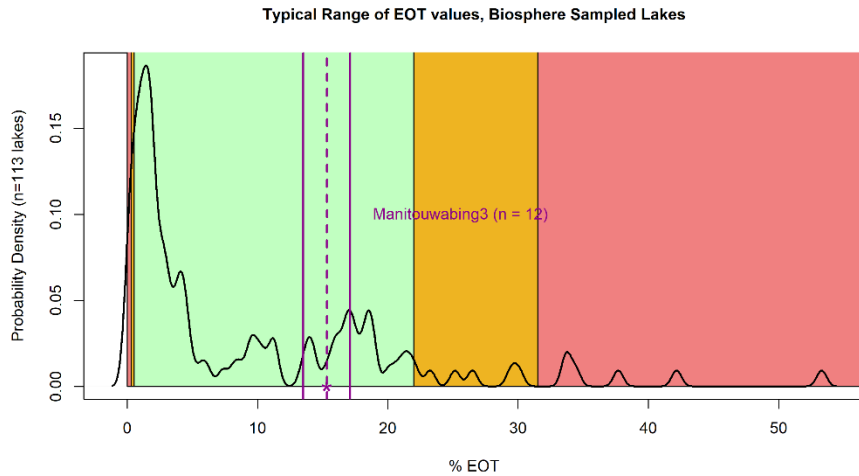


Figure 19. Manitowabing Lake site 3 average %EOT (dashed purple line) and standard deviation (solid purple line) sampled from 3 lake segments over 4 years (n=12) fall within the "typical" category (green area) on the typical %EOT range plot (based on 113 sampled lakes). This indicates that the benthic community for site 3 is typical of what would be expected for a lake in this region.

Site 4 – Manitowabing Lake

As shown in Figure 20, the %EOT for site 4 on Manitowabing Lake falls within the normal range of what is expected for lakes in the region.

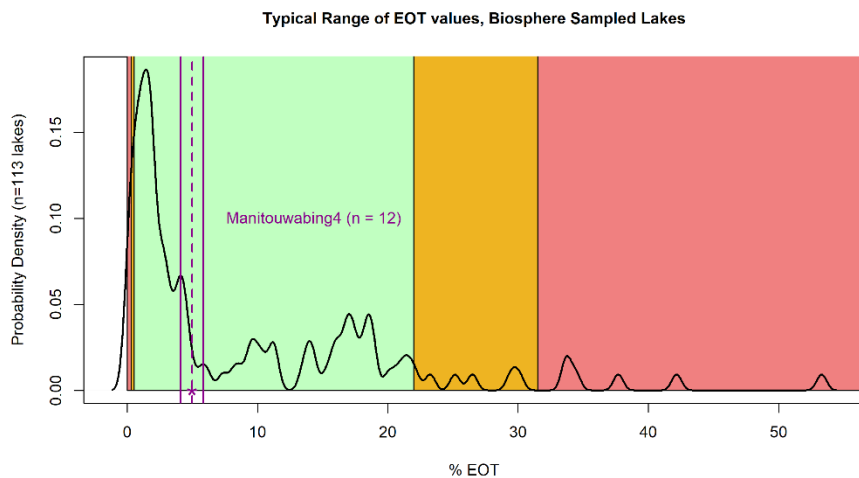


Figure 20. Manitowabing Lake site 4 average %EOT (dashed purple line) and standard deviation (solid purple line) sampled from 3 lake segments over 4 years (n=4) fall within the "typical" category (green area) on the typical %EOT range plot (based on 113 sampled lakes). This indicates that the benthic community for site 4 is typical of what would be expected for a lake in this region.

Recommendations

With lakes in the region facing many threats (e.g., climate change, biodiversity loss, development, pollution), benthic communities act as a barometer of ecological change and impacts. Continuing to monitor the benthic community in Manitouwabing Lake will allow for trends to be tracked over time and the observation of any notable shifts (statistically significant changes) that would be cause for further investigation and potentially require remedial actions.

Manitouwabing Lake State of the Basin Review 2018

Bev Clark, Aquatic Scientist, was hired by the MLCA to conduct a thorough review of existing Manitouwabing Lake water quality data and provide recommendations for future water quality monitoring activities. Clark's report was published in 2018 and is available on the MLCA's website. The key conclusion and recommendations from the report are provided in full below (complete report available in Appendix C).

The following conclusions were drawn in Clark's (2018) report:

- The bottom line with respect to phosphorus is that concentrations are similar throughout the lake and consistent between years.
- The phosphorus values indicate a lake that is highly influenced by its watershed with no sign of deterioration in water quality (with respect to phosphorus) over the years.
- Manitouwabing Lake's mesotrophic status is not likely the result of human activity in the watershed but rather the result of export of dissolved organic carbon (DOC) from wetlands. Most of the 11.5 µg/L TP in Manitouwabing Lake has its origins as DOC in the watershed's wetland complexes.
- DOC concentrations throughout the lake are relatively similar (4.2-6.0 mg/L) with slightly more tea stained water in the south east areas of the lake. This relatively narrow range in DOC values throughout the lake indicates similar wetland conditions throughout the different subwatersheds.
- Manitouwabing Lake is not expected to support algal blooms.
- Bacteria data are difficult to interpret. There are conclusions that can be drawn by examination of the data, but there are also many aspects of bacteria in lake water that cannot be deduced from these data. Generally, the Manitouwabing Lake bacteria data show that about 5% of the samples are over 100 counts which is the guideline for recreational use. This indicates that the water is swimmable in most areas 95% of the time.

Recommendations

The following recommendations are made in Clark's (2018) report:

1. Several central locations (LPP Site #11, 1 and 3) and possibly one new location near the outflow be monitored by LPP volunteers with an effort to maintain a long-term monitoring record. Some of these sites may or may not be currently sampled. Long-term monitoring records are important to assess the effect of external drivers on the nutrient status of the lake.
2. The efforts used to collect bacteria data could be directed at other issues such as:
 - Education towards aspects of nearshore (shoreline) management.
 - Useful inventories such as areas where aquatic plants grow to assess whether the extent of plant beds are changing.
 - Long-term records of water levels and/or temperature.
3. Late summer monitoring of dissolved oxygen in the deepest location and in isolated bays where the depths are greater than 7-8 m (see page 11 of Clark (2018) report for a map) may provide additional information to address the potential for algal blooms. After areas are identified as having the oxygen depleted at the bottom (with measured oxygen profiles) in year one, there can be samples taken 1 meter from the bottom in subsequent years to assess whether or not there are elevated phosphorus concentrations in the bottom water.
4. All efforts should be made to ensure that invasive species do not enter the watershed. There are many organizations that provide guidance on invading species, e.g. The Federation of Ontario Cottagers' Associations. <https://foca.on.ca/aquatic-invasive-species-program/>

Additional years of LPP results have become available since Clark's report was published in 2018. These additional data are included in Appendix A along with all historical LPP data for Manitouwabing Lake.

FISH COMMUNITIES

Overview

Table 4 provides a high-level overview of the fish communities in Manitouwabing Lake.

Table 4. Summary of Manitouwabing Lake fish communities and their management (see [link](#))

Major fish species	Largemouth bass (introduced), smallmouth bass (introduced), walleye (introduced), black crappie (introduced), northern pike (introduced)
Other fish species	Lake whitefish, creek chub, brown bullhead, yellow perch, bluntnose minnow, eastern blacknose dace, cisco, pumpkinseed, rock bass, common carp, white sucker
Lake trout management	Not designated
Current stocking	None
Historic stocking	Walleye (1938, 1950-2010), smallmouth bass (1941, 1950-1966)
Contaminants (species tested)	Northern pike, walleye, black crappie

The first documentation of a Ministry-led fish community study on Manitouwabing Lake is from 1959. A cursory survey documented the presence of walleye, smallmouth bass, largemouth bass, yellow perch, lake whitefish, and common carp. Northern pike, however, were not found to be present at that time. A historical note on the Ministry’s lake file indicates that northern pike were introduced to the lake via unauthorized introduction in the 1960s. Interestingly, Manitouwabing Lake is the only lake known to contain common carp in the Parry Sound area. Another unreferenced historical note on the Manitouwabing Lake file states that carp were introduced to the lake at the turn of the century (1900) or earlier. Stocking of walleye began in 1938 and in 1941 for smallmouth bass (McIntyre, 2005).

During a 1974 Aquatic Habitat Inventory Survey, northern pike were documented in the lake for the first time. At this time walleye, smallmouth bass, and brown bullhead were all captured in low numbers. On the other hand, northern pike, common white sucker, rock bass, yellow perch, and cisco were captured in high numbers (OMNR, 1974).

In 1982 a trap net and gill net survey was conducted on Manitouwabing Lake to assess the health of the fish population. Results of the survey indicated a well-balanced fish community

with good recruitment, although productivity appeared low and there were indications of over-exploitation of game fish (McIntyre, 1983). When this survey was repeated in 1988, the results showed a drastic change to a coarse fish dominated community (i.e., dominated by fish other than game fish) (Sober, 1989). The brown bullhead population saw a dramatic increase between these two surveys. Weight and number of fish caught in 1988 were much higher than in 1982, attributable primarily to the growing brown bullhead population. Walleye, northern pike, and smallmouth bass populations were essentially unchanged.

Intensive creel surveys were conducted in the summer of 1983 and the winter of 1984. Together these surveys revealed high fishing pressure on Manitouwabing Lake and modest harvest of game fish (MacMillan, 1985a; 1985b). Fishing effort exceeded 30 rod hours per hectare with fishing for northern pike described as very good, but only fair for walleye and smallmouth bass. Comparing this information to volunteer creel data pooled from 1973-1979, it appears that fishing quality has not changed much on the lake over time.

In an effort to rebuild walleye stocks and promote natural rehabilitation in Manitouwabing Lake, several habitat enhancement projects were carried out over the decades. Details on some of these efforts are quite sparse. For example, in a note on the lake file in 1985, a walleye spawning bed enhancement project at Broadbent Rapids is mentioned (MNRF, 2010). A separate note added in 1988 states that spawning bed rehabilitation work was completed below the Hurdville Dam (limestone rock placement and sand removal) and spawning bed rubble was cleaned at Squaw Rapids on Middle River (MNRF, 2010). No other details are provided.

In addition to spawning bed enhancement work, lake-specific fishing regulations were changed in 1998. The walleye daily catch limit was reduced to two fish per day and a maximum size catch limit of 35.6 cm (14") was imposed (this regulation was later revoked in 2008). Furthermore, in 2000, the Manitou-Seguin Game and Fish Club commenced rehabilitative stocking of walleye fry, in partnership with the MNRF. In 2000 and 2001 alone, over 638,000 walleye fry were stocked at various sites in Manitouwabing Lake (McIntyre, 2000; 2001).

An End of Spring Trapnet (ESTN) survey was conducted in 2004, shortly after walleye stocking began. The purpose of the survey was three-fold. First, to assess the status of the nearshore fish community, particularly the walleye population. Second, to evaluate the impact of previous walleye fry stocking, and third, to evaluate the impact of regulations for walleye implemented in 1998. ESTN surveys use live capture, 6' trap nets set overnight for approximately 24 hours.

A total of 30 net sets were completed from May 17-June 10 resulting in the capture of 2,820 fish weighing over 1,400 kg. As summarized by McIntyre (2005), productivity was found to be exceptionally high, but over 70% of the catch weight was comprised of brown bullhead (Figure 21). Abundance indices for walleye, smallmouth bass, and largemouth bass were somewhat low relative to provincial and Parry Sound area lakes. These figures were similar to those observed on the lake in the 1980s (Figure 22). Northern pike abundance was slightly higher than the provincial and Parry Sound average and similar to abundance measured in the 1980s. Other nearshore species including yellow perch, rock bass, and pumpkinseed were caught in very low abundance.

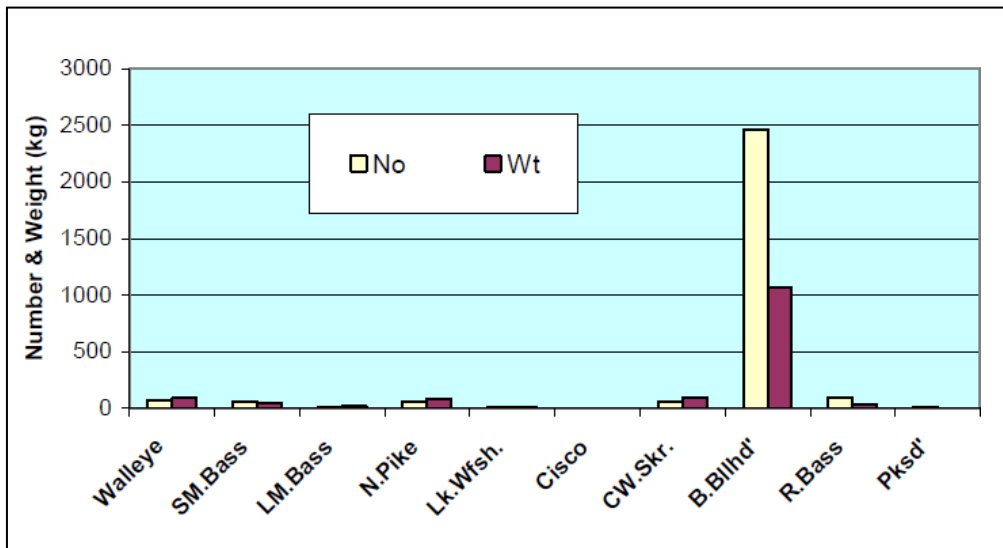


Figure 21. Catch composition for the 2004 ESTN survey on Manitouwabing Lake (McIntyre, 2005).

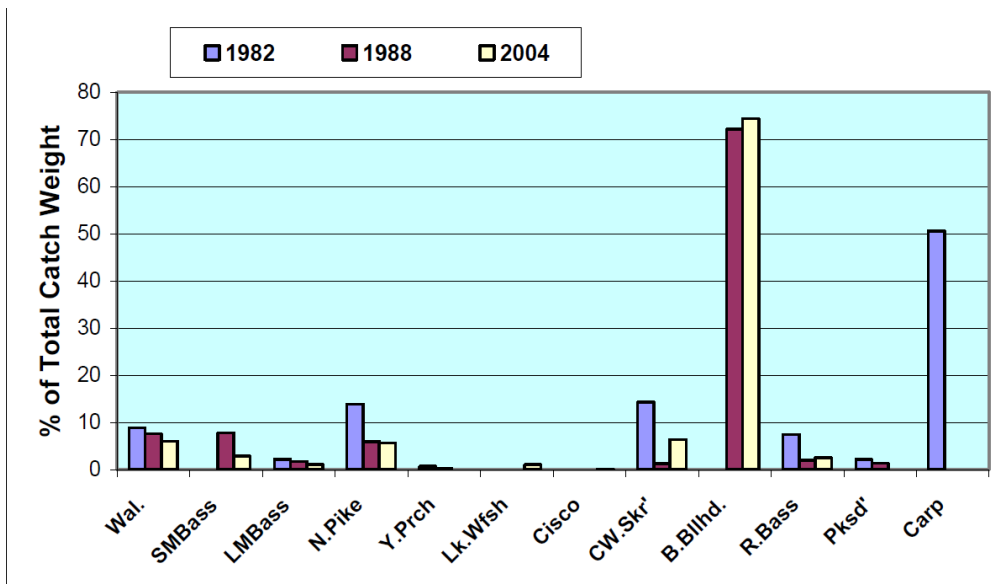


Figure 22. Catch composition by species for the 1982, 1988, and 2004 trapnet surveys on Manitouwabing Lake (McIntyre, 2005).

Nearshore Community Index Netting Project (2004 & 2005)

Manitouwabing Lake was most recently surveyed by the MNRF in 2014 and 2015 (Figure 23). A Nearshore Community Index Netting (NSCIN) project was conducted over the two years. The purpose of the survey was to obtain information on the composition of the fish community and the abundance and population of primary game fish species (Scholten, 2020).

NSCIN surveys use live capture, 6' trap nets set overnight for approximately 24 hours. Netting is conducted in late summer from August 1 until the surface temperature cools to 13°C. Net set locations are typically randomly selected, however in this case the same sites used in the 2004 ESTN (McIntyre, 2005) were used again. Captured fish are enumerated by species and major game fish species are sampled in greater detail including length, weight, and the collection of calcified structures for age determination.

A total of 16 net sets were completed from September 8-13, 2014 and 15 net sets completed from September 28-October 2, 2015. Most of the results presented in the NSCIN report are reported by combining results from both years.

By both number and weight, brown bullhead was the most abundant species (average 16.4/net, 7.4kg/net). Of the large game fish, smallmouth bass were the most abundant by number and weight (3.0/net, 2.0kg/net). Northern pike (0.8/net, 1.1kg/net), largemouth bass (1.0/net, 0.8kg/net), and walleye (1.1/net, 1.6kg/net) were all caught at similar rates but varied more in their total weights due to differences in average size of each species. Black crappie were the most numerous game fish overall (4.9/net), but accounted for less weight (1.2kg/net). Finally, white sucker, rock bass, and pumpkinseed made up the remainder of the catch (Figure 24). Table 5 presents a summary of size and age ranges for each game fish species as well as an indication of growth rate.

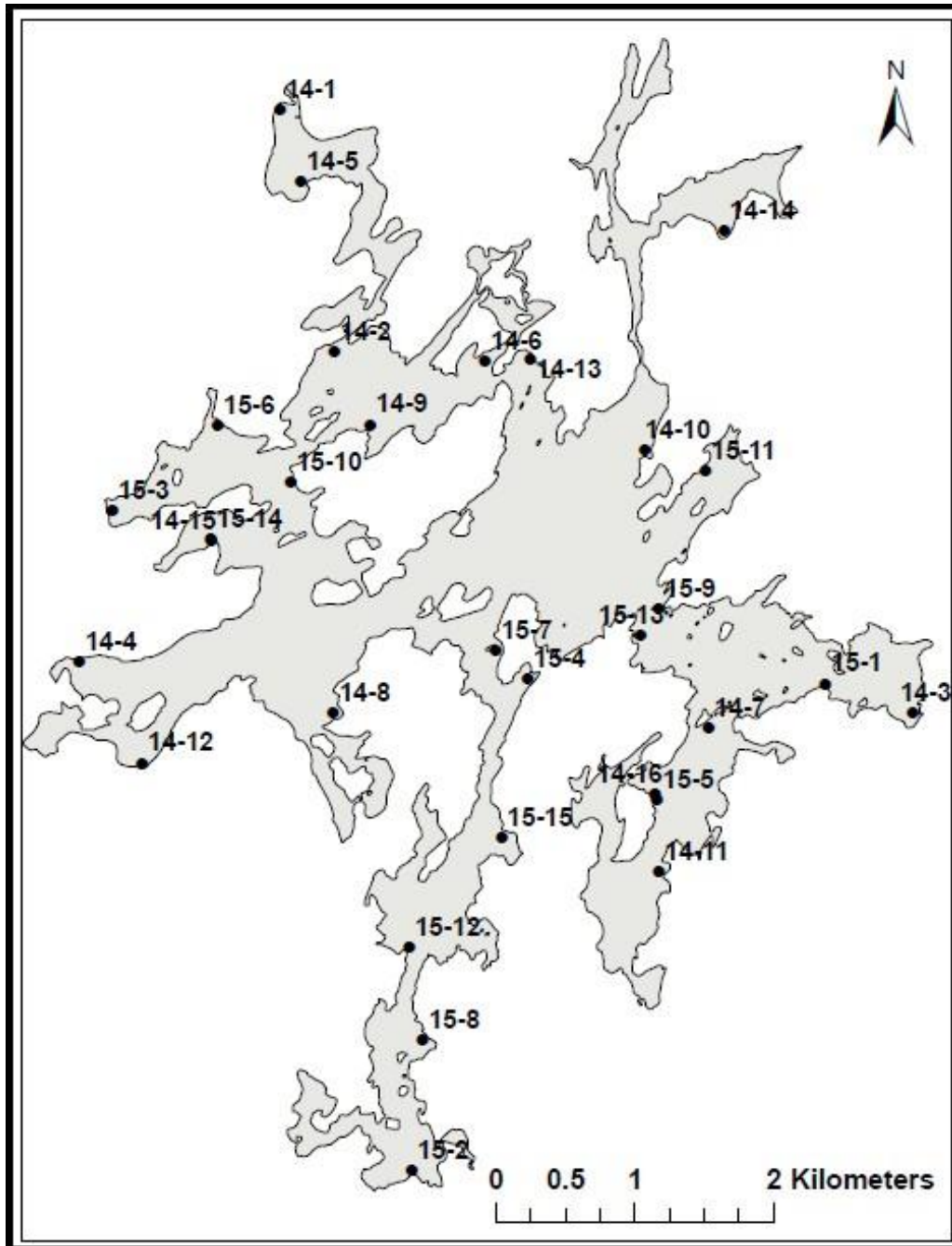


Figure 23. Manitouwabing Lake trap net set locations, NSCIN 2014-2015.

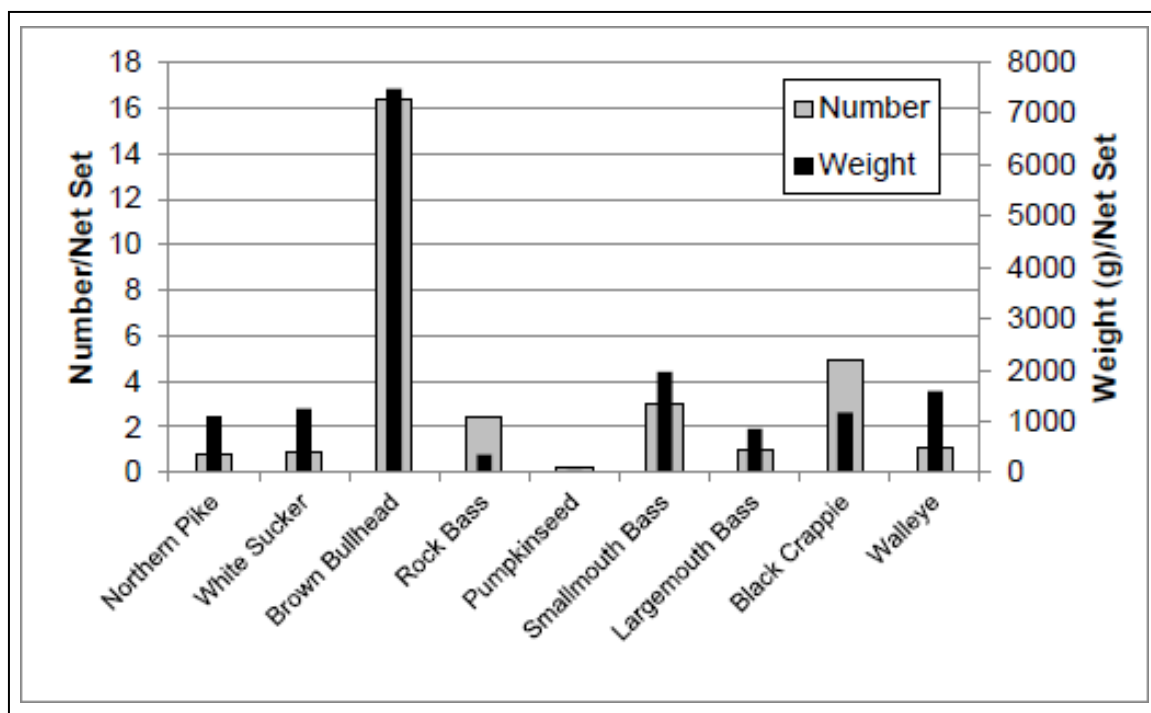


Figure 24. Catch summary by number (wide bars, left vertical axis) and weight (narrow bars, right vertical axis) for Manitowabing Lake NSCIN 2014-2015 (Scholten, 2020).

Table 5. Summary of game fish species' lengths, ages, and growth rates (Scholten, 2020).

	Walleye	Northern pike	Smallmouth bass	Largemouth bass	Black crappie
Min fork length (mm)	249	337	160	180	115
Max fork length (mm)	672	840	444	431	315
Mean fork length (mm)	487	559	325	347	232
Min age (years)	2	1	1	1	1
Max age (years)	19	8	12	9	5
Mean age (years)	7.7	4.3	6.1	3.1	2.7
Growth rate	Above average	Below average	Above average	Above average*	Above average

* The observed growth rate of largemouth bass was very rapid; above maximum values observed elsewhere in the province.

The 2014-2015 NSCIN report (Scholten, 2020) summarizes that overall, catch composition and abundance of the major game fish species caught were similar to previous surveys, other than the appearance of black crappie (Figure 25). While black crappie had been reported to occur in the lake previously, they did not occur when the last MNRF survey was conducted in 2004. Since being illegally introduced to the lake, black crappie have become a major component of the fish community as evidenced by the fact that they were the second most commonly caught species by number. Several species previously documented were not

caught during the 2014-2015 sampling including yellow perch, lake whitefish, cisco, and common carp.

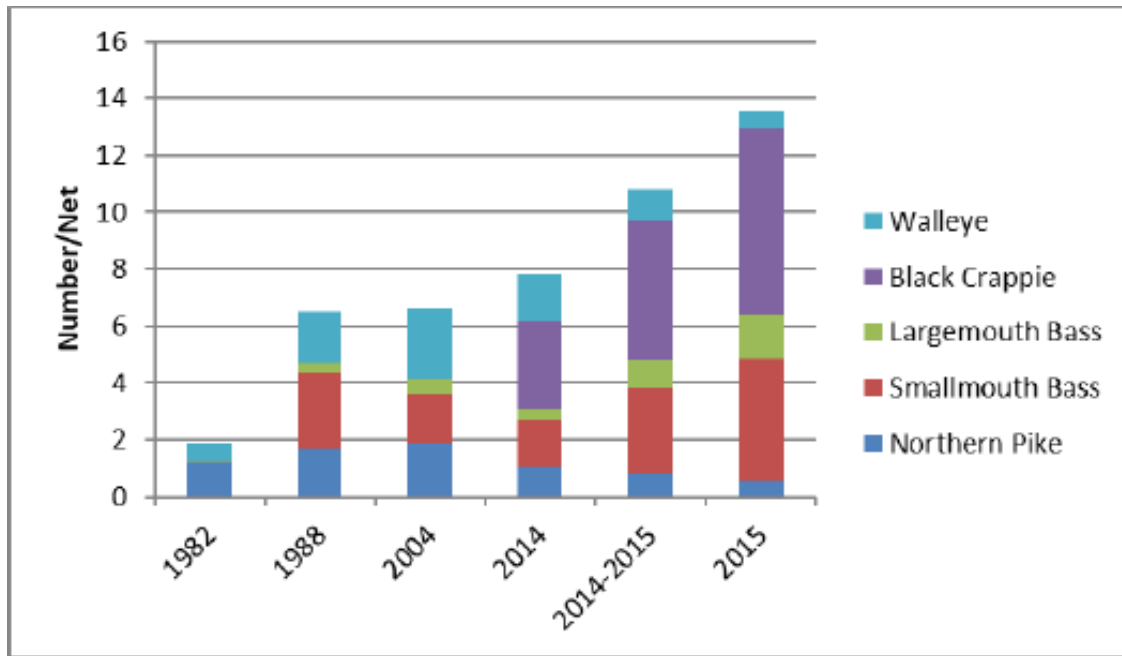


Figure 25. Catch rate (number/net) of major game fish species from 6' trap nets in Manitouwabing Lake, by year (Scholten, 2020).

The overall catch rates of northern pike and walleye in 2014-2015 were somewhat lower than in the past. Smallmouth bass, on the other hand, had a higher catch rate than observed in 1988 and 2004, but not to the point of concluding that a long-term trend has occurred. Largemouth bass catch rate has increased with each successive survey reflecting a real long-term increase in abundance. Brown bullhead catch has shown the greatest variation over surveys; none were caught in 6' trap nets in 1982, extremely large numbers were caught in 1988 and 2004, and a decrease occurred in 2014-2015 (Figure 26). Scholten (2020) states that the implications of changing bullhead abundance on other members of the fish community is unclear but that a real decline in abundance more recently may ease competitive interactions with other species.

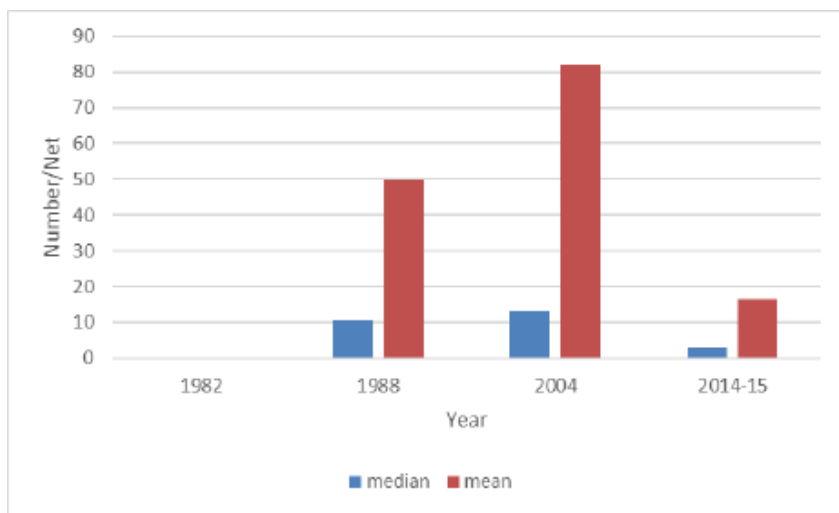


Figure 26. Mean and median catch of brown bullhead from 6' trap nets in Manitouwabing Lake, by year (Scholten, 2020).

Based on the findings from the 2014-2015 NSCIN project, it was determined that Manitouwabing Lake should be “managed as a natural Walleye lake and supplemental stocking should not be done” (Scholten, 2020, p. 15). Provincial guidelines recommend that stocking of a species not occur when a viable self-sustaining population is present (OMNR, 2002). Furthermore, the report recommends that “no lake-specific management actions take place at this time” (Scholten, 2020, p. 15).

Consumption Advisories

Consumption advisories or restrictions on fish are commonplace across jurisdictions in North America. Fish are exposed to, and absorb, contaminants in the water in a variety of ways (e.g., consuming contaminated food, absorption from the water as it passes over their gills). Contaminants found in fish can come from local sources, as well as sources from thousands of kilometers away (e.g., airborne contaminants that end up in the water via rain or snowfall). Examples of contaminants that are known to be transported long distances include mercury, polychlorinated biphenyls (PCBs), and toxaphene.

Based on species, size, and location, certain fish are more or less suitable to eat than others. Smaller fish tend to be less contaminated than larger fish of the same species. In the Great Lakes, leaner fish (e.g., bass, pike, walleye, perch, panfish) tend to have much lower contaminants than fatty species like trout and salmon. In inland lakes, top-predatory fish such as pike and walleye generally have greater contaminants than panfish or whitefish.

Advisories provide consumption advice for the general population and sensitive populations. The sensitive population includes women of child-bearing age (women who intend to become pregnant or are pregnant) and children younger than 15 years of age. These groups are considered sensitive because pregnant women and nursing mothers can affect the health of their baby through a diet elevated in contaminants, and young children are affected by contaminants at lower levels than the general population.

In terms of advisories for eating fish from Manitouwabing Lake, mercury is the contaminant of concern (Table 6). Specifically, advisories exist for black crappie, northern pike, and walleye due to concerns around mercury. To learn more about fish consumption advisories and how to reduce the risk from contaminants in fish, please visit the [MECP website](#) on eating Ontario fish.

Table 6. Fish consumption advisories for Manitouwabing Lake (see [link](#)).

Species	General Population	Sensitive Population*
Black crappie ¹	<ul style="list-style-type: none"> max 32 meals/month of fish 20-25cm max 12 meals/month of fish 25-30cm 	<ul style="list-style-type: none"> max 12 meals/month of fish 20-25cm max 4 meals/month of fish 25-30cm
Northern pike ¹	<ul style="list-style-type: none"> max 16 meals/month of fish 30-35cm max 16 meals/month of fish 35-40cm max 16 meals/month of fish 40-45cm max 12 meals/month of fish 45-50cm max 8 meals/month of fish 50-55cm max 8 meals/month of fish 55-60cm max 8 meals/month of fish 60-65cm max 4 meals/month of fish 65-70cm max 4 meals/month of fish 70-75cm max 4 meals/month of fish >75cm 	<ul style="list-style-type: none"> max 8 meals/month of fish 30-35cm max 8 meals/month of fish 35-40cm max 4 meals/month of fish 40-45cm max 4 meals/month of fish 45-50cm max 4 meals/month of fish 50-55cm max 4 meals/month of fish 55-60cm no meals of fish 60-65cm no meals of fish 65-70cm no meals of fish 70-75cm no meals of fish >75cm
Walleye ¹	<ul style="list-style-type: none"> max 8 meals/month of fish 25-30cm max 8 meals/month of fish 30-35cm max 4 meals/month of fish 35-40cm max 4 meals/month of fish 40-45cm max 4 meals/month of fish 45-50cm max 2 meals/month of fish 50-55cm max 2 meals/month of fish 55-60cm max 2 meals/month of fish 60-65cm max 0 meals/month of fish 65-70cm 	<ul style="list-style-type: none"> max 4 meals/month of fish 25-30cm no meals of fish 30-35cm no meals of fish 35-40cm no meals of fish 40-45cm no meals of fish 45-50cm no meals of fish 50-55cm no meals of fish 55-60cm no meals of fish 60-65cm no meals of fish 65-70cm

* People who are pregnant or may become pregnant and children under 15; ¹ Mercury

SUMMARY OF RECOMMENDATIONS

Water Quality

Continue annual LPP sampling. If capacity is limited, preference should be given to sites that are spread across different areas of the lake and that have the longest datasets. Long-term datasets are important to assess the effect of external drivers on the nutrient status of the lake (Clark, 2018). Suggested sites are Station 2973, Site IDs 8, 9, 13, and 18.

Continue with annual benthic sampling to accurately characterize and track trends in the benthic community in the lake. Lakes in the region are experiencing increasing pressures, such as climate change, invasive species, and development. It is important to continue monitoring water quality even in lakes considered to be healthy so that if/when changes start to occur, those changes are noted and appropriate actions can be taken swiftly (e.g., stewardship actions, enhanced monitoring or studies). Without long-term, continuous monitoring, changes in the benthic community and water quality more broadly may go unnoticed until there is a significant problem.

As described by Clark (2018), late summer monitoring of dissolved oxygen in the deepest location and in isolated bays where the depths are greater than 7-8 m (see map on page 11 of Clark (2018) report) may provide additional information to address the potential for algal blooms. After areas are identified as having the oxygen depleted at the bottom (with measured oxygen profiles) in year one, TP samples can be taken 1 m from the bottom in subsequent years to assess whether or not there are elevated TP concentrations in the bottom water.

Bacteria monitoring should be focused on beaches as per the province's Beach Management Guidance Document. Should the MLCA wish to continue with bacteria monitoring elsewhere, it should happen in the framework of a scientific investigation focused on testing specific hypotheses on potential sources of contamination through a focused sampling program.

Long-term records of water temperature are easy for a dedicated volunteer or group of volunteers to collect and can provide very useful information.

Fish Communities

The province of Ontario released [new regulations](#) for the sale and possession of live bait in July 2020, anglers should familiarize themselves with these changes to remain in compliance with the new regulations at all times. Highlights include:

- A valid fishing license is required to catch your own live baitfish, leeches, crayfish, and northern leopard frogs.
- There are specific fish species that can and cannot be used as bait in Ontario.
- Bait can only be caught in your home Bait Management Zone (BMZ) and cannot leave your BMZ.
- Baitfish and leeches you catch cannot be sold unless you are a licensed dealer.
- If you fish outside your home BMZ, you must buy your baitfish and leeches locally, keep a receipt, and use or dispose of your bait within two weeks of purchase.

Recreational anglers should use the app [MyCatch](#) by Angler's Atlas to log fishing trips and share fishing data confidentially with biologists. Use of the app can help supplement fisheries data between MNRF population surveys.

Stewardship Activities

MLCA should continue to encourage Manitouwabing Lake property owners to maintain and/or restore natural shorelines. GBB's [Planting for Pollinators](#) guide offers property owners assistance in choosing plants for their property that are native to eastern Georgian Bay and that help to enhance the property and conserve important natural habitats. Native plants can be sourced from the MLCA [Native Plant Seedling Sale](#) and the annual GBB Native Plant Fundraiser (check the GBB [events page](#) in the spring).

Property owners interested in decreasing their ecological footprint can also utilize GBB's [Life on the Bay Stewardship Guide](#). The guide covers a range of topics including how to live with wildlife, how to use landscaping to improve water quality, best practices during construction, how to store chemicals and garbage, and many more. The Life on the Bay guide is designed to be used by waterfront property owners on Georgian Bay and inland lakes.

There are many [citizen science programs](#) for interested cottagers and residents to get involved in. Examples include invasive species reporting, IceWatch, FrogWatch, Canadian Lakes Loon Survey, and many others.

REFERENCES

- Clark, B. (2018). *Manitouwabing Lake state of the basin review 2018*. Retrieved from <https://www.mlca.ca/resources/Documents/Manitouwabing%20Lake%20Consultant%20Report%202018.pdf>
- MacMillan, M.A. (1985a). *Results of an intensive creel census conducted on Lake Manitouwabing, during the summer of 1983*. OMNR Parry Sound District fisheries file report.
- MacMillan, M.A. (1985b). *The 1984 winter creel census on Lake Manitouwabing*. OMNR Parry Sound District fisheries file report.
- Manitouwabing Lake Community Association (MLCA). (2019). *About the Lake*. Retrieved from <https://www.mlca.ca/About-The-lake>
- McIntyre, E. (1983). *1982 status report on the Lake Manitouwabing Fishery*. OMNR Parry Sound District fisheries file report.
- McIntyre, E. (2000). *2000 annual CFIP report Manitou-Seguin Game and Fish Club rehabilitation of Lake Manitouwabing walleye population walleye culture and stocking project*. OMNR Parry Sound District fisheries file report.
- McIntyre, E. (2001). *2001 annual CFIP report Manitou-Seguin Game and Fish Club Manitouwabing and McKellar Lake walleye culture project*. OMNR Parry Sound District fisheries file report.
- McIntyre, E. (2005). *Manitouwabing Lake 2004 End of Spring Trapnet (ESTN) survey report*. OMNR Parry Sound District. Retrieved from http://www.muskokawaterweb.ca/images/mnr/Manitouwabing_ESTN_2004.pdf
- Ministry of Indigenous Affairs. (2022). *Map of Ontario treaties and reserves*. Government of Ontario. Retrieved from <https://www.ontario.ca/page/map-ontario-treaties-and-reserves>
- Ministry of Natural Resources and Forestry (MNRF). (2010). *Lake fact sheet – Parry Sound District: Manitouwabing Lake*. Queen’s Printer for Ontario. Retrieved from http://www.muskokawaterweb.ca/images/mnr/Manitouwabing_Lake.pdf
- OMNR. (1974). *Aquatic habitat inventory survey (a.k.a. lake survey)*. Parry Sound District fisheries file report.
- OMNR. (2002). *Guidelines for stocking fish in inland waters of Ontario*. Fisheries Section, Fish and Wildlife Branch, Ministry of Natural Resources. Peterborough, ON.
- R Core Team (2022). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL <https://www.R-project.org/>.

- Scholten, S. (2020). *Manitouwabing Lake near shore community index netting survey 2014-2015*. Ontario Ministry of Natural Resources and Forestry File Report. Bracebridge, ON.
- Sober, L.L. (1989). *A trap net assessment of the Manitouwabing Lake Fishery July 11- Aug. 3, 1988*. OMNR Parry Sound District fisheries file report.

APPENDICES

Appendix A. Active and Historical Lake LPP Sampling Locations

It is important to note that LPP TP data are presented as two samples (TP1 and TP2) plus an average for each sampling date. TP1 and TP2 are duplicate TP concentrations which help to verify confidence in the results and provide a contingency against one sample being lost due to breakage during shipment or laboratory accidents.

If there are major differences between TP1 and TP2, it is likely that one of the two samples was contaminated, for example by zooplankton or other debris. In this case the data will be 'flagged' in yellow. Use caution when interpreting TP data that has been flagged.

Station: 2973

Site ID: 1

Description: Great Bay

Data Collector: LPP volunteer

Year	Secchi Depth (m)	TP1 (µg/L)	TP2 (µg/L)	Average TP (µg/L)	Calcium (mg/L)
2002		12.72	13.51	13.12	
2003	2.30	10.21	10.06	10.14	

Station: 2973

Site ID: 3

Description: Longhorn & James Bay

Data Collector: LPP volunteer

Year	Secchi Depth (m)	TP1 (µg/L)	TP2 (µg/L)	Average TP (µg/L)	Calcium (mg/L)
2002		24.25	36.58	30.42	
2003		12.40	13.52	12.96	

Station: 2973

Site ID: 4

Description: McKellar, near dock

Data Collector: LPP volunteer

Year	Secchi Depth (m)	TP1 ($\mu\text{g/L}$)	TP2 ($\mu\text{g/L}$)	Average TP ($\mu\text{g/L}$)	Calcium (mg/L)
2002	2.80	51.10	44.80	47.95	
2003	2.37				
2006	3.13	13.96	12.85	13.41	
2007	3.24	11.54	11.72	11.63	
2008	3.55	10.10	10.26	10.18	3.66
2009	3.30	9.51	9.60	9.56	2.34

Station: 2973

Site ID: 6

Description: L Taits Is-Great Bay

Data Collector: LPP volunteer

Year	Secchi Depth (m)	TP1 ($\mu\text{g/L}$)	TP2 ($\mu\text{g/L}$)	Average TP ($\mu\text{g/L}$)	Calcium (mg/L)
2002	2.09	18.70	13.33	16.02	
2003	2.14	11.40	12.10	11.75	
2004	2.28	9.20	11.23	10.22	
2005	2.33	10.51	10.87	10.69	
2006	2.48	7.12	6.99	7.06	
2007	2.23				
2008	2.17	24.16	21.47	22.82	3.94
2009	2.34	9.38	8.27	8.83	3.00
2011	2.32	11.00	11.20	11.10	3.74
2012	2.28	7.80	8.20	8.00	3.69
2013	2.67	10.00	10.20	10.10	3.21
2014	2.37	13.80	15.20	14.50	3.58
2015	2.24	9.40	9.40	9.40	3.76

Station: 2973

Site ID: 7

Description: N / W Tait's Island

Data Collector: LPP volunteer

Year	Secchi Depth (m)	TP1 ($\mu\text{g/L}$)	TP2 ($\mu\text{g/L}$)	Average TP ($\mu\text{g/L}$)	Calcium (mg/L)
2006	2.69	10.18	12.27	11.23	
2007	2.73	9.20	9.30	9.25	
2008	2.69	12.63	14.34	13.49	3.88
2009	2.59				

Station: 2973

Site ID: 8

Description: West of Maplewood

Data Collector: LPP volunteer

Year	Secchi Depth (m)	TP1 ($\mu\text{g/L}$)	TP2 ($\mu\text{g/L}$)	Average TP ($\mu\text{g/L}$)	Calcium (mg/L)
2002	2.08	9.70	10.60	10.15	
2003	2.00	13.20	13.40	13.30	
2004	2.60	12.17	11.61	11.89	
2005	2.42	16.50	11.60	14.05	
2006	2.23	10.03	10.44	10.24	
2007	2.53	10.48	9.26	9.87	
2008	1.96	12.96	12.40	12.68	3.66
2009	2.35	11.63	10.75	11.19	
2010	2.41	9.60	10.40	10.00	3.43
2011	2.39	14.00	12.80	13.40	3.87
2012	2.52	7.80	7.60	7.70	3.95
2013	2.45	13.20	16.40	14.80	3.23
2014	2.35	11.60	11.40	11.50	3.64
2015	2.37	9.20	9.60	9.40	3.48
2016	2.63	9.20	8.80	9.00	3.34
2017	2.02	13.80	10.20	12.00	3.56
2018	2.30	14.20	12.00	13.10	3.58
2019	2.33	10.80	11.40	11.10	3.30
2021		12.30	12.10	12.20	4.20
2022		88.50	91.50	90.00	4.22

Station: 2973

Site ID: 9

Description: E of Longhorn, Hardie's Cr

Data Collector: LPP volunteer

Year	Secchi Depth (m)	TP1 ($\mu\text{g/L}$)	TP2 ($\mu\text{g/L}$)	Average TP ($\mu\text{g/L}$)	Calcium (mg/L)
2002	1.61				
2005		14.96	14.53	14.75	
2006	1.65				
2007	1.40	14.21	12.75	13.48	
2008	1.35	16.92	15.22	16.07	3.52
2016	1.42	12.60	12.20	12.40	3.66
2017		13.00	11.60	12.30	4.76
2018		11.20	12.20	11.70	4.64
2018		11.80	11.80	11.80	
2019		14.40	13.00	13.70	

Station: 2973

Site ID: 10

Description: E end, Bailey's

Data Collector: LPP volunteer

Year	Secchi Depth (m)	TP1 ($\mu\text{g/L}$)	TP2 ($\mu\text{g/L}$)	Average TP ($\mu\text{g/L}$)	Calcium (mg/L)
2002	1.36				

Station: 2973

Site ID: 11

Description: N Tait's Is.

Data Collector: LPP volunteer

Year	Secchi Depth (m)	TP1 ($\mu\text{g/L}$)	TP2 ($\mu\text{g/L}$)	Average TP ($\mu\text{g/L}$)	Calcium (mg/L)
2006	2.35	9.16	8.53	8.85	
2012	2.63	13.40	12.20	12.80	3.80
2013	2.80	13.20	11.00	12.10	3.30

Station: 2973

Site ID: 12

Description: Manitouwabing (golf cs.) Bay

Data Collector: LPP volunteer

Year	Secchi Depth (m)	TP1 ($\mu\text{g/L}$)	TP2 ($\mu\text{g/L}$)	Average TP ($\mu\text{g/L}$)	Calcium (mg/L)
2006		9.11	9.70	9.41	
2007	2.25	10.98	10.31	10.65	
2009		9.18	9.81	9.50	2.96

Station: 2973

Site ID: 13

Description: Jones Bay

Data Collector: LPP volunteer

Year	Secchi Depth (m)	TP1 ($\mu\text{g/L}$)	TP2 ($\mu\text{g/L}$)	Average TP ($\mu\text{g/L}$)	Calcium (mg/L)
2006		13.44	12.52	12.98	
2007		13.06	12.21	12.64	
2008	2.34	13.34	12.06	12.70	3.12
2009	1.73	12.74	11.66	12.20	2.44
2011	2.16	13.00	14.80	13.90	
2012		11.20	11.00	11.10	3.34
2013	2.05	12.00	12.00	12.00	2.92
2014	2.02	9.40	9.80	9.60	2.96
2015	1.98	11.00	9.40	10.20	2.42
2016	2.34	8.80	8.80	8.80	3.06
2017		11.80	11.20	11.50	2.86
2018					3.32
2020	1.52	13.20	13.40	13.30	3.9
2021		14.00	14.00	14.00	3.3
2022		9.31	10.50	9.91	3.26

Station: 2973

Site ID: 18

Description: McKellar Bay

Data Collector: LPP volunteer

Year	Secchi Depth (m)	TP1 ($\mu\text{g/L}$)	TP2 ($\mu\text{g/L}$)	Average TP ($\mu\text{g/L}$)	Calcium (mg/L)
2016	1.44	10.40	10.60	10.50	4.06
2017		14.00	15.20	14.60	4.02
2018		9.80	9.40	9.60	3.90
2019		8.80	9.00	8.90	
2020	3	9.60	9.00	9.30	4.20
2021		9.8	9	9.4	4.4
2022		10.70	10.10	10.40	4.30

Station: 2973

Site ID: 19

Description: McKellar, near dock

Data Collector: LPP volunteer

Year	Secchi Depth (m)	TP1 ($\mu\text{g/L}$)	TP2 ($\mu\text{g/L}$)	Average TP ($\mu\text{g/L}$)	Calcium (mg/L)
2016	3.32	11.20	10.80	11.00	3.88
2017		11.40	11.20	11.30	3.94
2018		9.00	11.20	10.10	4.00
2019		11.80	10.20	11.00	
2021		13	13	13	4.3
2022		8.99	8.45	8.72	4.32

Station: 2973

Site ID: 20

Description: South of Fire RTE 150 Basin

Data Collector: LPP volunteer

Year	Secchi Depth (m)	TP1 ($\mu\text{g/L}$)	TP2 ($\mu\text{g/L}$)	Average TP ($\mu\text{g/L}$)	Calcium (mg/L)
2016		7.80	7.60	7.70	3.28

Station: 2973

Site ID: 21

Description: Moffat Basin, Deep spot

Data Collector: LPP volunteer

Year	Secchi Depth (m)	TP1 ($\mu\text{g/L}$)	TP2 ($\mu\text{g/L}$)	Average TP ($\mu\text{g/L}$)	Calcium (mg/L)
2016		12.60	12.80	12.70	3.76

Station: 2973

Site ID: 22

Description: Basin South of Lakeside Dr.

Data Collector: LPP volunteer

Year	Secchi Depth (m)	TP1 ($\mu\text{g/L}$)	TP2 ($\mu\text{g/L}$)	Average TP ($\mu\text{g/L}$)	Calcium (mg/L)
2016	2.61	9.20	10.00	9.60	3.76
2017	2.06	12.60	12.80	12.70	23.10

Station: 2973

Site ID: 23

Description: East of Hurdville

Data Collector: LPP volunteer

Year	Secchi Depth (m)	TP1 ($\mu\text{g/L}$)	TP2 ($\mu\text{g/L}$)	Average TP ($\mu\text{g/L}$)	Calcium (mg/L)
2020	1.43	11.20	11.20	11.20	4.20
2021		11.00	12.00	11.50	4.1
2022		10.70	10.20	10.45	3.99

Appendix B. Annual %EOT and Taxa Results

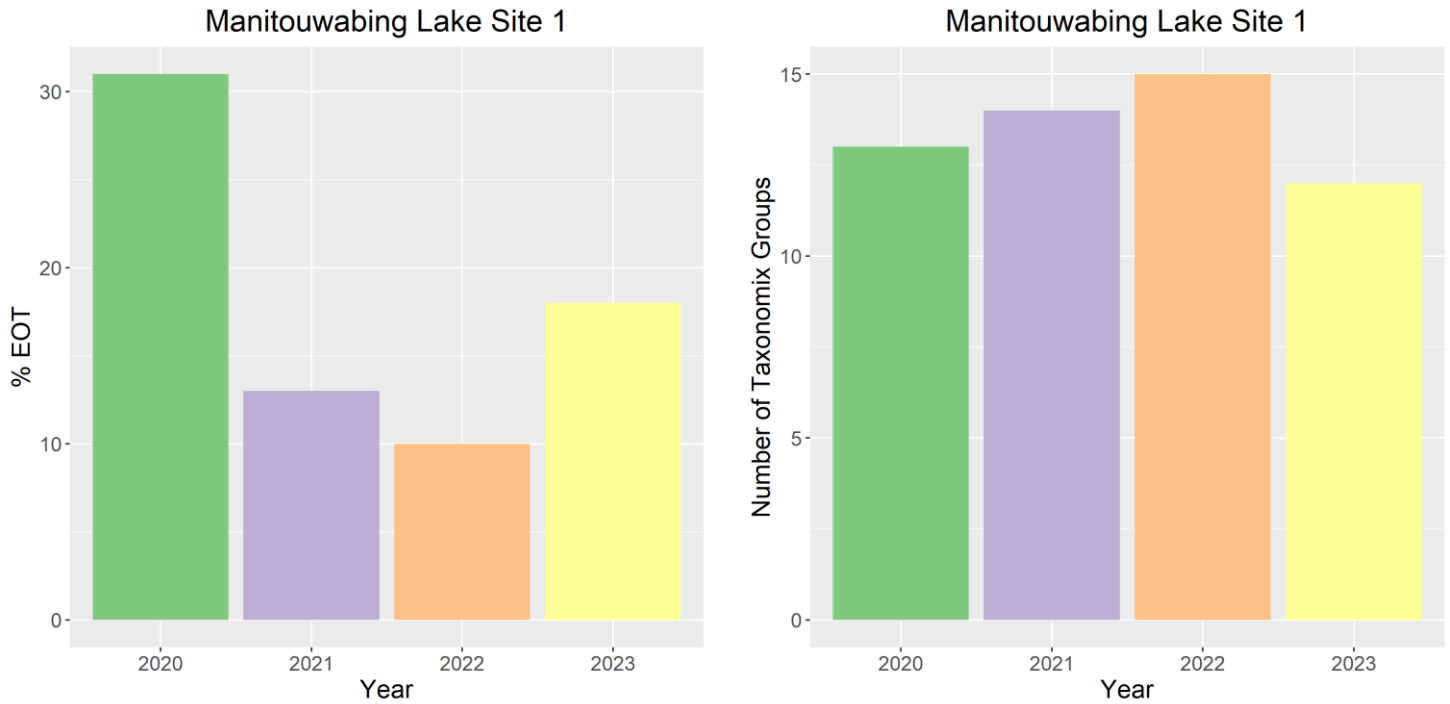


Figure 27. %EOT and the number of taxonomic groups for Site 1 on Manitouwabing Lake from 2020 to 2023.

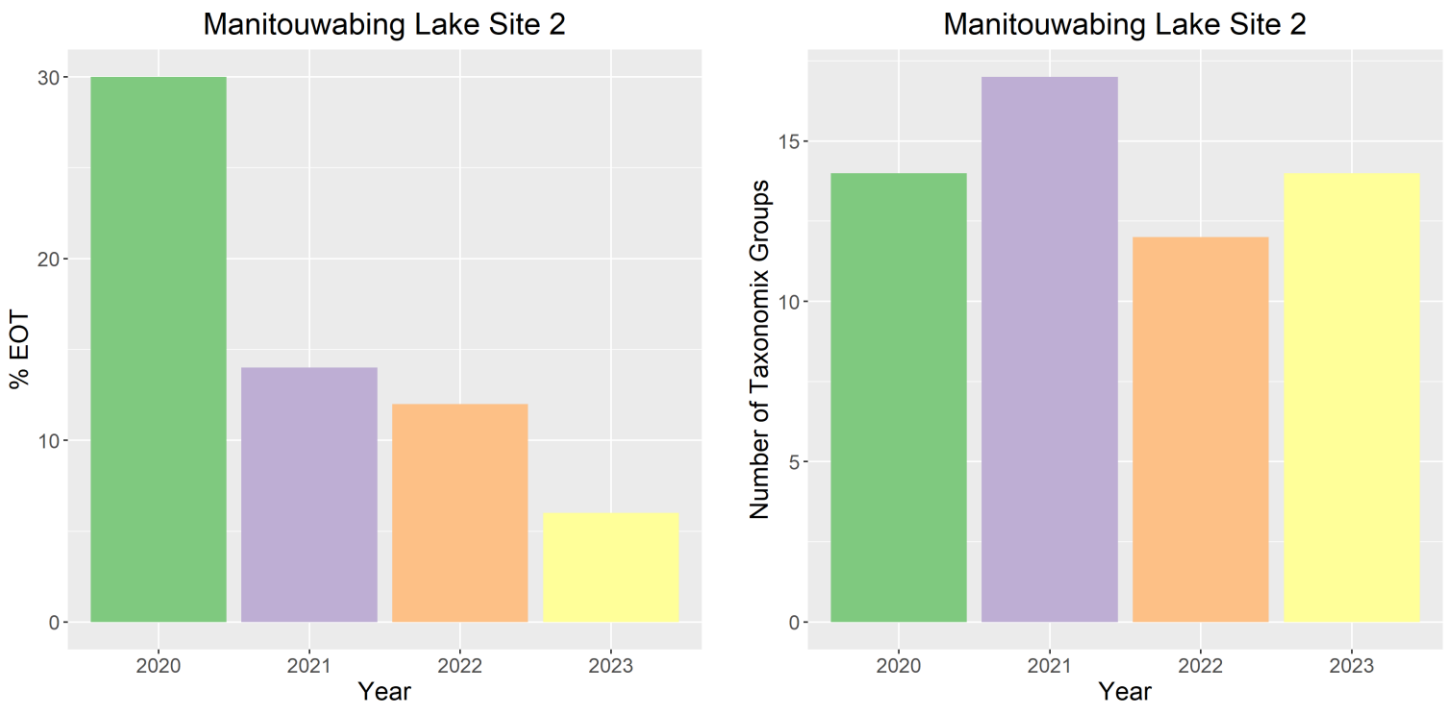


Figure 28. %EOT and the number of taxonomic groups for Site 2 on Manitouwabing Lake from 2020 to 2023.

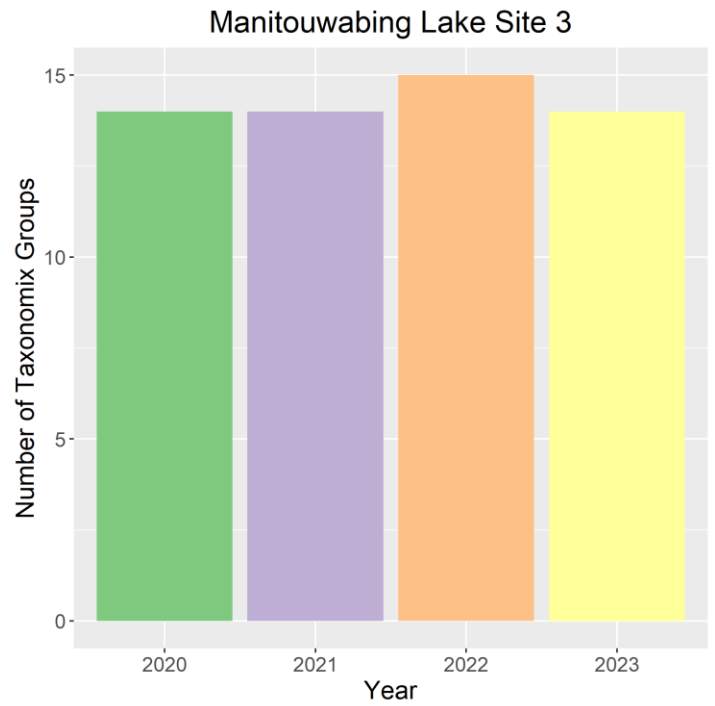
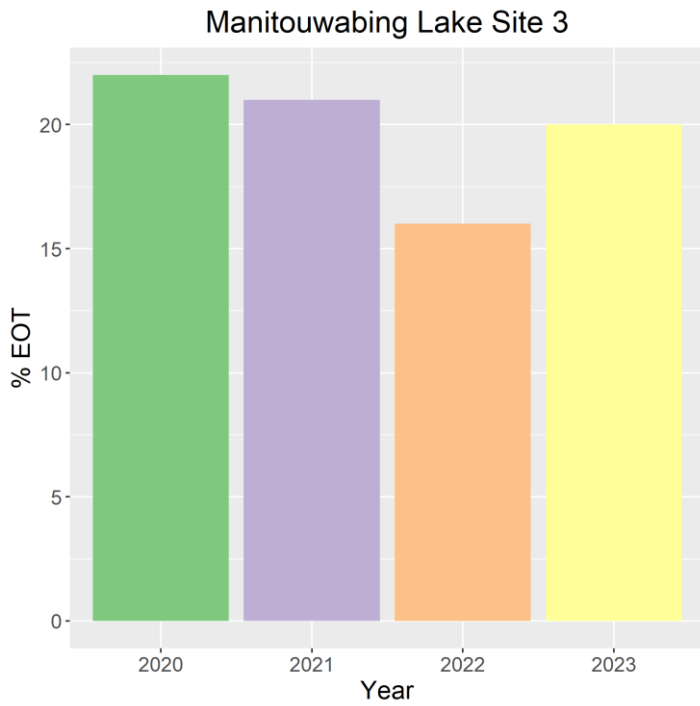


Figure 29. %EOT and the number of taxonomic groups for Site 3 on Manitouwabing Lake from 2020 to 2023.

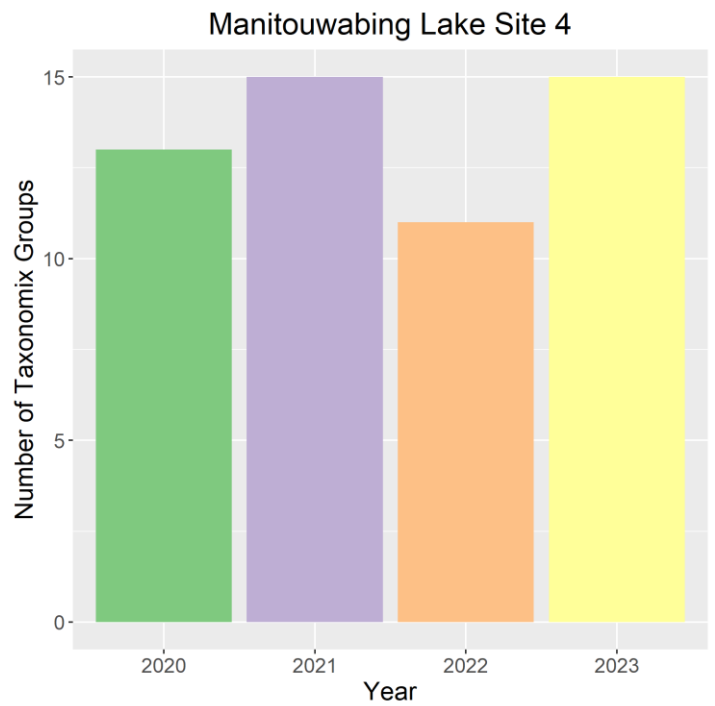
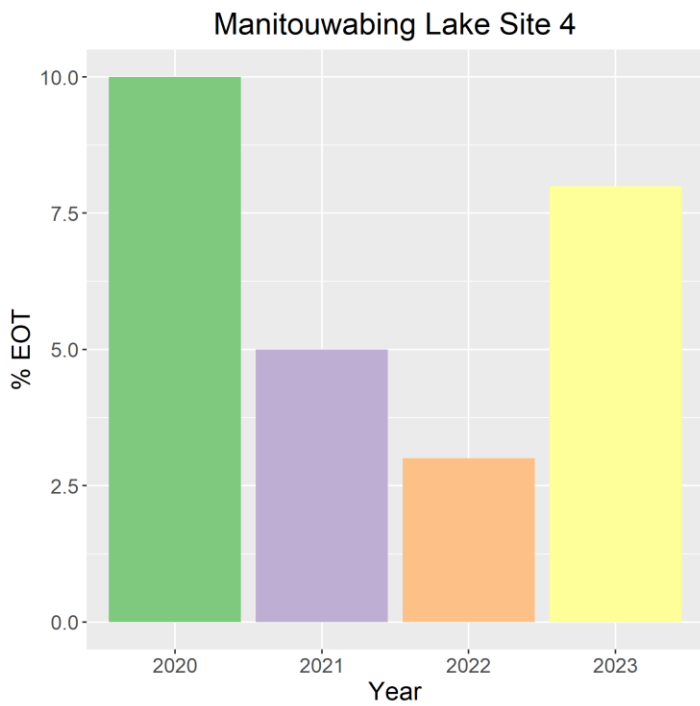


Figure 30. %EOT and the number of taxonomic groups for Site 4 on Manitouwabing Lake from 2020 to 2023.

Appendix C. Manitowabing Lake State of the Basin Review 2018

Manitowabing Lake State of the Basin Review 2018



Killian

Prepared for: Manitowabing Lake Community

Association By: Clark, October 2018

Contents

Manitouwabing Lake – State of the Basin Review	3
Overview	3
Watershed Influence.....	3
Water Quality.....	4
Total Phosphorus	4
Dissolved Organic Carbon	8
Algal Blooms.....	10
Dissolved Oxygen	11
Bacteria	12
Invasive Species	13
Recommendations	14
Appendix	15

Manitouwabing Lake – State of the Basin Review

Overview

Manitouwabing Lake is a large important resource in McKellar Township north west of Parry Sound (Lat, 45.452 Long, 79.904). General Lake characteristics are shown in Table 1.

Table 1 – General characteristics of Manitouwabing Lake. Data from OMNR and MOECP.

Area	1178 ha
Volume	6597 x 10 ⁴ m ³
Max Depth	33 m
Mean depth	5.6 m
Watershed Area	400 km ²
Clarity (Secchi depth)	2.4 m
Runoff	0.464 m
Trophic status	mesotrophic

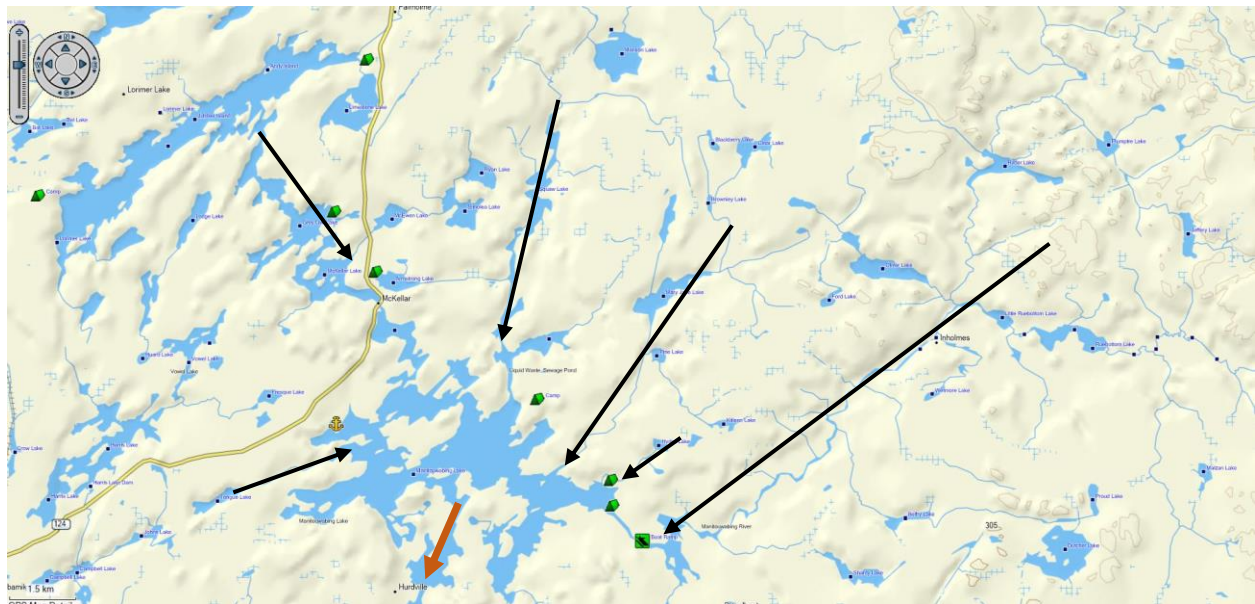
Despite its importance, Manitouwabing Lake and other lakes in the area have not been studied in detail or well characterized with respect to many aspects of water quality. Nevertheless, the data that have been collected to this date allow us to conduct a preliminary assessment of the lake and its watershed and then go forward to make recommendations regarding future steps.

Watershed Influence

Manitouwabing Lake collects water from a large watershed through numerous inflows including the Manitouwabing River (Figure 1). These inflows mix within the lake and exit through the outflow at the south end of the lake. This outflow winds its way to Parry Sound through the Seguin River and ultimately into Georgian Bay.

A large watershed will increase the flushing rate for a lake and give the lake water quality characteristics that are driven by watershed processes more so than by local influences. Using the data in Table 1 we can calculate that the water in the lake is replaced 2.8 times per year or approximately every 4 months. This replacement rate will be, of course, higher during the spring and lower during drier months. Water quality measured in the lake near major inflows will have characteristics similar to those of the inflow and if the watershed characteristics are similar between inflows then this will lead to similar water quality throughout the lake. This is an important consideration because measured water quality is similar for several key parameters throughout Manitouwabing Lake which would indicate similar watershed characteristics for the major inflows to the lake.

Figure 1 – The Manitouwabing watershed showing several major inflows (black arrows) and the outflow to Georgian Bay (brown arrow).



Water Quality

Total Phosphorus

The most revealing characteristic of Manitouwabing Lake (total phosphorus) has been measured by volunteers through the Ministry of the Environment's Lake Partner Program (LPP). Phosphorus is the element that controls the production of algae and, in fact, most of the other organisms that reside in the lake. Lower phosphorus concentrations indicate lower productivity and are generally typical of dilute, gin clear, lake trout lakes. Higher concentrations are found in more productive lakes with more fish, more weeds and more algae. When concentrations of phosphorus are high enough to exacerbate nuisance algal blooms there can be concerns about water quality as a result of toxins that can be produced by bluegreen algae (cyanobacteria). Blooms of this nature are generally rare in Ontario.

Volunteers participating in the LPP have collected total phosphorus data at numerous locations throughout Manitouwabing Lake (Figure 2). The concentrations observed are very similar from place to place in the lake (Table 1 and Figure 3). This indicates that the watershed has a strong influence on the concentration of phosphorus in the lake (through a high flushing rate) which likely obscures any local influences that may occur within the lakes many embayments.

Figure 2 – Lake Partner Program sample sites in Manitouwabing Lake.

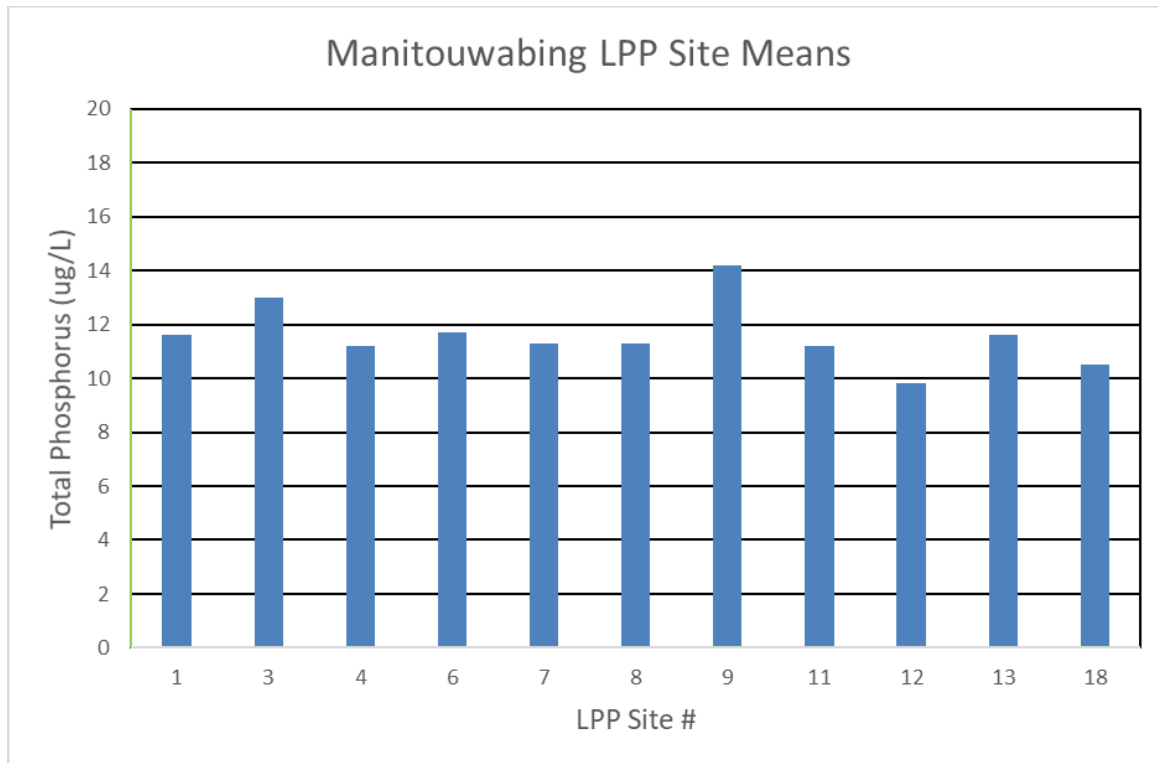


Table 1 – Mean total phosphorus concentrations at Lake Partner Program sample sites throughout Manitouwabing Lake.

Site	Lat.	Long.	Mean TP	Status
1	452845	795344	11.6	
3	452748	795302	13	
4	453020	795512	11.2	
6	452837	795413	11.7	current
7	452901	795538	11.3	
8	452810	795500	11.3	current
9	452822	795244	13.8	current
11	452917	795443	11.2	
12	452856	795253	9.8	
13	452713	795326	11.6	current
18	453008	795455	12.6	current
19	453019	795512	11.2	current
20	452901	795538	7.7	current
21	452932	795504	12.7	current
22	452959	795249	11.2	current
		Mean	11.5	

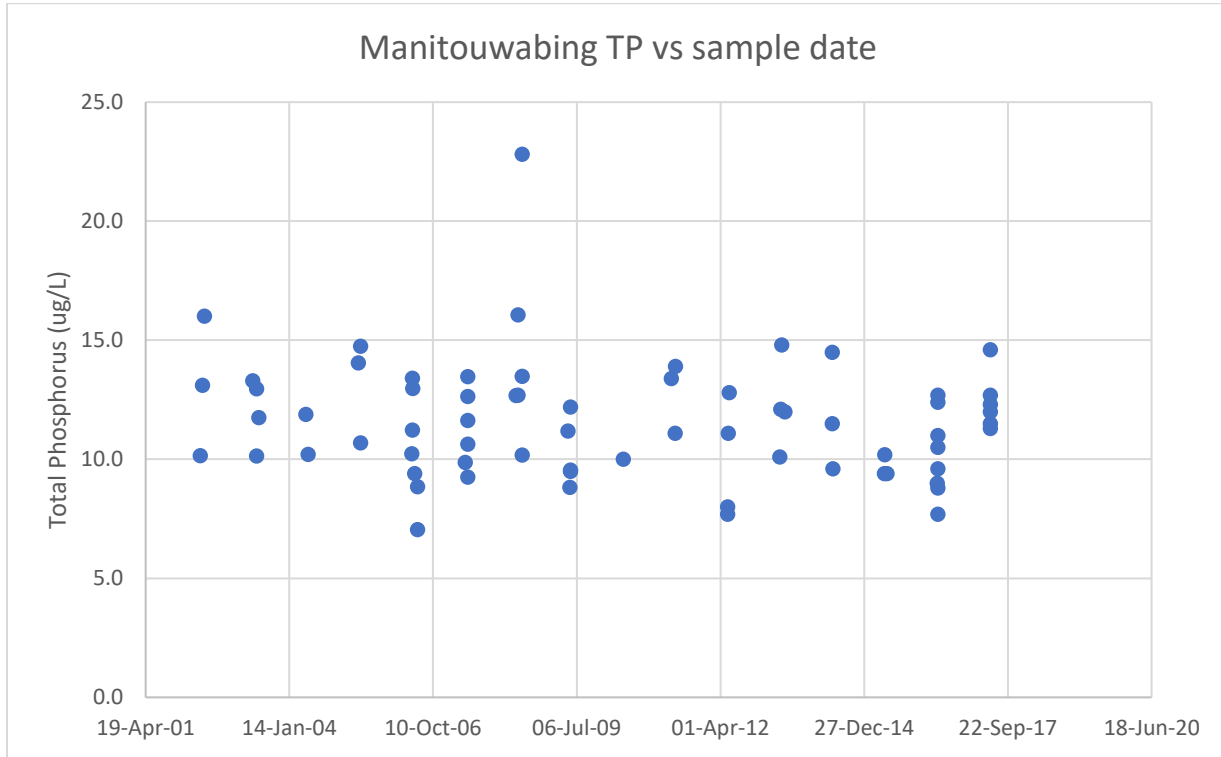
The lakewide mean total phosphorus concentration is 11.5 µg/L. This indicates that Manitouwabing Lake is at the lower end of the mesotrophic range. Lakes that are below 10 µg/L are considered to be oligotrophic (clear dilute and unproductive). Mesotrophic lakes (10-20 µg/L) are in the middle of this trophic classification and these lakes show considerable variation in productivity between the low end of the scale at 10 µg/L and the high end of the scale at 20 µg/L. Lakes over 20 µg/L are considered to be eutrophic with more chance of supporting nuisance algal blooms. Lakes at the lower end of the mesotrophic scale like Manitouwabing will share characteristics more like oligotrophic lakes while lakes at the high end of the scale (closer to 20) will begin to share characteristics of eutrophic lakes.

Figure 3 – Mean total phosphorus concentrations in Manitouwabing Lake at the LPP sample sites



The bottom line with respect to phosphorus is that concentrations are similar throughout the lake and consistent between years (Figure 4). Figure 4 shows that phosphorus concentrations have not increased since 2001 and are similar between sample stations (see Appendix). It is important to note that the range in observed values (approx 10-15 µg/L) is normal for multiple stations over time. These values indicate a lake that is highly influenced by its watershed with no sign of deterioration over the years in water quality with respect to phosphorus.

Figure 4 – Total phosphorus measured by the Lake Partner Program at the locations and dates shown in Appendix 1. Two points considered to be outliers were eliminated. The one datapoint above 20 µg/L is also likely an outlier but duplicate samples were in agreement so the data were retained.



It is important to recognise that human phosphorus inputs to the lake are possible through the operation of failing or inadequate septic systems. It is also possible to add nutrients through the unwise use of shoreline areas that border the lake (riparian areas). Harmful land use practices include the removal of natural shoreline vegetation, proliferation of lawns, use of fertilizers, etc. Education of property owners with respect to these issues can protect the ecosystem integrity of the lake.

Guidance for sustainably living by water is available from many sources.

<http://naturecanada.ca/living-by-water/>

Dissolved Organic Carbon

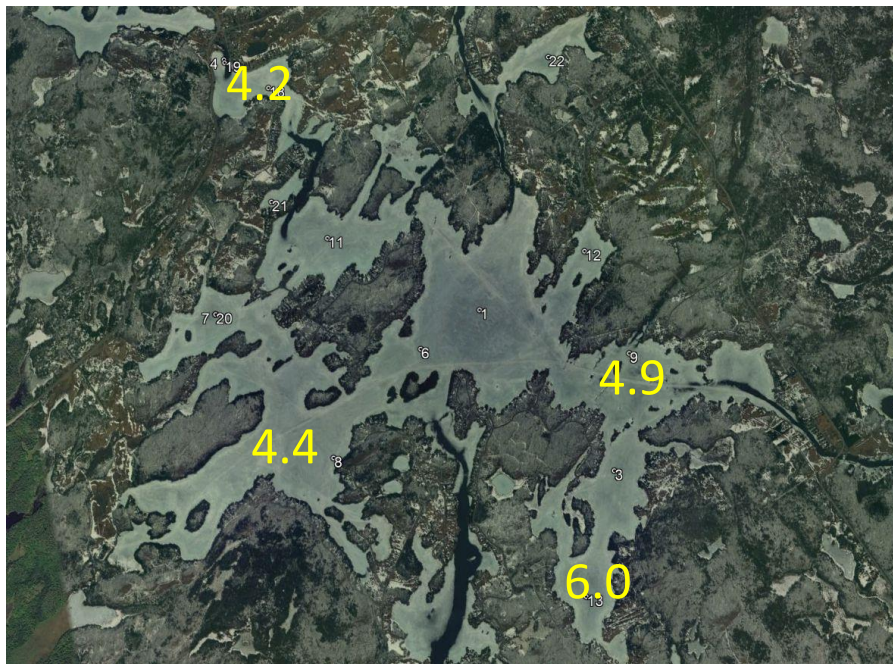
While Manitouwabing Lake is considered to be a mesotrophic lake we can see that much of this phosphorus has its origins in the watershed and is transported to the lake as Dissolved Organic Carbon (DOC) which originates in wetlands. This is the material that causes tea stained water in lakes. In other words it's mesotrophic status is not likely the result of human activity in the watershed but rather the result of export of DOC from wetlands. Concentrations throughout the lake are relatively similar (4.2-6.0 mg/L) with slightly more tea stained water in the south east areas of the lake. This relatively narrow range in DOC values throughout the lake indicates similar wetland conditions throughout the different subwatersheds.

DOC concentrations measured by the LPP are shown in Table 2. Sample Locations are shown in Figure 5.

Table 2 – Dissolved organic carbon concentrations measured by the LPP.

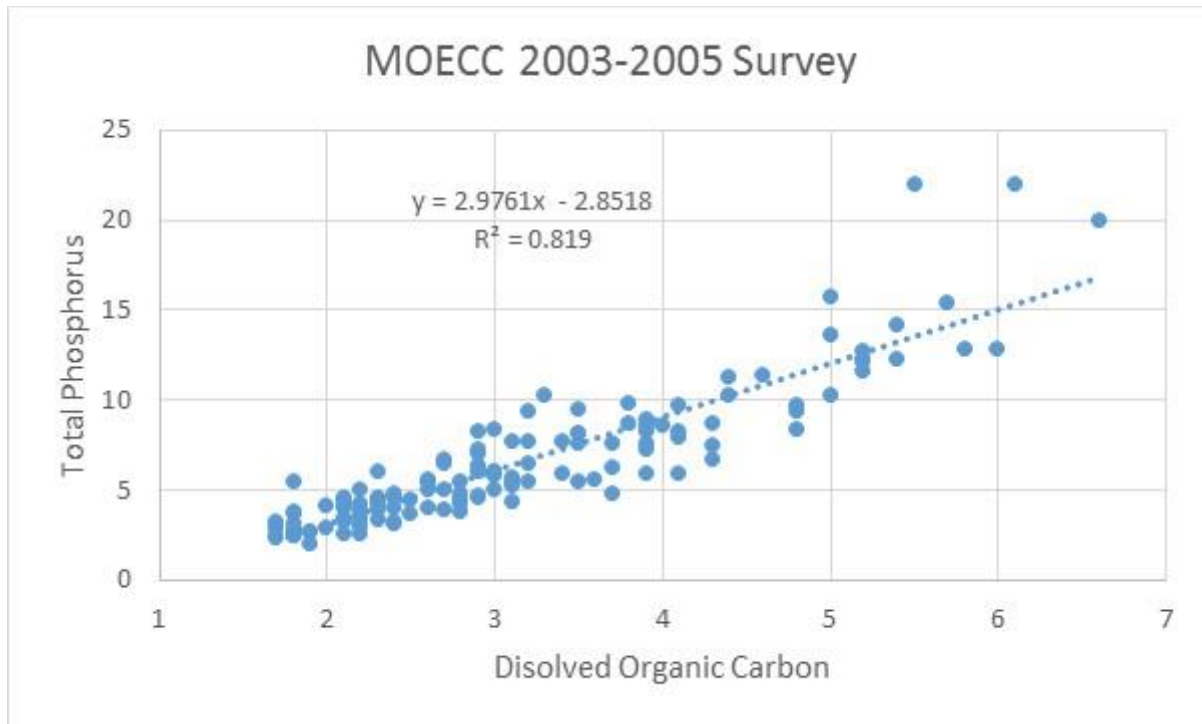
LDESC	LP_STN	SITE	DATE	DOC (mg/L)
MANITOUWABING LAKE-18	2973	18	5/18/2018	4.2
MANITOUWABING LAKE-19	2973	19	5/24/2018	4.1
MANITOUWABING-9	2973	9	5/24/2018	4.9
MANITOUWABING-13	2973	13	5/24/2018	6.0
MANITOUWABING LAKE-8	2973	8	5/20/2018	4.4

Figure 5. DOC concentrations (mg/L) throughout Manitouwabing Lake shown in yellow.



In Figure 6 we can see the relationship between DOC and TP measured by The Ministry of the Environment Conservation and Parks (MOECP) at numerous locations in the nearshore areas of Georgian Bay. The close relationship shows that most of the phosphorus in these areas is associated with DOC. In other words, the phosphorus has its origins in wetlands throughout the watershed.

Figure 6 – The relationship between DOC and phosphorus in nearshore areas of Georgian Bay.



If we consider that Manitouwabing Lake’s mean DOC concentration is 4.7 mg/L this corresponds to 11.1 µg/L total phosphorus on the graph in Figure 6. This indicates that most of the 11.5 µg/L TP in Manitouwabing Lake has its origins as DOC in watershed’s wetland complexes.

Algal Blooms

Algal blooms can occur for several reasons. Most often they are caused by elevated phosphorus concentrations. Blooms are rare below 10µg/L and become more likely as concentrations approach 20 µg/L. The Provincial Water Quality Objectives recommend maintaining concentrations below 20 µg/L to avoid nuisance algal blooms. Blooms can also be exacerbated by aspects of climate change such that they may now occur in areas where they have previously been absent. Finally, a species of algae called *Gloeotrichia* can bloom in low phosphorus lakes because it derives its nutrients from the sediments rather than from the water.

Manitouwabing Lake is not expected to support algal blooms. It is important to note that if you see a cloudy ball of filamentous algae near the bottom of the lake in a nearshore area – this is not an algal bloom. In addition, sometimes when algae die in the main lake they can be blown by the wind and concentrated into nearshore areas and these occurrences are usually not indicative of algal blooms. Algal blooms are usually indicated by large quantities of bright green cells in the water that cover extensive areas (see photo below).

If you think that an algal bloom is occurring the correct response is to call the MOECP Spills Action Centre.

Spill Reporting 1-800-268-6060

They will then investigate the bloom and call the Ministry of Health if a bloom is confirmed. They will also sample the bloom to confirm the species and will test for the presence of toxins. There is no reason to test for toxins without first following the steps indicated above.



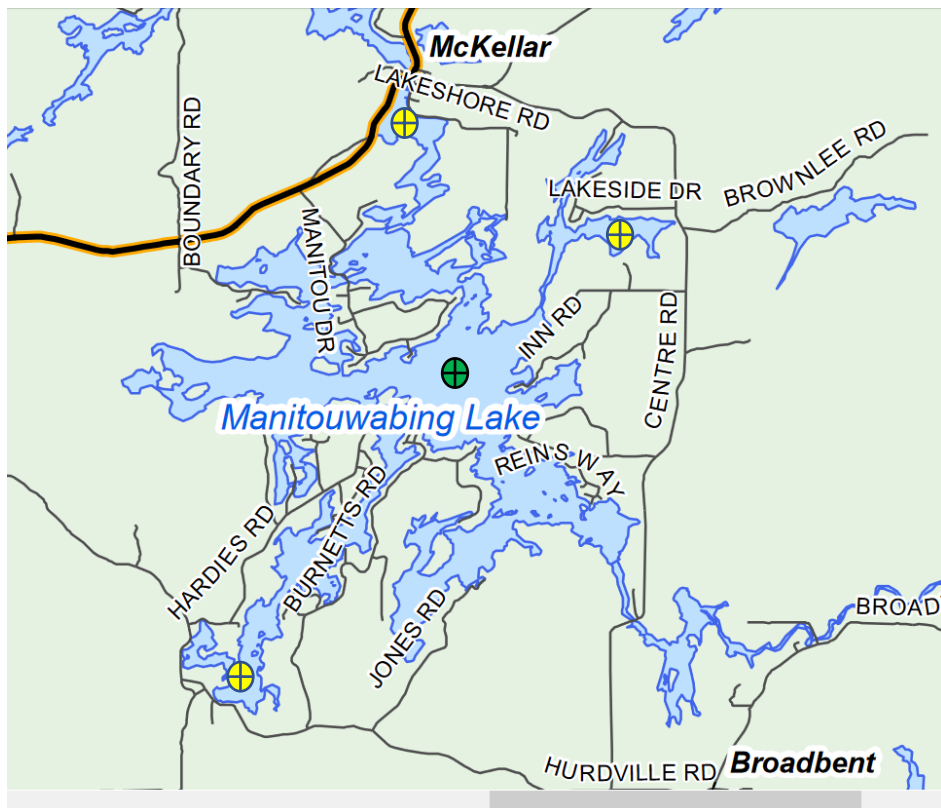
A severe blue green algal bloom.

Dissolved Oxygen

In areas where the bottom waters have their oxygen concentrations reduced to below 1mg/L (this is called anoxia) in late summer there can be phosphorus released from the sediments into the bottom waters. In some cases, this phosphorus can be available to support algal blooms in the mixed, warmer surface water. For this reason, there is merit to measuring dissolved oxygen profiles in the lake for those areas that are deep enough to stratify (the process where warm surface water cannot mix with cold bottom water). In most cases the water needs to be about 7-8 m deep or deeper before this can occur. Shallower areas mix completely to the bottom. In stratified areas, the cold bottom water cannot have its oxygen replenished from the surface such that when oxygen is consumed by bacteria the loss of oxygen cannot be reversed until the lake turns over again in the fall. Under these circumstances there may be phosphorus that enters the cold bottom water from the sediments. If this phosphorus ends up being entrained into the warmer surface water in sufficient quantities, it can help to support algal blooms under the right conditions.

Areas in Manitouwabing where this may occur are shown in yellow on the map below and these areas could be assessed with oxygen/temperature profiles on or 14 days either side of Sept 01. Any additional areas that may stratify could be confirmed in the initial years of monitoring.

Map showing the deepest location (green) and isolated bays that are likely to stratify in yellow (from MLCA).



Bacteria

Volunteers have been collecting bacteria data in many areas throughout Manitouwabing Lake for several years. The data available on the MLCA website has been summarized in Table 3.

Bacteria data are difficult to interpret. There are conclusions that can be drawn by examination of the data in Table 3, but there are also many aspects of bacteria in lake water that cannot be deduced from these data. Generally, these data show that about 5% of the samples are over 100 counts which is the guideline for recreational use. This indicates that the water is swimmable in most areas 95 % of the time. These results are normal for areas where there are no sewage treatment plants or large stormwater discharges.

What these data cannot tell us is:

1. how long the counts were over 100 in a given area,
2. the area or extent to which the >100 count result applies, and most importantly,
3. the source of the bacteria (human or otherwise).

Table 3. Number of samples taken at each site with the number of samples over 100 counts.

Sector		Site												Sum	%>100
		1	2	3	4	5	6	7	8	9	10	11	12		
McKellar/grey Owl	# samples	11	8	15	11	9	11	8	8	11	10	1	1	104	
	# 100 or >	1	0	2	1	1	1	0	0	1	0	0	0	7	7
McKellar	# samples	36	43	30	42	30	4	2	3		12	1	1	204	
	# 100 or >	2	1	0	4	0	4	0	0		3	0	0	14	7
Middle River	# samples	20	35	31	32	33	20	7	4	4	4	0	0	190	
	# 100 or >	0	3	0	1	0	0	0	0	0	0			4	2
Maplewood	# samples	40	28	28	26	23	30	25	31	4	1	0	4	240	
	# 100 or >	5	1	1	0	0	1	0	2	0	0		1	11	5
Tait's Is	# samples	26	30	20	8	3	0	1	21	26	22	25	28	210	
	# 100 or >	2	2	0	1	0		0	0	1	0	0	1	7	3
Manitou Camp	# samples	29	19	23	0	0	0	0	1	0	0	0	0	72	
	# 100 or >	3	0	0					0					3	4
Lona	# samples	28	31	22	26	24	30	42	1	3	0	1	2	210	
	# 100 or >	1	0	1	0	2	1	9	0	0		0	0	14	7
Smith Pine	# samples	22	45	23	27	22	35	28	37	11	12	1	4	267	
	# 100 or >	1	5	0	0	0	4	0	3	1	2	0	0	16	6
Bailey	# samples	33	37	47	31	5	3	5	1	4	2	0	0	168	
	# 100 or >	0	2	4	0	1	0	1	0	0	0			8	5
Average 5% are 100 or greater															

Invasive Species

The presence of invasive species is not technically a water quality issue but certain invasive species can cause changes in water quality. Mussels, for example, can cause water clarity to increase. In almost every case the invading species will cause changes to the ecosystem's integrity. It is therefore important to avoid the spread of invasive species where possible.

A complete review of the invasive species present or the potential for invasion by numerous species is not possible within the scope of this review. There are, however, many useful resources that can be used to identify invasive species and cautions that can be applied to limit unwanted invasions.

It is important to remember that some invasions of terrestrial vegetation can also have impacts on aquatic ecosystems.

Further Information:

<https://foca.on.ca/aquatic-invasive-species-program/>

<http://www.invadingspecies.com/>

<https://www.ontarioinvasiveplants.ca/invasive-plants/species/>

[https://www.ontario.ca/page/stop-spread-invasive-species?_escaped_fragment_="/a>](https://www.ontario.ca/page/stop-spread-invasive-species?_escaped_fragment_=)

Recommendations

1. Several central locations (LPP Site #11, 1 and 3) and possibly one new location near the outflow be monitored by LPP volunteers with an effort to maintain a long-term monitoring record. Some of these sites may or may not be currently sampled (see Table 1). Long-term monitoring records are important to assess the effect of external drivers on the nutrient status of the lake.

2. The efforts used to collect bacteria data could be directed at other issues such as:

- education towards aspects of nearshore (shoreline) management.
- useful inventories such as areas where aquatic plants grow to assess whether the extent of plant beds are changing.
- long-term records of water levels and/or temperature.

3. Late summer monitoring of dissolved oxygen in the deepest location and in isolated bays where the depths are greater than 7-8m may provide additional information to address the potential for algal blooms. After areas are identified as having the oxygen depleted at the bottom (with measured oxygen profiles) in year 1, there can be samples taken 1 meter from the bottom in subsequent years to assess whether or not there are elevated phosphorus concentrations in the bottom water.

4. All efforts should be made to ensure that invasive species do not enter the watershed. There are many organizations that provide guidance on invading species, e.g. The Federation of Ontario Cottagers' Associations. <https://foca.on.ca/aquatic-invasive-species-program/>



Killian

Appendix

Site	Description	Lat	Long	Date	TP1	TP2	Mean (ug/L)	Site Mean
1	Great Bay	452845	795344	20-May-02	12.7	13.5	13.1	11.6
1	Great Bay	452845	795344	31-May-03	10.2	10.1	10.1	
3	Longhorn & James Bay	452748	795302	20-May-02	24.3	36.6		13
3	Longhorn & James Bay	452748	795302	31-May-03	12.4	13.5	13.0	
4	McKellar, near dock	453020	795512	20-May-02	51.1	44.8		11.2
4	McKellar, near dock	453020	795512	20-May-06	14.0	12.9	13.4	
4	McKellar, near dock	453020	795512	08-Jun-07	11.5	11.7	11.6	
4	McKellar, near dock	453020	795512	22-Jun-08	10.1	10.3	10.2	
4	McKellar, near dock	453020	795512	24-May-09	9.5	9.6	9.6	
6	L Tait's Is-Great Bay	452837	795413	02-Jun-02	18.7	13.3	16.0	11.7
6	L Tait's Is-Great Bay	452837	795413	15-Jun-03	11.4	12.1	11.8	
6	L Tait's Is-Great Bay	452837	795413	23-May-04	9.2	11.2	10.2	
6	L Tait's Is-Great Bay	452837	795413	23-May-05	10.5	10.9	10.7	
6	L Tait's Is-Great Bay	452837	795413	24-Jun-06	7.1	7.0	7.1	
6	L Tait's Is-Great Bay	452837	795413	22-Jun-08	24.2	21.5	22.8	
6	L Tait's Is-Great Bay	452837	795413	18-May-09	9.4	8.3	8.8	
6	L Tait's Is-Great Bay	452837	795413	22-May-11	11.0	11.2	11.1	
6	L Tait's Is-Great Bay	452837	795413	20-May-12	7.8	8.2	8.0	
6	L Tait's Is-Great Bay	452837	795413	19-May-13	10.0	10.2	10.1	
6	L Tait's Is-Great Bay	452837	795413	19-May-14	13.8	15.2	14.5	
6	L Tait's Is-Great Bay	452837	795413	17-May-15	9.4	9.4	9.4	
7	N / W Tait's Island	452901	795538	20-May-06	10.2	12.3	11.2	11.3
7	N / W Tait's Island	452901	795538	08-Jun-07	9.2	9.3	9.3	
7	N / W Tait's Island	452901	795538	22-Jun-08	12.6	14.3	13.5	
8	West of Maplewood	452810	795500	05-May-02	9.7	10.6	10.2	11.3
8	West of Maplewood	452810	795500	04-May-03	13.2	13.4	13.3	
8	West of Maplewood	452810	795500	08-May-04	12.2	11.6	11.9	
8	West of Maplewood	452810	795500	07-May-05	16.5	11.6	14.1	
8	West of Maplewood	452810	795500	14-May-06	10.0	10.4	10.2	
8	West of Maplewood	452810	795500	21-May-07	10.5	9.3	9.9	
8	West of Maplewood	452810	795500	11-May-08	13.0	12.4	12.7	
8	West of Maplewood	452810	795500	05-May-09	11.6	10.8	11.2	
8	West of Maplewood	452810	795500	27-May-10	9.6	10.4	10.0	
8	West of Maplewood	452810	795500	24-Apr-11	14.0	12.8	13.4	
8	West of Maplewood	452810	795500	22-May-12	7.8	7.6	7.7	
8	West of Maplewood	452810	795500	01-Jun-13	13.2	16.4	14.8	
8	West of Maplewood	452810	795500	18-May-14	11.6	11.4	11.5	
8	West of Maplewood	452810	795500	05-Jun-15	9.2	9.6	9.4	
8	West of Maplewood	452810	795500	19-May-16	9.2	8.8	9.0	
8	West of Maplewood	452810	795500	23-May-17	13.8	10.2	12.0	
9	E of Longhorn,Hardie's Cr	452822	795244	24-May-05	15.0	14.5	14.7	13.8
9	E of Longhorn,Hardie's Cr	452822	795244	08-Jun-07	14.2	12.8	13.5	
9	E of Longhorn,Hardie's Cr	452822	795244	23-May-08	16.9	15.2	16.1	
9	E of Longhorn,Hardie's Cr	452822	795244	23-May-16	12.6	12.2	12.4	
9	E of Longhorn,Hardie's Cr	452822	795244	23-May-17	13.0	11.6	12.3	
11	N Tait's Is.	452917	795443	24-Jun-06	9.2	8.5	8.8	11.2
11	N Tait's Is.	452917	795443	31-May-12	13.4	12.2	12.8	
11	N Tait's Is.	452917	795443	26-May-13	13.2	11.0	12.1	
12	Manitouwabing(golf cs.)Bay	452856	795253	04-Jun-06	9.1	9.7	9.4	9.8
12	Manitouwabing(golf cs.)Bay	452856	795253	08-Jun-07	11.0	10.3	10.6	
12	Manitouwabing(golf cs.)Bay	452856	795253	23-May-09	9.2	9.8	9.5	
13	Jones Bay	452713	795326	21-May-06	13.4	12.5	13.0	11.6
13	Jones Bay	452713	795326	08-Jun-07	13.1	12.2	12.6	
13	Jones Bay	452713	795326	23-May-08	13.3	12.1	12.7	
13	Jones Bay	452713	795326	24-May-09	12.7	11.7	12.2	
13	Jones Bay	452713	795326	24-May-11	13.0	14.8	13.9	
13	Jones Bay	452713	795326	26-May-12	11.2	11.0	11.1	
13	Jones Bay	452713	795326	23-Jun-13	12.0	12.0	12.0	
13	Jones Bay	452713	795326	24-May-14	9.4	9.8	9.6	
13	Jones Bay	452713	795326	19-May-15	11.0	9.4	10.2	
13	Jones Bay	452713	795326	23-May-16	8.8	8.8	8.8	
13	Jones Bay	452713	795326	23-May-17	11.8	11.2	11.5	
18	McKellar Bay	453008	795455	24-May-16	10.4	10.6	10.5	12.6
18	McKellar Bay	453008	795455	23-May-17	14.0	15.2	14.6	
19	McKellar, near dock	453019	795512	24-May-16	11.2	10.8	11.0	11.2
19	McKellar, near dock	453019	795512	23-May-17	11.4	11.2	11.3	
20	South of Fire RTE 150 Basin	452901	795538	23-May-16	7.8	7.6	7.7	7.7
21	Moffat Basin, Deep spot	452932	795504	23-May-16	12.6	12.8	12.7	12.7
22	Basin South of Lakeside Dr.	452959	795249	24-May-16	9.2	10.0	9.6	11.2
22	Basin South of Lakeside Dr.	452959	795249	23-May-17	12.6	12.8	12.7	
				Average				11.5

Thank You Miigwech

The Georgian Bay Mnidoo Gamii Biosphere (GBB) is an inclusive and dynamic organization that builds capacity for regional sustainability in eastern Georgian Bay.

The GBB is a non-profit registered Canadian charity governed by a Board of Directors.

For more information, please visit:
georgianbaybiosphere.com

info@georgianbaybiosphere.com
705-774-0978
125 William St.
Parry Sound ON,
P2A 1V9

CORPORATION OF THE TOWNSHIP OF MCKELLAR

BY-LAW NO. 2023-66

Being a By-law to Regulate the Speed of Motor Vehicles on Certain Highways within the Municipality

WHEREAS subsection 2 and 3 of section 128 of the Highway Traffic Act, R.S.O. 1990, Chapter H.8, provides that the Council of a municipality may by by-law prescribe a speed limit of that is not greater than 100 kilometres per hour or motor vehicles driven on any highway or portion of highway under its jurisdiction;

AND WHEREAS it is deemed expedient that the speed of motor vehicles on certain highways in the Corporation of the Township of McKellar be restricted;

AND WHEREAS By-law 2003-13 be hereby repealed;

NOW THEREFORE the Council of the Corporation of the Township of McKellar enacts as follows:

1. When any highway or portion of highway set out below is marked in compliance with the regulations under the Highway Traffic Act, the maximum rate of speed thereon shall be **20 kilometres** per hour.

<u>HIGHWAY</u>	<u>FROM</u>	<u>TO</u>
Lakeshore Road	Catherine Street	South to Charlie’s Lane
Armstrong Street	Centre Road	Louisa Street
Catherine Street	Centre Road	Lakeshore Road
Genes Court	Manitou Drive	End
Harriett Street	Highway 124	Turtle Lane
Henry Street	Lakeshore Road	End
Louisa Street	Catherine Street	Armstrong Street
Marine Drive	Manitou Drive	End
Mary Street	Harriett Street	Catherine Street
North Point Road	Manitou Drive	End
Park Drive	Manitou Drive	End
Patterson Lane	Highway 124	Catherine Street
Sharon Park Drive	Highway 124	End
South Point Drive	Manitou Drive	End
West Road	Highway 124	McKellar Ferguson Boundary Road

2. When any highway or portion of highway set out below is marked in compliance with the regulations under the Highway Traffic Act, the maximum rate of speed thereon shall be **40 kilometres** per hour.

<u>HIGHWAY</u>	<u>FROM</u>	<u>TO</u>
Burnett’s Road	Hurdville Road	To and Including all Roads within Lots 26, 27, 28, Concession 6 and 7, commonly known as Smithpine Subdivision
Camp Road	Centre Road	West to Lot 24, Concession 8
Centre Road	King’s Highway #124	East to Balsam Road
Grey Owl Road	King’s Highway #124	West to Lot 31, Concession 14

Holly's Road	Centre Road	West to Elizabeth Avenue
Jones Road	Hurdville Road	North to Lot 26, Concession 5
Lakeside Drive	Centre Road	West to Lot 23, Concession 10
McKellar Lake Road	King's Highway #124	West to Lot 32, Concession 13
Middle River Drive	Centre Road	South to Lot 23, Concession 10
Rein's Way	Holly's Road	West to Lizzie's Lane
Spring Hill Road	King's Highway #124	North to King's Highway #124
Stewart Park Drive	Centre Road	North to Lot 22, Concession 5
Swan Boulevard	Balsam Road	South to Lot 18, Concession 13
Tait's Island Road	King's Highway #124	South to Moffat Road
The Inn Road	Camp Road	South to Lot 24, Concession 8
Hurdville Road	456 Hurdville Road	Con 3 & 4 PT Lot 34
Manitou Drive	Tait's Island Road	End
Swan Boulevard	Balsam Road	End
Ted Donnelly Road	McDougall Road	Hurdville Road

3. When any highway or portion of highway set out below is marked in compliance with the regulations under the Highway Traffic Act, the maximum rate of speed thereon shall be **50 kilometres** per hour.

HIGHWAY	FROM	TO
Balsam Road	Centre Road	East to Municipality of Whitestone Township Line, Lot 15, Concession 14
Blackwater Road	Hurdville Road	South to Seguin Township Line, Lot 17, Concession 1
Broadbent Road	Hurdville Road	East to Municipality of Magnetawan Township Line, Lot 1 Concession 6
Centre Road	Balsam Road	South to Hurdville Road, Lot 22, Concession 3
Hurdville Road	Con 3 & 4 Pt Lot 34	East to Broadbent Road

4. The penalties provided in subsection 14 of Section 128 of the Highway Traffic Act, R.S.O. 1990, shall apply to offences against this By-law.

READ a **FIRST** and **SECOND** time this th day of , 2023.

David Moore, Mayor

Ina Watkinson, Clerk/Administrator

READ a **THIRD** time and **PASSED** in **OPEN COUNCIL** this th day of , 2023.

David Moore, Mayor

Ina Watkinson, Clerk/Administrator

AMO Watchfile not displaying correctly? [View the online version](#)
Add Communicate@amo.on.ca to your safe list



August 31, 2023

In This Issue

- Municipal Information & Data Analysis System (MIDAS).
- Ontario Anti-Hate Security and Prevention Grant.
- Release of public information service.
- Municipal Cybersecurity 101 forum.
- FOI program automation: Save time and money with AMO's new partner.
- Cyber incident management in partnership with ISA Cybersecurity.
- Use Canoe pricing in your 2024 budget.
- Identify energy savings with energy treasure hunt.
- Training for elected officials on Boards of Health.
- Careers: Elgin County, Kitchener and Oakville.

AMO Matters

AMO is pleased to launch a refresh of the Municipal Information & Data Analysis System (MIDAS). MIDAS is a web-based tool that provides access to the Financial Information Returns (FIRs) to all Ontario municipalities. The FIR is the main data collection tool used by the Ministry of Municipal Affairs and Housing to collect financial and statistical information on municipalities. Ontario municipal elected officials and staff can contact MIDASAdmin@amo.on.ca for access.

Provincial Matters

The Ontario government is providing one-time grants of up to \$10,000 to ensure community spaces remain safe and secure from hate-motivated incidents. Applications are open for 2023-2024. The deadline is September 12, 2023.

The Technical Standards and Safety Authority (TSSA) is Ontario's public safety regulator. TSSA releases public information (e.g., licence statuses or devices at a location) per its privacy codes. Click here to request a release.

Eye on Events

It's back! AMO and MISA ON's joint Municipal Cybersecurity 101 Forum returns this fall in time for Cybersecurity Month. Join us virtually on October 12 from 10am to 2pm to learn more about building a cyber resilient municipality. Register today.

AMO is pleased to partner with Vayle to offer a cost-effective digital platform to streamline FOI program management, reduce costs, and mitigate compliance risks. Join us on September 14 at 12pm where we will provide a deeper dive into the latest digital offering.

LAS

ISA Cybersecurity was pleased to meet everyone in the exhibit hall at the 2023 AMO Conference. To learn more about the ISA Cybersecurity partnership with LAS, please contact Shannon Devane.

Are you planning to buy equipment in 2024? The [Canoe Procurement Group](#) provides quick and easy quotes for your budget. If you're ready to purchase, save the time of running your own RFP and buy direct from pre-approved vendors. Contact [Sarah](#) to learn more.

Town of Whitby recently completed an [LAS energy workshop & treasure hunt](#) at their Brooklin Community Centre, identifying tremendous energy savings opportunities. Join others planning the same and book your workshop for this fall. Contact [Christian Tham](#) today!

Municipal Wire*

aIPHa is offering two courses on Board of Health Governance and Social Determinants of Health for elected officials on Boards of Health. Pricing and more information are available [here](#).

Careers

[Chief Administrative Officer - Elgin County](#). Responsible for the strategic leadership and efficient delivery of all administrative and operational services. Please apply [via email](#) with a covering letter and resume by September 28.

[Chief of Staff - City of Kitchener](#). Lead a 4-person team responsible for supporting the Mayor and members of City Council in their community leadership roles. [Apply online](#) by September 6.

[Coordinator, Strategic Communications and Community Relations - City of Kitchener](#). Play a key role in constituency and community relations and communications. [Apply online](#) by September 15.

[Director, Culture and Entertainment - City of Kitchener](#). Oversee the development and implementation of strategic plans to support arts and artists, and attract major entertainment events. [Apply online](#) by September 13.

[Supervisor, Stores - Town of Oakville](#). Provide the planning, analysis, materials management, organization, and distribution of required goods and services. [Apply online](#) by September 5.

About AMO

AMO is a non-profit organization representing almost all of Ontario's 444 municipal governments. AMO supports strong and effective municipal government in Ontario and promotes the value of municipal government as a vital and essential component of Ontario's and Canada's political system. Follow [@AMOPolicy](#) on Twitter!

AMO Contacts

[AMO Watchfile](#) Tel: 416.971.9856

[Conferences/Events](#)

[Policy and Funding Programs](#)

[LAS Local Authority Services](#)

[MEPCO Municipal Employer Pension Centre of Ontario](#)

[ONE Investment](#)

[Media Inquiries](#)

[Municipal Wire, Career/Employment and Council Resolution Distributions](#)

AMO's Partners



[La version française](#)

August 2023

Important updates

Province-wide assessment update postponed



On August 16, the Ontario government filed a regulation to amend the *Assessment Act*, extending the postponement of a province-wide reassessment through the end of the 2021-2024

assessment cycle. This means that property assessments for the 2023 and 2024 property tax years will continue to be based on fully phased-in January 1, 2016 current values.

While we wait for a new assessment date, MPAC continues to maintain an inventory of all properties and account for changes that happen each year in every property sector across the province. The ongoing postponement does not change the work we do to maintain our extensive property database and annual assessment rolls.

The government also announced that it will conduct a review of Ontario's property assessment and taxation system. While MPAC is not responsible for setting tax rates or collecting property taxes, we welcome the opportunity to work with the Province to ensure the property assessment process is optimal for property owners and municipalities.

MPAC remains in a strong position to deliver the next province-wide reassessment due to the work that we undertake every day to keep property assessment records accurate and property market data current.

If you have any questions or concerns, please reach out to [your local Municipal and Stakeholder Relations Account Manager](#).



Supporting municipalities with the delivery of the Q2 New Assessment Forecast

Through the Q2 new assessment forecast update delivered to municipal partners at the end of July, MPAC has identified over \$41.5 billion in available new assessment across the province.

While this is a slight decrease from the Q1 New Assessment forecast which projected \$42 billion at the end of April, the change can be attributed to delays in residential and condo new construction occurring in some market areas where rising interest rates and higher material costs are impacting development timelines.

“Providing insight into anticipated growth offers municipalities essential information to anticipate revenue and support their budget and tax planning,” says Carm Lipsi, MPAC’s Vice-President, Valuation and Customer Relations and COO. “We are ahead of schedule in delivering the most up-to-date information and look forward to continuing to offer valuable services and other support to municipalities across the province.”

As of August 14, MPAC has captured \$27 billion of new assessment value in 2023, representing 65 per cent of the most recent annual forecast, and 90% of this new assessment was completed within one year of occupancy.

For questions about the new assessment forecasting process, reach out to your local MSR Account Manager.



New Building Permit Dashboard launches in Municipal Connect



We are pleased to announce that our new Building Permit Dashboard in Municipal Connect is now live.

Created exclusively for municipal staff members, Municipal Connect is your primary source for assessment data and information.

Designed to provide greater insight on new assessments, the new dashboard enables you to review all building permits MPAC has received from your municipality.

Within the Building Permit Dashboard, the 'overview' tab allows you to filter in-progress permit information by:

- Work Description
- Property Series
- Property Type

The 'overview' tab also includes information on the total number of permits closed this year and permit submissions. There are additional 'status' filters, allowing you to sort building permits by plans received, final and occupancy status.

The dashboard helps to improve transparency by providing a better understanding of the building permit's journey between your municipality and MPAC.

To familiarize yourself with the new dashboard, check out our [online tutorial](#) or reach out to [your local Account Manager](#) for an overview session.



MPAC's 2022 Post-Enumeration Report is now available

In 2022, MPAC delivered our final Preliminary List of Electors (PLE) to every municipality, District Social Services

Administration Board and electing school board in Ontario.

We are pleased to report that through the



combined efforts of municipalities, Elections Ontario and MPAC, with support from other stakeholders, the 2022 PLE grew by almost 1.2 million electors. This includes data coming from Elections Ontario following the June provincial elections, as well as voterlookup.ca, Elections Canada and regular updates to the MPAC database.

As we implement legislated changes that will transfer responsibility for the PLE to Elections Ontario in 2024, we would like to thank our Elections Working Group members for their support and insightful contributions to the 2022 enumeration process.

You can read more about our comprehensive enumeration strategy and our effort to support municipalities through the process in the full report [here](#).



Connecting at this year’s AMO Conference

MPAC was pleased to attend this year’s AMO Conference in London, Ontario, as both an exhibitor and presenter. Over 2,500 delegates from across the province joined together for the three day event, which featured more than 60 speakers, sessions and workshops and covered a broad scope of topics important to municipalities today.

For our annual MPAC update Nicole McNeill, President and Chief Administrative Officer was joined by Alan Spacek, Chair, MPAC Board of Directors and Carmelo Lipsi, Vice-President and Chief Operating Officer for a fulsome presentation. This well-attended session featured highlights of our recent work, details of our work to keep Ontario’s property database current, the tools we have to support property owners and municipalities, and some property insights.

Nicole McNeill and Carm Lipsi will be presenting MPAC's municipal update at our next webinar on September 7. Registration information can be found below.



[READ THE FULL STORY](#)

Upcoming webinar

MPAC's role in the property tax and assessment system – a municipal update

With the further postponement of a province-wide reassessment, MPAC continues to focus on supporting the evolving needs of municipalities and property owners by championing the modernization of our products and services.

Join MPAC's President and CAO, Nicole McNeill, and Vice-President and COO, Carmelo Lipsi, to hear our annual municipal update and learn more about:

- Our work to keep Ontario's property database current.
- Tools to empower property owners.
- Recent operational highlights and property insights.
- Our role in the property tax and assessment system.

There will be time provided for questions.

Date: Thursday, September 7, 2023

Time: 1:00 to 2:00 p.m. EDT

REGISTER NOW

To view recordings of all past webinars, visit mpac.ca or on our [YouTube Channel](#).

 **MPAC on the move**

Look for us in September and stop by to say hello!

- **September 6 to 8:** Ontario East Municipal Conference (OEMC), Ottawa
- **September 10 to 13:** Ontario Municipal Tax and Revenue Association (OMTRA), Niagara Falls
- **September 19 to 22:** Municipal Finance Officers Association (MFOA), Niagara Falls
- **September 19 to 23:** International Plowing Match (IPM), Bowling Green
- **September 24 to 27:** Ontario Building Officials Association (OBOA), Niagara Falls

We invite you to get to know us!

Every municipality has their own dedicated account management team at MPAC. They are the best resource for municipal staff and elected officials should your municipality have any questions related to MPAC and our work. Reach out to [your local Municipal and Stakeholder Relations Account Manager](#) with questions or to learn more.



Facebook



Twitter



LinkedIn



Youtube

This email was sent by intouch@mpac.ca to deputyclerk@mckellar.ca

August 2023

LABOURFOCUS

The Labour Market Group



IN THIS EDITION

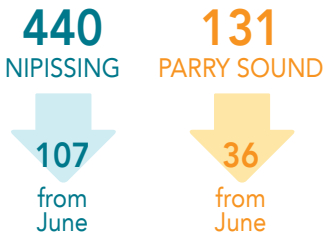
LABOUR FORCE GROWTH HAS BEEN TRENDING DOWNWARDS FOR DECADES

TRUCKING HR CANADA RELEASES LATEST LABOUR MARKET SNAPSHOT

FIVE TRENDS TO KNOW ABOUT TODAY'S MULTIGENERATIONAL WORKFORCE

JOBS REPORT JULY 2023

TOTAL NUMBER OF JOB POSTINGS



TOP INDUSTRY WITH VACANCIES

NIPISSING
Health Care & Social Assistance (21.4%)

PARRY SOUND
Retail Trade (30.5%)

To view the full report, visit our website www.thelabourmarketgroup.ca
readysethired.ca

T. 705.478.9713

150 First Ave. West
Suite 103, North Bay, ON
P1B 3B9

The Labour Market Group is funded by:



LABOUR FORCE GROWTH HAS BEEN TRENDING DOWNWARDS FOR DECADES: OUR AGING LABOUR FORCE AND LOW FERTILITY RATES HAVE CONTRIBUTED TO A LONG-TERM DECLINE

The chart below highlights this slow-moving trend over time. From the late 1970s through to the early 2000s, **baby boomers** and **women** of several generations entered the labour force, creating an era of ample labour supply.

THAT ERA IS OVER!

Female participation has plateaued.

Fertility rates have declined.

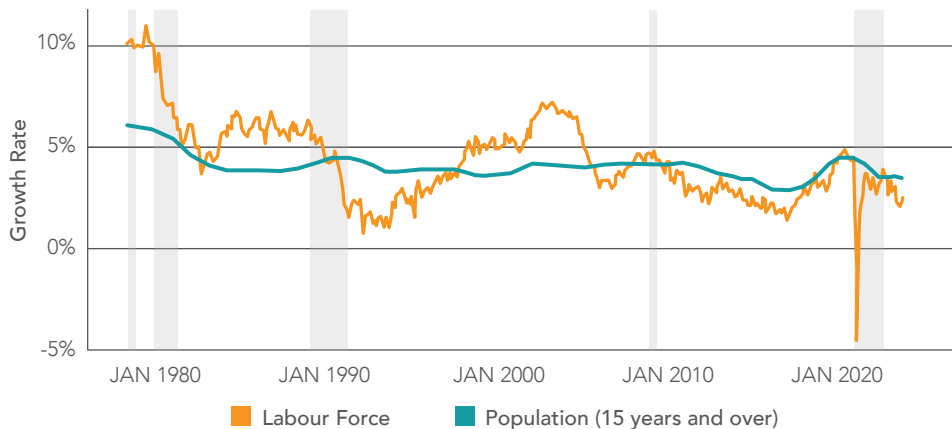


Baby Boomers are now retiring.



These factors are leaving us with a **smaller pool of workers** relative to the growing demand for goods and services.

CANADA: GROWTH RATE UP TO OCTOBER 2022, LABOUR FORCE AND POPULATION (15 YEARS AND OVER)



ON THE DEMAND SIDE

Labour market tightness is a strong incentive for businesses to innovate to boost productivity. Overall, a tighter labour market can benefit the economy, as well as workers — increasing their wages and bargaining power.

ON THE LABOUR SUPPLY SIDE



Increase the size and efficiency of the labour force by **boosting participation, population, and training.**



Increase participation through work **incentives or targeted supports** (e.i. tax breaks and subsidized childcare).



Increasing the population through **immigration or incentives for larger families.**



In terms of skills, **implement training schemes or target skilled immigration.**

Source: Statistics Canada

MORE FROM THE JULY JOBS REPORT:



TOP OCCUPATIONS

NISSING

Sales & Services (28.6%)

Education, Law & Social, Community & Gov (16.4%)

Trades, Transportation & Equipment Operators (15.9%)

PARRY SOUND

Sales & Services (42.7%)

Education, Law & Social, Community & Gov (18.3%)

Trades, Transportation & Equipment Operators (16%)

To view the full report, visit our website www.thelabourmarketgroup.ca readysethired.ca

Questions or concerns? Feel free to contact us at info@thelabourmarketgroup.ca



T. 705.478.9713

150 First Ave. West
Suite 103, North Bay, ON
P1B 3B9

The Labour Market Group is funded by:



TRUCKING HR CANADA RELEASES LATEST LABOUR MARKET DATA



The latest data shows the trucking and logistics industry may be headed back into a tighter labour market, especially for drivers. Here are some key findings from the report: Source: www.truckinghr.com/vacancyreport/2023

Employment in trucking and logistics



↓ **4.8%**
IN 2023

But employment **INCREASED** by **18,200** jobs in May.



Unemployment in trucking and logistics

↓ **4.6%**
IN MARCH

↓ **4.1%**
IN MAY



Employment among transport truck drivers

INCREASED steadily over the **first five months** of 2023.

Total employment of **305,000** by May.



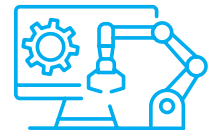
Unemployment among transport truck drivers

↑ **6.5%**
IN APRIL

DECREASED with **3,100** fewer job seekers in May.

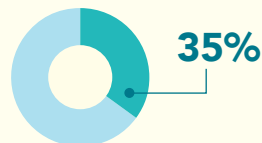


FIVE TRENDS TO KNOW ABOUT TODAY'S MULTIGENERATIONAL WORKFORCE



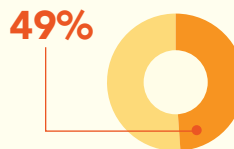
MONEY MATTERS MOST FOR MOST WORKERS

A competitive salary with regular merit increases has the **biggest** impact on job satisfaction and retention for **Millennials, Gen X and Gen Z**.



35% Gen X workers are most likely to feel underpaid.

Baby Boomers feel having a **positive team dynamic** as the most important factor of job satisfaction.



AI IS WEIGHING ON WORKERS' MINDS

73% Gen Z
68% Millennials
44% Gen X
33% Baby Boomers

That said, half or more **Gen Z, Gen X and Baby Boomers** are willing to reskill with their current employer if their job was at risk. **Millennials**, would prefer to look elsewhere.

CONTRACT WORK IS ATTRACTIVE TO YOUNGER PROFESSIONALS

Opportunities to take on a variety of assignments and work at different companies to build skills and connections more quickly.

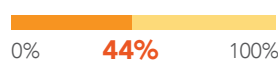
43%

Gen Z are most likely to transition from full-time work to full-time contract work.

8%

Baby Boomers are least likely.

GEN Z WANTS THE BEST OF BOTH WORLDS



More than **4 in 10** of **Gen Z** would prefer complete freedom to choose where and when to work.

At the same time, nearly **1 in 4** (23%) want more people to be in the office in the next few years.



DEAL BREAKERS ARE SIMILAR ACROSS ALL GENERATIONS

- A lack of salary transparency
- Unclear or unreasonable job responsibilities
- Poor communication with a hiring manager



Source: Statistics Canada

www.thelabourmarketgroup.ca

MONTHLY JOBS REPORT

JULY 2023

The Labour Market Group
Guiding partners to workforce solutions.

NIPISSING DISTRICT

There were 440 job postings recorded for Nipissing district in the month of July. For the fifth consecutive month this figure represented a notable-to-significant year-over-year decrease; -19.6% (-107) in job postings with July 2022 seeing 547 recorded job postings. The month-over-month change decrease of -25.4% (-150) is likely a combination of seasonal trends with summer positions winding down and economic downturn effects. 253 Unique employers posted jobs in July which is down in both the month-over-month (-11.8% / -34) and year-over-year (-12.2% / -35) comparable.



OF THE 440 JOB POSTINGS



100%
Collected from online sources.



10.2%
(45) Requiring a bilingual individual.

17.5%
(77) Criminal Record Check



For postings that listed an annual salary.



\$66,101.58/year
AVERAGE



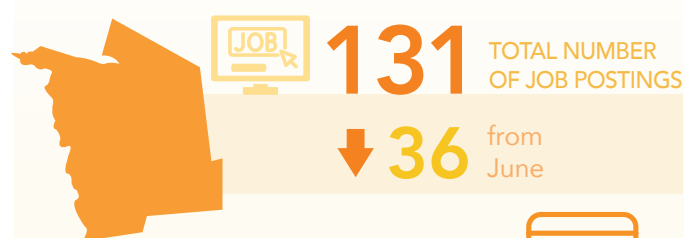
\$22.76
HOURLY WAGE

The average hourly wage in July for those postings which listed one.

Of the 148 postings which listed an hourly wage 14.2% (21) were listed at the provincial minimum wage of \$15.50/hour.

PARRY SOUND DISTRICT

There were 131 job postings recorded for the Parry Sound district in the month of July. This figure is significantly below; -21.6% (-36), the previous month's total of 167 postings as well being significantly below; -26.4% (-47), July 2022 when there were 178 recorded job postings. This year-over-year drop makes July the fifth consecutive month with such a result. This continues to add to the indication of a possible economic downturn. 76 Unique employers posted jobs in July which is notably below; -20% (-19), June's total of 95 and the July 2022 figure of 196.



OF THE 131 JOB POSTINGS



100%
Collected from online sources.



1.5%
(2) Requiring a bilingual individual.

10.7%
(14) Criminal Record Check



For postings that listed an annual salary.



\$52,491.67/year
AVERAGE

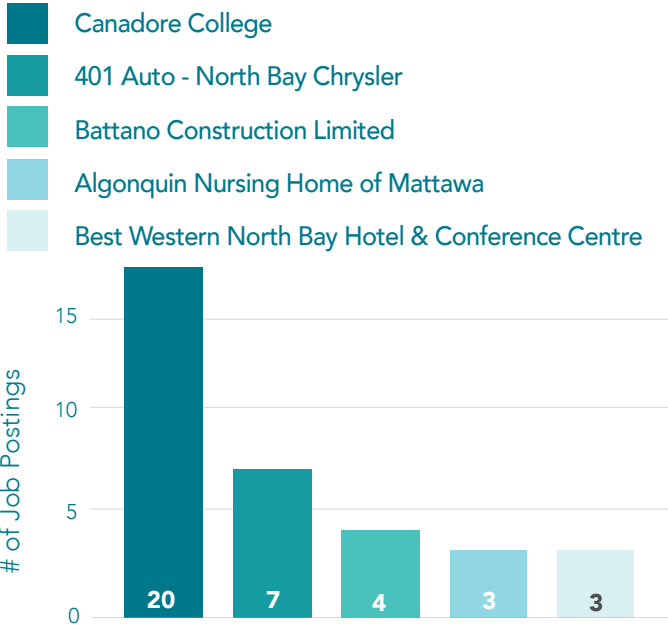


\$21.94
HOURLY WAGE

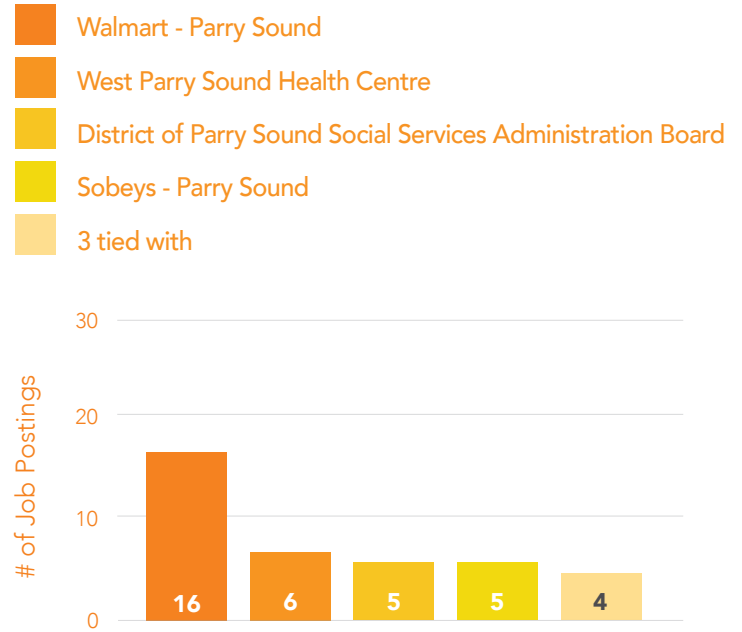
The average hourly wage in July for those postings which listed one.

Of the 52 postings which listed an hourly wage 3.8% (2) were listed at the provincial minimum wage of \$15.50/hour.

TOP 5 EMPLOYERS POSTING JOBS



TOP 5 EMPLOYERS POSTING JOBS



TOP 5 INDUSTRIES HIRING (NAICS)



- 2** 14.1% : Retail Trade (NAIC 44-45)
- 3** 10.5% : Educational Services (NAICS 61)
- 4** 8% : Accommodation & Food Services (NAICS 72)
- 5** 6.8% : Construction (NAICS 23)

The Health Care and Social Assistance (NAICS-62) industry saw the greatest number of job postings in July with 21.4% (94) of the overall share each amongst all major industry classifications. This figure does however represent the largest month-over-month decrease of -3.7%. The largest month-over-month increase in posting share of +3% occurred within the Public Service (NAICS-91) industry; representing 5.9% (26) of the July postings.

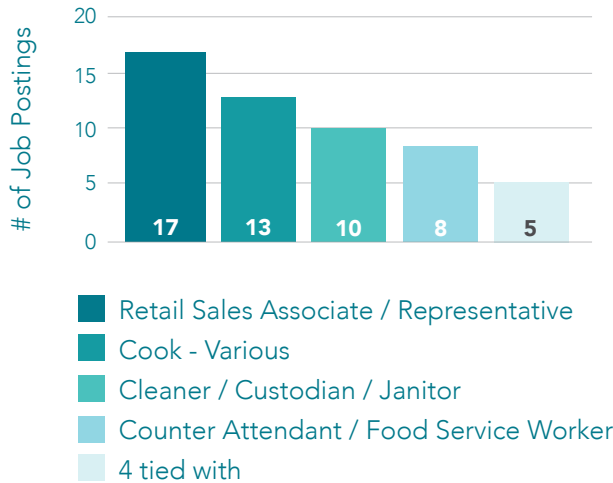
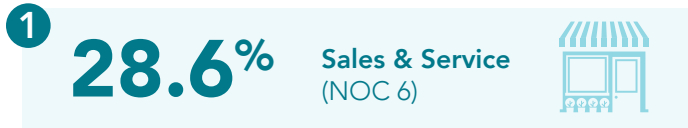
TOP 5 INDUSTRIES HIRING (NAICS)



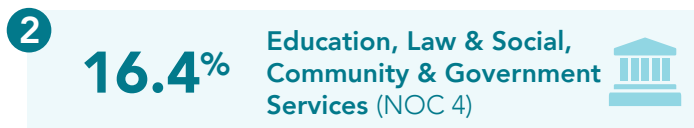
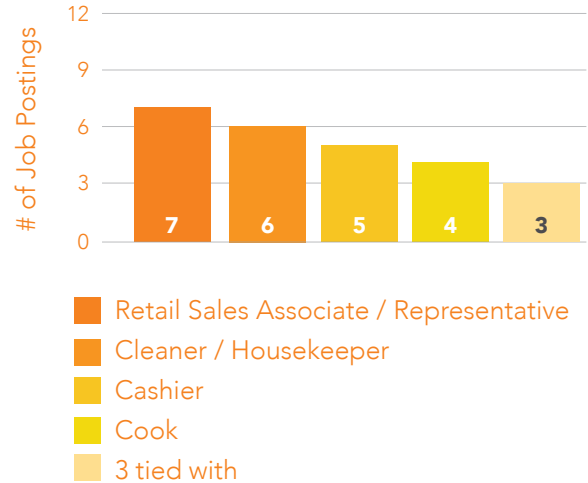
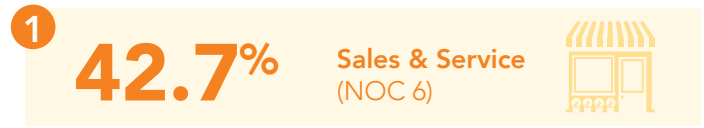
- 2** 15.3% : Health Care & Social Assistance (NAICS 62)
- 3** 14.5% : Accommodation & Food Services (NAICS 72)
- 4** 7.6% : Manufacturing (NAICS 31-33)
- 5** 6.9% : Public Administration (NAICS 91)

The Retail Trade (NAICS-44-45) industry saw the greatest number of job postings in July with 30.5% (40) of the overall share amongst all major industry classifications; with this industry also accounting for the largest month-over-month increase of +7.8%. The Educational Services (NAICS-61) industry saw the largest month-over-month decrease of -7.8% to make up 5.3% (7) of the job postings in this month.

TOP 3 OCCUPATIONAL CATEGORIES (NOC)



TOP 3 OCCUPATIONAL CATEGORIES (NOC)



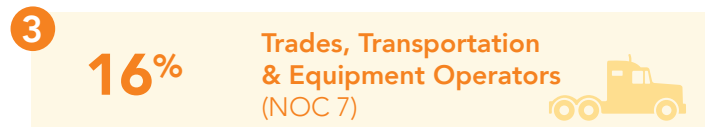
- Community / Social Service Worker (11)
- Instructor - College (6)
- Personal Support Worker / Independent Living Assistant (5)
- Professor - College/University (5)
- Child and Youth Worker (4)



- Teacher - Various (7)
- Community / Social Service Worker (6)
- Personal Support Worker / Independent Living Assistant (4)
- Afterschool Program Worker (2)
- 5 tied with (1)



- Labourer - Construction/General (12)
- Driver - AZ/DZ/Truck/Transport (8)
- Driver- Delivery/Bus (6)
- Installer - Various (4)
- Warehouse Worker / Clerk (4)



- Driver - AZ/DZ/Truck/Delivery (6)
- Installer - Various (2)
- Labourer - Various (2)
- Auto Body Technician (1)
- 10 tied with (1)

Sales and Service (NOC-6) based occupations made up the largest portion of job postings with 28.6% (126) of all postings in July when compared to the major occupational classifications and also account for the largest month-over-month increase of +2.5%. Education, Law and Social, Community and Government Services (NOC-4) based occupations saw the largest month-over-month decrease of -3.5% with 16.4% (72) of the July postings.

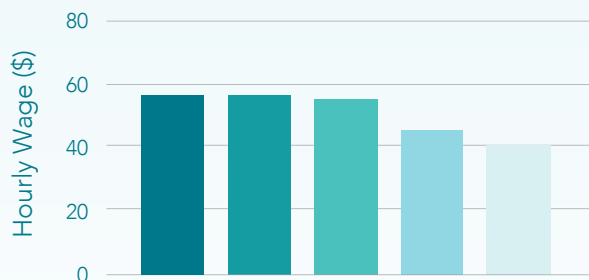
Sales and Service (NOC-6) based occupations represented the largest number of job postings in July with 42.7% (56) of all postings when compared to the major occupational classifications. Education, Law and Social, Community and Government Services (NOC-4) occupations accounted for the largest month-over-month decrease of -2.6% to represent 18.3% of the recorded July postings. The largest month-over-month increase in job posting share was for Trades, Transportation and Equipment Operator (NOC-7) based occupations which changed +4.1% to make up 16% (21) of the July postings.

TOP 5 HOURLY WAGE VACANCIES



\$56.00

Manager - Purchasing and Materiel Management
@ North Bay Regional Health Centre



\$56.00 **Manager - Talent Acquisition**
@ North Bay Regional Health Centre

\$55.00 **Orthophoniste**
@ Conseil scolaire public du Nord-Est de l'Ontario

\$45.00 **Social Worker - Complex Care**
@ North Bay Regional Health Centre

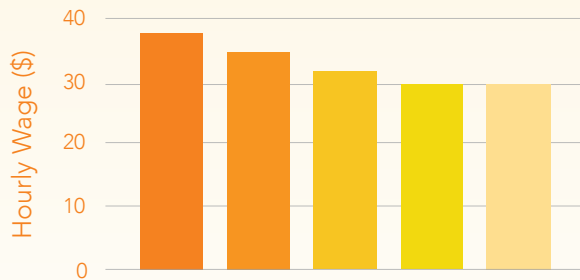
\$40.00 **Carpenter**
@ MHM General Contracting

TOP 5 HOURLY WAGE VACANCIES



\$38.00

Crisis Case Manager
@ Canadian Mental Health Association
- Muskoka Parry Sound Branch



\$35.00 **Driver - DZ**
@ Parry Sound Fuels

\$32.00 **Lead Hand - Public Works**
@ Township of Strong

\$30.00 **Driver - AZ/DZ**
@ Adams Bros. Construction

\$30.00 **Carpenters Helper**
@ Upton Developments

TOP 3 ANNUAL SALARY VACANCIES

\$126,838

Site Superintendent
@ DL Building Group

\$120,000

Sales Manager - Automotive
@ Kia North Bay

\$92,223

Financial Analyst
@ Ontario Northland



Lowest Annual Salary **\$37,716**

Transitional Care Assistant
@ Canadian Red Cross

The average hourly wage in July for those postings which listed (33.6%) an hourly wage was \$22.76/hour. This is in-line; -1.1% (-\$0.26/hour), with the current 12-month average of \$23.02/hour. Of the 148 postings which listed an hourly wage 14.2% (21) were listed at the provincial minimum wage of \$15.50/hour. For postings that listed an annual salary the average was \$66,101.58/year. This is also in-line; -1.8% (-\$1,229.28/year), with the current 12-month average of \$67,330.86/year.

TOP ANNUAL SALARY VACANCY

\$82,100

Assistant Manager - Retail
@ Walmart - Parry Sound

\$60,000

Auto Body Technician
@ Bray Motors

\$49,000

Economic Development Officer
@ Shawanaga First Nation



Lowest Annual Salary **\$33,670**

Communications Intern
@ West Parry Sound District Museum

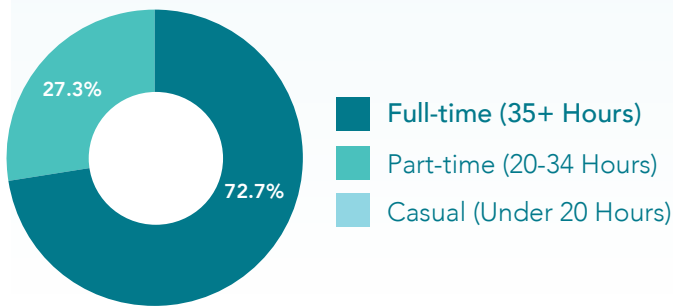
The average hourly wage in July for those postings which listed (39.7%) an hourly wage was \$21.94/hour. This figure is slightly below; -6.8% (-\$1.61/hour), the current 12-month average of \$23.55/hour. Of the 52 postings which listed an hourly wage 3.8% (2) were listed at the provincial minimum wage of \$15.50/hour. The average annual salary listed in the month of July was \$52,491.67; significantly below; -19.6% (-\$12,818.49/year), the current 12-month average annual salary of \$65,310.16/year.

FULL-TIME / PART-TIME BREAKDOWN

72.7% of listings in July

↓ **2.4%**
from June

72.7% (320) of the listings in July indicated that the employment offered would be classified as full-time. This figure is slightly below; -2.4%, the previous month when 75.1% of the job postings were classified as full-time.



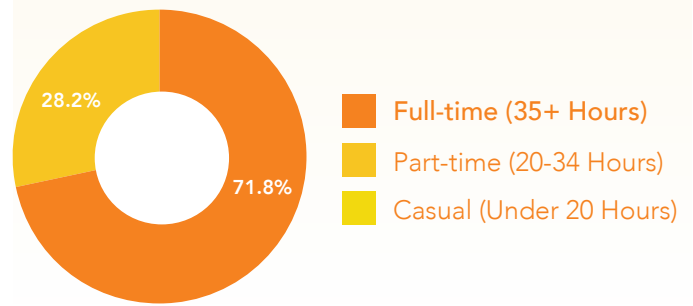
440 Postings listed hours offered (100%)

FULL-TIME / PART-TIME BREAKDOWN

71.8% of listings in July

↑ **5.9%**
from June

71.8% (94) of the listings in July indicated that the employment offered would be classified as full-time. This figure is a slight increase; +5.9%, from the previous month where 71.8% of the job postings were classified as full-time.



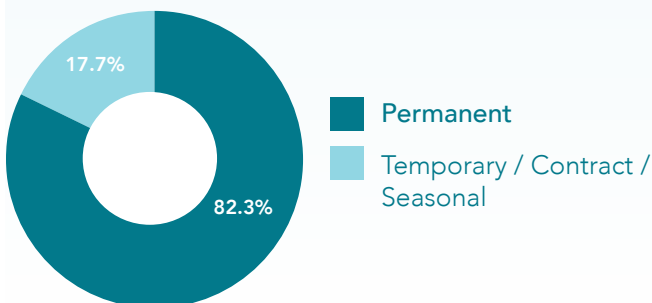
131 Postings listed hours offered (100%)

TERM OF EMPLOYMENT

82.3% of listings in July

↓ **1.8%**
from June

82.3% (362) of the listings in July stated that the opportunity in question would be permanent. This is nearly a slight drop; -1.8%, from June when permanent postings made up 84.1% of the job postings.



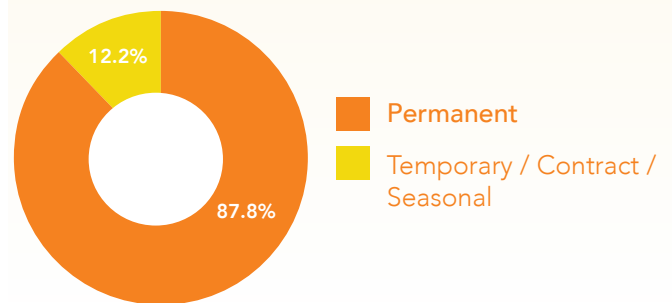
440 Postings listed hours offered (100%)

TERM OF EMPLOYMENT

87.8% of listings in July

↓ **0.8%**
from June

87.8% (115) of the listings in July stated that the opportunity in question would be permanent. This is nearly identical; -0.8%, to June when these opportunities accounted for 88.6% of the job postings listed in that month.



131 Postings listed hours offered (100%)

ALL EMPLOYERS WITH POSTINGS IN MONTH



NIPISSING DISTRICT

401 Auto - North Bay Chrysler
A&W (McKeown)
A&W (Sturgeon Falls)
ABM Integrated Solutions
Actlabs
Advance Auto Parts Inc.
AIDS Committee of North Bay and Area
AIM Kenny U-Pull
Airport Animal Hospital
Alex McKillop Tax Ltd.
Algonquin Nursing Home of Mattawa
Algonquin Pharmasave & Compounding Center
All Shelter Sales and Rentals
AllRoads Auto Sales
American Eagle Outfitters
Apollo Transport
Arctica Heating and Cooling Ltd.
Ardene
Bath & Body Works
Battlefield Equipment Rentals
Bay City Animal Hospital
Bay Roofing and Exteriors Ltd.
Bay Truck Stop Family Restaurant
Bayland Property Management
Bayland Yard
Best Buy
Beyond Wireless Inc.
Binx Professional Cleaning
Blackfly Lures
Blanchfield Roofing Co. Ltd.
Boart Longyear - North Bay
Boart Longyear - Sturgeon Falls
Boathouse / Blackwell Stores
Bomark Motel
Boutique Marie Claire Inc
Bradwick Property Management
Brandt Industries
Bruman Construction Inc
Buchner Manufacturing Inc.
Burger King - Lakeshore Drive
CAA North & East Ontario
Caisse Alliance
Campus Living Centres
Canada Post - North Bay
Canadian Forces Morale and Welfare Services
Canadian Mental Health Association
- North Bay and Area
Canadian Tire - North Bay
Canadian Tire Gas+ - North Bay
Canadore College
Canadore College - College Drive
Canadore College - Commerce Court
Canadore College - Parry Sound Campus
Canor Construction
Canpar express
CarePartners
CARQUEST Canada
Cascades Casino
Cassellholme Home for the Aged
Cementation Canada
Centennial Contracting Ltd.
Central Welding & Iron Works
Christian Horizons (CA)
CJ Limited - Charm Diamond Centres
Cogeco
Comfort Inn - Airport
Commissionaires
Community Counselling
Community Living North Bay
Conseil Scolaire Catholique Franco-Nord
Conseil scolaire public du Nord-Est de l'Ontario
Contrans Flatbed Group
Cooper Equipment Rentals
Co-operative Care Alliance
Crisis Centre North Bay
CTS Canadian Career College
Dairy Queen Grill & Chill - McKeown Ave.
Dawson Dental - North Bay
Days Inn & Suites North Bay

Descon Construction Ltd
Designed Roofing Inc., Essential Exteriors
& Northland Glass & Metal
Diagnostic Sleep Clinic
Di-Corp
Discount Car and Truck Rentals
District of Nipissing Social Services
Administration Board
Dollarama - North Bay
DSI Underground Canada Ltd.
East Ferris Bus Lines
Eclipse Stores Inc
Ed Seguin & Sons Trucking and Paving
Enbridge Inc.
Enterprise Holdings
Enterprise Rentacar
Evergreen Landscaping
exp Global Inc.
Express Parcel
Farquhar Dairies Ltd
First Choice Haircutters
First Onsite
First Peoples Wellness Circle
Fisher Wavy Inc.
Freightliner North Bay
Gangnam Korea
Garderie Soleil
GHC Heating and Air Conditioning
Giant Tiger - North Bay
Gincor Wex
Glen Garry Motel and Cottages
goeasy
GoodLife Fitness Centre - Main Street
Gordon Food Service
GP Welding & Ironworks
Grant Thornton LLP
Greco's Pizza Presto
Groupe Dynamite Inc.
Hampton Inn by Hilton North Bay
Hands TheFamilyHelpNetwork.ca - North Bay
Hands TheFamilyHelpNetwork.ca
- Parry Sound
Hands TheFamilyHelpNetwork.ca/Main
LeReseaudaideauxfamilles.ca
Haskins Industrial Inc.
Holiday Inn Express North Bay
Home Instead Senior Care
Hope Awaits Ministries
Hopper Buick GMC
Husqvarna
Ivan's Restaurant
J&J Machine Works
J&R Property Management
Jim's Locksmithing
Kal Tire
Kennedy Insurance Brokers Inc.
Kia North Bay
KIND Forest School
Knight Piesold Ltd.
Kohltech Windows & Entrance Systems
Kohltech/Seymour Windows
Lakeshore Dental Care
Larry Lennon Electrical
Les Compagnons des francs loairs
Levante Living
Levante Living - Barclay House
Lewis Motor Sales Inc
LHD Equipment
Linde Canada Inc.
Long & McQuade
Loxton Homes
Lucenti Orlando Professional Corporation
March of Dimes Canada
Marina Point Village
Mario's Auto Body
Martin Roy Transport / MRT
Maslack Supply
Mattawa Hospital
Mattawa River Resort
McDonald's (West Nipissing)
McIntosh Perry

Metal Fab Ltd.
Metro - North Bay
Michael Hill
Miller Paving
Miller Technology Incorporated
Miller Waste Systems
Ministry of the Solicitor General
Ministry of Transportation
Molly Maid
Moore's
Motion Specialties
Mr Seamless Eavestroughing Ltd
Municipality of Temagami
Municipality of West Nipissing
MyCar
National Bank
National Diabetes Trust
Near North District School Board
Neddy's North Bay Hyundai
Nijjaansinaanik Child and Family Services
Nijjaansinaanik Child and Family Services
- North Bay
Nipissing Chiropractic Clinic
Nipissing Transition House
Nipissing University
Nipissing-Parry Sound Catholic
District School Board
No Frills - Dave and Jenna's
Nordic Minesteel Technologies Inc.
North Bay and Area REALTORS(R) Association
North Bay and District Multicultural Centre
North Bay Computer Services Inc.
North Bay Cycle and Sports
North Bay Golden Age Club
North Bay Hydro
North Bay Mazda
North Bay Painting
North Bay Parry Sound District Health Unit
North Bay Regional Health Centre
North Bay-Mattawa Conservation Authority
North Star Studios
Northern Credit Union
Northern OK Tire
Northern Smiles Dental
Novo Peak Health
Nurse Next Door
One Kids Place Children's Medical Treatment
Center of North East Ontario
Ontario Northland
OUR Center Foster Care
Paramed Home Health Care
Partner's Billiards and Bowling
Pathways Wellness and Medical Foot Care
Penningtons
Perron's Freshmart
Peter Conti Custom Woodworking & Design
Petro Canada and Restaurant - Temagami
PHARA
Pilot Diamond Tools Ltd.
Plan A Long Term Care Staffing and
Recruitment
Platinum Patient Transfer Service
Purulator
Recipe Unlimited Corporation - Montana's
Recipe Unlimited Corporation - Swiss Chalet
Recreational Respite
Redpath Mining Contractors and Engineers
Reitmans Lte/lt
Rexall - North Bay
Robertson Restoration
Robinson's Pharmasave
RONA - McGaughey Ave.
Roots Canada
Royal Bank of Canada - North Bay
Sally Beauty
Sangster Law
Savage Equipment Leasing Inc.
Scotiabank - North Bay
Shear Oasis Hair Design
Shoppers Drug Mart - Cassells St.
Showcase

Sienna Living - North Bay
Sienna Senior Living
Simcoe Northern Supply
Softmoc
Sportchek
Springer Animal Hospital
St. Andrew's United Church - North Bay
Stantec
Staples Canada
Stock Transportation
Stockfish Automotive Group
Tan Tan Wok
Tank Traders
TD Bank - North Bay
Telus
Telus - North Bay
The Children's Aid Society of the
District of Nipissing and Parry Sound
The Corporation of the City of North Bay
The Cosmetic Clinic
The Erb Group of Companies
The Home Depot - North Bay
The Sisters of St. Joseph of Sault Ste. Marie
The Station Tap House & Steak co.
ThinkOn
Tim Hortons - Cassells St.
Tim Hortons - Sturgeon Falls
Tim Hortons - Trout Lake Rd.
TJX Companies - Winners
Tokyo Smoke
Total Cleaning & Restoration
Transport Training Centres of Canada
Tremblay Chrysler Dodge Jeep Ram
True North Chevrolet Cadillac Ltd / Fix Auto
North Bay
Tulloch Engineering
Twiggs - Cartier St.
Union of Ontario Indians
V Music Studio
Valois Motel & Restaurant
Value Village
Victorian Order of Nurses / VON
VON Canada (Ontario) - North Bay
Voyageur Aviation Corp
Wacky Wings
Wallace Klein Partners In Law LLP
Walmart - North Bay
Walmart Canada
Wendy's Restaurants - Lakeshore Drive
West 49
West Ferris Day Nursery
West Nipissing General Hospital
Winmar Property Restoration
WipWare Inc.
WIS International
Wolves Den Gas Bar
YMCA of Northeastern Ontario



PARRY SOUND DISTRICT

Adams Bros. Construction
Ahmic Lake Resort
Almaguin Highlands Community Living
Almex Group
Best Western Plus Parry Sound
Binx Professional Cleaning
Bray Motors
Burks Falls Kwik way
Canada Post - Magnetawan
Canada Post - Parry Sound
Canadian Mental Health Association
- Muskoka Parry Sound Branch
Canadore College - Parry Sound Campus
Comfort Inn Parry Sound
Contact North (Parry Sound)
CSN Buchans
Cutting Bros. Inc.

DayCon Limited
Deker Electric Ltd
District of Parry Sound Social Services
Administration Board
Dock Kings Inc.
Dutch Love Cannabis
Eastholme Home for the Aged
G Force Security
Georgian Bay Propane Inc.
Glenn Burney Lodge
Grand Tappattoo Resort
Harvey's Parry Sound
Helping Hands Home Support Services
Home Instead
Home Instead Senior Care
Ideal Supply Inc.
Iron Design Welding
Jolly Roger Inn & Resort
Kawartha Credit Union - Parry Sound
KFC Canada - Soul Foods Group
Lakeside Cottage Care
LCBO - Parry Sound
Lisa M. Lund Professional Corporation
Lofthouse Manufacturing (a Division
of Brawo Brassworking Limited)
Marquee Farm
Martel & Mitchell Rehabilitation
Municipality of Whitestone
Muskoka Smart Homes Inc.
Near North District School Board
Northridge Inn and Resort

Oakcrest Co.
Parry Sound Family Dentistry
Parry Sound Forest School
Parry Sound Fuels
Parry Sound Ready Mix
Phoenix Building Components Inc
Pizza Hut - Parry Sound
RONA - Parry Sound
Royal Bank of Canada - Sundridge
Scotiabank - Powassan
Serenity Property Management
Shawanaga First Nation
Shear Perfection
Shoppers Drug Mart - Parry Sound
Sobeys - Parry Sound
Soundseals Insulation
TD Bank - Parry Sound
The Friends
The Home Depot - Parry Sound
The Source
Tim Hortons
Town and Country Motel
Township of Strong
Upton Developments
Walmart - Parry Sound
Walmart Canada
Wasauksing First Nation
West Parry Sound District Museum
West Parry Sound Health Centre
Westburne
YMCA of Simcoe/Muskoka



WHAT IS THE LMG MONTHLY JOBS REPORT?

This Jobs Report is a monthly publication produced by the Labour Market Group.

Each month we compile this report based on our job portal [readysethired.ca](https://www.readysethired.ca).

Readysethired.ca is an online job portal that provides and collects real time job postings within the districts of Nipissing and Parry Sound. These postings are updated daily and provide job seekers with a one stop shop for local current employment opportunities.

FOR MORE INFORMATION & FURTHER DETAILS ABOUT LOCAL JOBS, PLEASE CONTACT :

The Labour Market Group
[readysethired.ca](https://www.readysethired.ca)
info@thelabourmarketgroup.ca



The Labour Market Group
Guiding partners to workforce solutions.

AMO Watchfile not displaying correctly? [View the online version](#)
Add Communicate@amo.on.ca to your safe list



September 7, 2023

In This Issue

- The Future of Municipal Liability and Risk Management.
- Ontario Anti-Hate Security and Prevention Grant.
- Release of public information service.
- Register for the October Risk Management Symposium.
- Municipal Cybersecurity 101 forum.
- FOI program automation: Save time and money with AMO's new partner.
- Canoe Webinars are Back!
- Blog: Experience as a Business Development Intern at LAS.
- Register for OMSSA's 2023 Forum.
- Careers.

AMO Matters

AMO and the province came together to form a Technical Working Group to provide an inter-governmental dialogue on municipal insurance costs, coverage and liability issues. [Read the report](#) summarizing the group's findings.

Provincial Matters

The Ontario government is providing one-time grants of up to \$10,000 to ensure community spaces remain safe and secure from hate-motivated incidents. [Applications are open for 2023-2024](#). The deadline is September 12, 2023.

The Technical Standards and Safety Authority ([TSSA](#)) is Ontario's public safety regulator. TSSA releases public information (e.g., licence statuses or devices at a location) per its privacy codes. [Click here](#) to request a release.

Eye on Events

LAS and Intact Public Entities are returning to an in-person [Risk Management Symposium](#) October 4- 5, 2023. This year's theme of *Navigating the Road to Resilience* will discuss critical municipal risk issues such as climate change and data management. It will also include an interactive cyber security event.

It's back! AMO and MISA ON's joint Municipal Cybersecurity 101 Forum returns this fall in time for Cybersecurity Month. Join us virtually on October 12 from 10am to 2pm to learn more about building a cyber resilient municipality. [Register today](#).

AMO is pleased to partner with Vayle to offer a cost-effective digital platform to streamline FOI program management, reduce costs, and mitigate compliance risks. [Join us on September 14](#) at 12pm where we will provide a deeper dive into the latest digital offering.

LAS

[Canoe Procurement Group](#) webinars are back! Join us for [Canoe 101](#) on September

28, [Job Order Contracting](#) on October 11, and [Fuel Management](#) on October 26. Follow the links or [visit LAS Events](#) to register.

LAS regularly hires intern students to help out. Our summer intern's co-op term ended last week and he is now back to school. [Read about his experience](#) working with the LAS team and some of the things he was able to complete during his time here.

Municipal Wire*

Join the Ontario Municipal Social Services Association (OMSSA) on September 26 and 27 and explore the planning and delivery of social services nationally and globally to better understand and address common challenges. [Register today](#).

Careers

[Director, Business Modernization and Digital Delivery Branch - Ministry of Finance](#). Provide strategic leadership and operational direction for the development and oversight of business modernization planning. [Apply online](#) by September 12.

[Executive Assistant / Deputy Clerk - Town of Deep River](#). Responsible for assisting with the provision of Council/Committee services as well as support in the day-to-day operations. Apply to hr@deeperiver.ca by September 22.

[Deputy Treasurer/ HR Coordinator - Town of Deep River](#). Responsible for overseeing aspects of the Finance Department. Apply to hr@deeperiver.ca by September 22.

[Environmental Health & Safety Field Representative - City of Toronto](#). Responsible for the on-site implementation, supervision, and continual improvement of programs related to health, safety, and quality management systems. [Apply online](#) by September 20.

[Fire Chief - City of Sarnia](#). Providing vision, direction, and oversight for Sarnia Fire Rescue as the service continues to evolve, grow and adapt. Apply to hr@sarnia.ca by October 1.

[Director of Public Works - Township of Cavan Monaghan](#). Supervise and manage all operations and administration of the public works department. Apply to hr@cavanmonaghan.net by September 20.

[Manager Asset Management Office - Niagara Region](#). Responsible for executing the Corporate Asset Management Strategy. [Apply online](#) by September 12.

About AMO

AMO is a non-profit organization representing almost all of Ontario's 444 municipal governments. AMO supports strong and effective municipal government in Ontario and promotes the value of municipal government as a vital and essential component of Ontario's and Canada's political system. Follow [@AMOPolicy](#) on Twitter!

AMO Contacts

[AMO Watchfile](#) Tel: 416.971.9856

[Conferences/Events](#)

[Policy and Funding Programs](#)

[LAS Local Authority Services](#)

[MEPCO Municipal Employer Pension Centre of Ontario](#)

[ONE Investment](#)

[Media Inquiries](#)

[Municipal Wire, Career/Employment and Council Resolution Distributions](#)

AMO's Partners



52 Seguin Street, Parry Sound, Ontario P2A 1B4
Tel: (705) 746-2101 • Fax: (705) 746-7461 • www.parrysound.ca

September 8, 2023

Honourable Paul Calandra, Minister of Municipal Affairs & Housing
College Park 17th Flr.
777 Bay St.
Toronto ON M7A 2J3

Via e-mail: minister.mah@ontario.ca

Dear Minister Calandra,

RE: Parry Sound Area-Wide Simplified Governance Model

Greetings and congratulations upon your recent appointment to the important portfolio of Ministry of Municipal Affairs and Housing.

Attached is Resolution 2023 – 123, passed by Town of Parry Sound Council at its September 5, 2023 Meeting. The resolution requests the Province appoint a third-party independent expert to assist municipalities in West Parry Sound evaluate the opportunities associated with examining a simplified governance model for the area and shared services.

Seguin Township Mayor Ann MacDiarmid and I met last month with former Minister Clark and Parry Sound-Muskoka MPP Graydon Smith on the opportunities associated with a simplified governance model for West Parry Sound. Mayors of 6 of the 7 area municipalities had a subsequent meeting to further the discussion. While a number of these municipalities have since passed resolutions indicating their resistance to any further study or participation in the issue, Parry Sound, as the regional economic hub believes this doesn't position West Parry Sound to meet the challenges and be successful going forward. As the Town's resolution identifies, and as our neighbouring municipalities know, the West Parry Sound area is well positioned with a number of strategic advantages over many other Ontario communities, and yet we continue to lag behind in economic growth and opportunity. Voluntary municipal participation to move forward major intermunicipal initiatives has met with limited success and much energy is consumed in the mere administrative work of attempting to work together.

We would welcome the opportunity to meet with you and/or your staff and discuss the need to analyse the governance of West Parry Sound. Information and analysis gained from a third-party review would not be wasted and will be critical to making longer term strategic decisions.

Thank you for your consideration. We look forward to your response.

Sincerely,



Mayor Jamie McGarvey
Town of Parry Sound

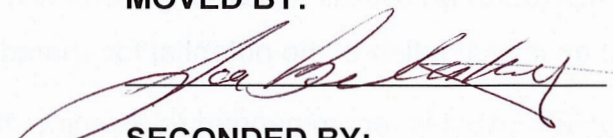
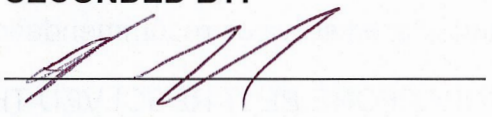
Encl.

c.c. Honourable Doug Ford, Premier of Ontario
Honourable Graydon Smith, MPP Parry Sound-Muskoka
Mayor Susan Murphy, Township of Carling
Mayor Dale Robinson, Municipality of McDougall
Mayor David Moore, Township of McKellar
Mayor Ann MacDiarmid, Township of Seguin
Mayor George Comrie, Municipality of Whitestone
Reeve Bert Liverance, Township of The Archipelago
Chief Adam Pawis, Shawanaga First Nation
Chief Warren Tabobondung, Wasauksing First Nation
Town of Parry Sound Members of Council



THE CORPORATION OF THE TOWN OF PARRY SOUND
RESOLUTION IN COUNCIL

NO. 2023 – 123

DIVISION LIST	YES	NO	DATE: September 5, 2023
Councillor G. ASHFORD	_____	_____	MOVED BY:  <hr/> SECONDED BY:  <hr/>
Councillor J. BELESKEY	_____	_____	
Councillor P. BORNEMAN	_____	_____	
Councillor B. KEITH	_____	_____	
Councillor D. McCANN	_____	_____	
Councillor C. McDONALD	_____	_____	
Mayor J. McGARVEY	_____	_____	
CARRIED: <input checked="" type="checkbox"/>	DEFEATED: <input type="checkbox"/>	Postponed to: _____	

Whereas West Parry Sound is well positioned geographically in north central Ontario with numerous strategic advantages over many other Ontario communities;

Whereas West Parry Sound as a whole has not been able to take full advantage of these strategic advantages;

Whereas voluntary municipal participation to move major intermunicipal initiatives forward has been met with limited success;

Whereas municipal leaders have a responsibility to investigate opportunities that can enhance the quality of life and economic prosperity for all residents of West Parry Sound;

WHEREAS 6 of the Heads of Council of the municipalities in West Parry Sound have met to discuss the potential opportunities associated with a governance and shared services review, (Carling, McDougall, Parry Sound, Seguin, The Archipelago and Whitestone);

WHEREAS those municipalities who wish to continue the discussions agree there needs to be an in-depth review of each of the participating municipality's assets, liabilities, strengths and weaknesses by an independent third party to properly assess and quantify the opportunities and challenges associated with a governance review and potential shared service;

WHEREAS entering into shared service agreements requires a complete understanding of the governance requirements associated for each municipality for each type of service;

WHEREAS an overall review of governance in West Parry Sound is appropriate as part of an investigation of the potential for shared services; and

WHEREAS it is recommended to examine and perhaps implement governance review and shared services recommendations in advance of the 2026 municipal election,

THEREFORE BE IT RESOLVED THAT the Council of The Corporation of the Town of Parry Sound hereby requests that the Province appoint and compensate a third party independent expert to assist the participating municipalities in evaluating the opportunities associated with shared services and examine a simplified governance model for the region;

That the results of the study be made available to the public;

AND THAT copies of this resolution be circulated to the Hon. Doug Ford Premier of Ontario, the Hon. Paul Calandra Minister of Municipal Affairs, the Hon. Graydon Smith MPP Parry Sound-Muskoka, the Councils of the Municipalities of Carling, McDougall, McKellar, Seguin, The Archipelago and Whitestone and, Wasauksing and Shawanaga First Nations Band Councils.



Mayor Jamie McGarvey



**The Corporation of the Town of Grimsby
Administration**

Office of the Town Clerk
160 Livingston Avenue, Grimsby, ON L3M 0J5
Phone: 905-945-9634 Ext. 2171 | **Fax:** 905-945-5010
Email: bdunk@grimsby.ca

September 8, 2023

SENT VIA E-MAIL

Office of the Prime Minister
80 Wellington St.
Ottawa, ON, K1A

Attention: The Right Honourable Justin Trudeau

RE: Establishing a Guaranteed Livable Income

Please be advised that the Council of the Corporation of the Town of Grimsby at its meeting held on September 5, 2023 passed the following resolution:

Moved by: Councillor Korstanje

Seconded by: Councillor Freake

Whereas the Canadian livable wage for Niagara Region, two years ago was determined to be \$19.80. This was \$6000 below the annual income of a minimum wage employee; and

Whereas our residents on programs such as Ontario Works, receive targeted fixed monthly incomes of \$733, and ODSP recipients receive \$1376; and

Whereas at the current Ontario minimum wage rate, a person working 37.5 hours per week will earn approximately \$2,500 monthly (before tax); and

Whereas the median rent for one bedroom in Grimsby as of August 2023 is now \$2000 a month; and

Whereas rent is considered affordable, when it is less than 30% of income. In Niagara west, rent is approximately 272% of Ontario Works, 145% of Ontario Disability Support Services, 75% of minimum wage full-time, and 150% of minimum wage part time; and

Whereas an annual 2.5% allowable rent increase can be combined with an additional 3-6.5% capital investment increase, raising the cost of rental housing another minimum of \$110 monthly; and

Whereas there are no housing units under Niagara Regional Housing for single adults or families with dependents, including 2,3,4 or five bedrooms in our community; and

Whereas the Grimsby Benevolent Fund reported that in 2022:

- 70+ households received monthly rental supplement totaling \$237,744
- \$79,500 was invested into one time emergency housing support as of June 7, 2023
- 78 households are receiving monthly financial benefits to make rental housing more affordable; and

Whereas food inflation was 8.3% and groceries rose by 9.1%; and

Whereas the Grimsby Food Bank numbers from June 2023 reported:

- 19 new households
- 447 served households
- 1055 served individuals
- 7 emergency visits; and

Whereas the Grimsby Economic Strategic Plan identified the general high cost of living and housing affordability as primary obstacles in our workforce attraction.

Therefore be it resolved that The Corporation of the Town of Grimsby circulate correspondence to Ontario municipalities encouraging them not only to collect data of their housing and poverty statistics, but also to examine their pending economic vulnerability as a result.

Be it further resolved that The Corporation of the Town of Grimsby encourage these same municipalities to join us in advocating on behalf of our communities with this data, and by writing a letter to the Prime Minister, Premier, and local politicians calling for a united effort in establishing a Guaranteed Livable Income program.

Be it further resolved the Town of Grimsby Clerks Department circulates this resolution to Niagara West MP Dean Allison and Niagara West MPP Sam Oosterhoff, requesting a response on this matter within 30 days of receipt.

Be it further resolved that The Corporation of the Town of Grimsby, through its Finance and Human Resources departments, undertake a comprehensive assessment to explore the feasibility and implementation of a living wage policy for all Town of Grimsby employees, with the aim of ensuring that all municipal workers receive fair compensation that aligns with the principles of a living wage and that staff be directed to explore becoming a living wage employer.

If you require any additional information, please let me know.

Regards,



Bonnie Nistico-Dunk
Town Clerk

cc. Hon. Doug Ford, Premier of Ontario
Ontario Municipalities
Dean Allison, MP Niagara West
Sam Oosterhoff, MPP Niagara West