LITTLE LAKE (Midland)
CONDITIONS UPDATE

Sample Date: May 8, 2023

Temperature at Surface

13.1˚C

Temperatures are still cold following ice out on April 11th.

Water Clarity

3.9 m

Lake Depth

3.9 m

Water clarity is excellent when lakebed is visible. Clarity on May 8th was excellent.

View from Little Lake boat launch

Bottom Water Dissolved Oxygen

10.6 mg/L

This is plenty for cold and warm water fish species.

Little Lake Outflow Level

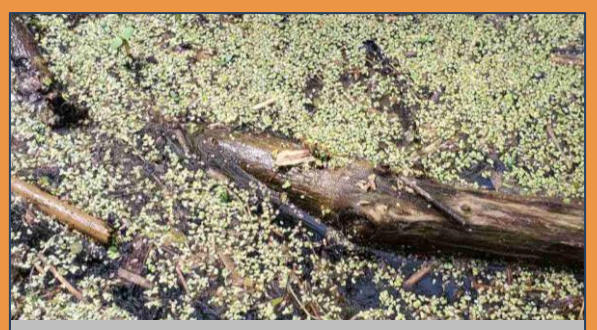
43 cm

Readings taken at the McMurty Dr. outflow structure indicate that levels are slightly higher than this time last year.

Little Lake outflow on McMurty Dr.

General Observations

- **Water clear**
- **No foam**
- **Lake bottom is visible through plant growth**
- **Lots of plant debris floating on lake**



Duckweed in pond near outlet

Staff measuring outlet water levels

Invasive Species

Invasive Species found on Little Lake

- **Glossy Buckthorn & Japanese Beetles**
- **Glossy Buckthorn** is a shrub which can crowd out native species in large numbers. Their fruits do not provide adequate nutrition for wildlife compared to native shrub species which decreases available food sources for wildlife.
- **Japanese Beetles** are an invasive insect which feed on a large variety of plants. They have few natural controls outside of their native range giving them a competitive advantage which allows them to decimate large crops and gardens.

Glossy Buckthorn

Japanese Beetle

LITTLE LAKE (Midland) CONDITIONS UPDATE

Sample Date: May 23, 2023

Temperature at Surface

16.8˚C

Temperatures are increasing in response to warmer air temperatures.

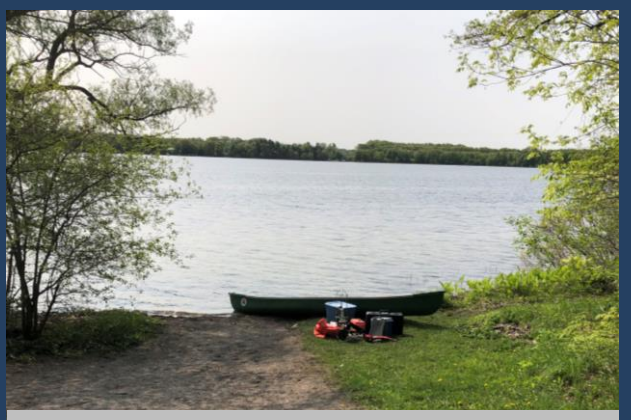
Water Clarity

3.6 m

Lake Depth

3.8 m

Water clarity is excellent when lakebed is visible. The lakebed was not visible, but water was still fairly clear.



View from Little Lake boat launch

Bottom Water Dissolved Oxygen

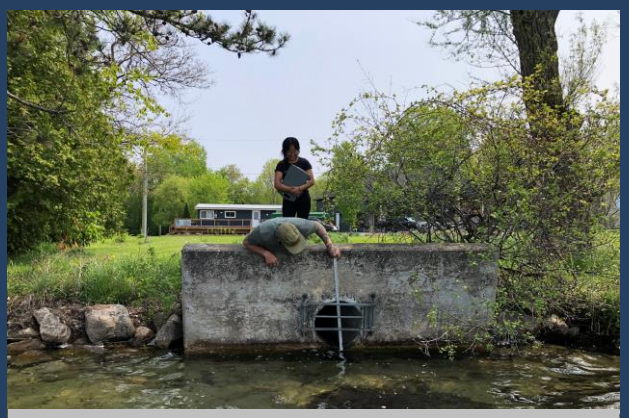
9.8 mg/L

This is plenty for cold and warm water fish species.

Little Lake Outflow Level

37 cm

Readings taken at the McMurty Dr. outflow structure indicate that levels have dropped by 6 cm in the last 2 weeks.



Little Lake outflow on McMurty Dr.

General Observations

- **Water clear**
- **Foam along beach**
- **Lake bottom is visible through plant growth**
- **Dead carp on beach, fishy smell**

Dead carp on beach

Staff pouring water & algae samples

Invasive Species

Invasive Species found in or around Little Lake:

- **Purple Loosestrife** (*Lythrum salicaria*) is a wetland invasive flowering plant which can form dense monocultures and outgrow native vegetation.
- **Eurasian Water-milfoil** (*Myriophyllum spicatum*) is an aquatic invasive plant that forms thick mats of underwater vegetation which prevents native plant growth and can significantly hinder the recreational use of the water way by entangling boat propellers and hindering activities such as swimming and fishing.

Purple Loosestrife

Eurasian Water-milfoil

LITTLE LAKE (Midland) CONDITIONS UPDATE

Sample Date: Jun 6, 2023

Temperature at Surface

22.7˚C

Temperatures are increasing with higher air temperatures.

Water Clarity

4.3 m

Lake Depth

4.8 m

Water clarity is considered excellent when lakebed is visible. Water clarity has improved since May 23rd although the lakebed is not visible.

View from Little Lake boat launch

Bottom Water Dissolved Oxygen

8.7 mg/L

This is plenty for cold and warm water fish species.

Little Lake Outflow Level

32 cm

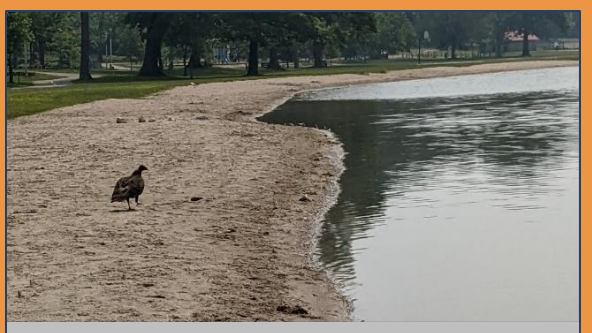
Readings taken at the McMurty Dr. outflow structure indicate that levels have decreased since the last update on May 23rd.

Little Lake outflow on McMurty Dr.

General Observations

- **Dead fish on beach**
- **Foam in open waters**
- **Water clear with greenish tint**
- **Lots of specks of algae in open waters**

Aquatic plants near rowing club dock



Vulture feeding on washed up fish

Invasive Species

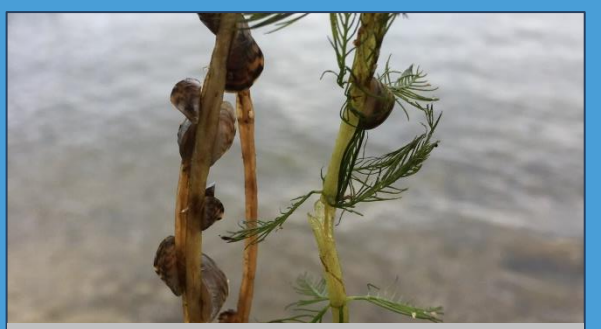
Invasive Species found in or around Little Lake:

- **Zebra Mussels (ZMs)** (*Dreissena polymorpha*) are invasive mussels that are widespread in Severn Sound, Bass Lake and Lake Couchiching. Small populations have also been observed in Orr and Little Lake
- ZMs are efficient filter feeders, and can have negative impacts on the ecology of a lake

CLEAN DRAIN DRY
Prevent the Spread of Aquatic Invasive Species

Recreational users are reminded to Clean, Drain and Dry ALL equipment before & after entering the lake!

Zebra mussel attached to *Chara*



Mussels on Eurasian Milfoil

LITTLE LAKE (Midland) CONDITIONS UPDATE

Sample Date: Jun 19, 2023

Temperature at Surface

22.1˚C

Temperatures have cooled slightly with cooler air temperature.

Water Clarity

3.0 m

Lake Depth

3.8 m

Water clarity is considered excellent when lakebed is visible. Water clarity was lower compared to June 6th.

View from Little Lake boat launch

Bottom Water Dissolved Oxygen

8.9 mg/L

This is plenty for cold and warm water fish species.

Little Lake Outflow Level

29.5 cm

Readings taken at the McMurty Dr. outflow structure indicate that levels have decreased since the last update on Jun 6th.

Little Lake outflow on McMurty Dr.

General Observations

- **Dead fish on beach, smell detected**
- **Pollen and insect casings on water surface**
- **Water clear with yellowish tint**
- **Lots of specks of algae in open waters**

Pollen washed up on beach

Healthy shoreline habitat

Invasive Species

Invasive Species found in or around Little Lake:

- **Amur Maple** (*Acer ginnala*) is a small tree which is often used for landscaping because of its ornamental features. When Amur Maple escapes to natural areas, it can shade out desirable native species.
- **Manitoba (Boxelder) Maple** (*Acer negundo*) is native to the Canadian prairies, however, in Ontario it is considered an invasive species. Manitoba maple grows fast, is relatively short-lived and forms a dense canopy at maturity, shading out native plant species.

Amur Maple

Manitoba (Boxelder) Maple

LITTLE LAKE (Midland)
CONDITIONS UPDATE

Sample Date: Jul 5, 2023

Temperature at Surface

26.6˚C

Temperatures have risen with recent warm air temperatures.

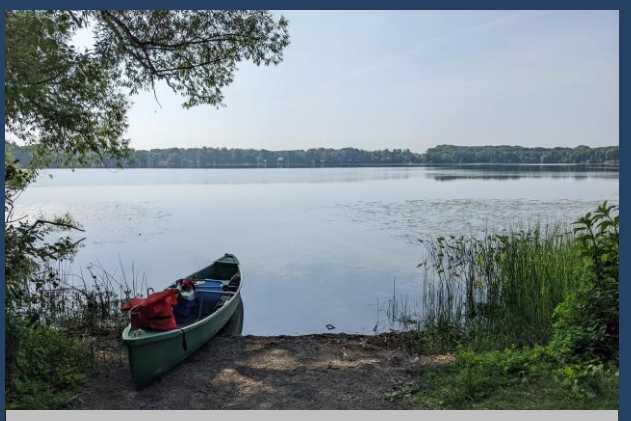
Water Clarity

3.2 m

Lake Depth

4.0 m

Water clarity is considered excellent when lakebed is visible. The lakebed was obscured by plants and clarity was not being reduced by algae growth.



View from Little Lake boat launch

Bottom Water Dissolved Oxygen

8.3 mg/L

This is plenty for cold and warm water fish species.

Little Lake Outflow Level

29 cm

Readings taken at the McMurty Dr. outflow structure indicate that levels have been stable since the last update on Jun 19th.

Little Lake outflow on McMurty Dr.

General Observations

- **Greenish yellow water colour**
- **No floating plant debris on surface**
- **Some algae specks in open waters, no algae blooms**
- **BLUE GREEN ALGAE DOCUMENTED BY SMDHU AT BEACH AREA – BEACH CLOSURE**

Invasive Species

Invasive Species that <u>have not been documented in Little Lake</u> but that you should be on the look out for:

- **Yellow Iris** is a troublesome invasive species that outgrows native aquatic plants and harms biodiversity within aquatic ecosystems. It was originally introduced as an ornamental plant and can still be found at garden centres.
- **Chinese Mystery Snails** can be identified by the “trapdoor” on their shells which no native species have. They can resist predation and alter food webs by significantly reducing native snail populations.

Pickerelweed

Jelly Blob (*Ophridium*), a harmless colony of protozoans

Yellow Iris

Chinese Mystery Snail

LITTLE LAKE (Midland) CONDITIONS UPDATE

Sample Date: Jul 17, 2023

Temperature at Surface

23.7˚C

Temperatures have dropped since the last update, likely due to recent storms.

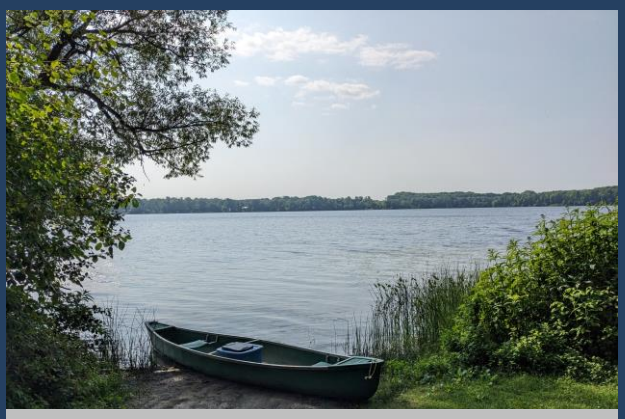
Water Clarity

2.3 m

Lake Depth

3.3 m

Water clarity is considered excellent when lakebed is visible. Sediments stirred up in the water contributed to lower than usual clarity.



View from Little Lake boat launch

Bottom Water Dissolved Oxygen

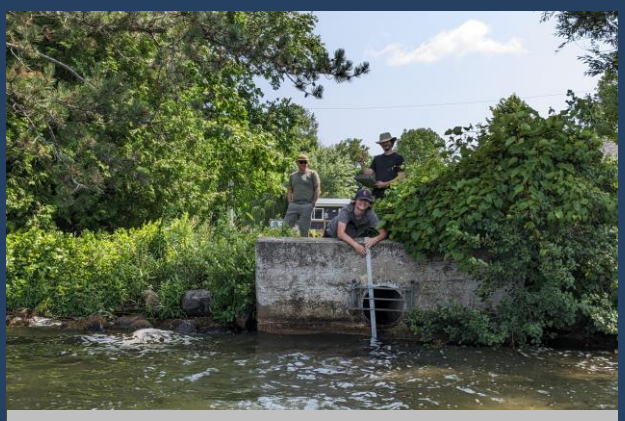
8.5 mg/L

This is plenty for cold and warm water fish species.

Little Lake Outflow Level

32 cm

Readings taken at the McMurty Dr. outflow structure indicate that levels have increased since the last update on July 5th in response to recent rainfall.

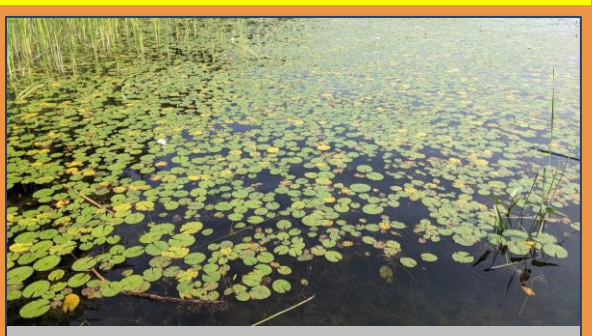


Little Lake outflow on McMurty Dr.

General Observations

- **Greenish yellow water colour, murky with visible particles**
- **Foam in open waters & on shore**
- **3 dead fish on beach**
- **BLUE GREEN ALGAE DOCUMENTED BY SMDHU AT BEACH AREA – BEACH CLOSURE**

Dead fish and foam on beach



White water lilies

Invasive Species

Invasive Species found in or around Little Lake:

- **Phragmites/Common Reed** (*Phragmites australis ssp. australis*) is a tall perennial grass that is native to Eurasia. Phragmites is an aggressive semi-aquatic plant that threatens native plants and wildlife, human safety, agriculture and recreational activities. It invades a variety of habitats including lakes, shorelines, wetlands, beaches, ditches, and roadsides and succeeds in disturbed habitats. The seed head and stems will persist through the fall, winter and into early spring.

Phragmites - aquatic

Phragmites - terrestrial

LITTLE LAKE (Midland)
CONDITIONS UPDATE

Sample Date: Jul 31, 2023

Temperature at Surface

24.8˚C

Temperatures are higher than the last update.

Water Clarity

3.2 m

Lake Depth

3.6 m

Water clarity is considered excellent when lakebed is visible. The lakebed was slightly obscured by plants and clarity was not being reduced by algae growth.

View from Little Lake boat launch

Bottom Water Dissolved Oxygen

8.3 mg/L

This is plenty for cold and warm water fish species.

Little Lake Outflow Level

35 cm

Readings taken at the McMurty Dr. outflow structure indicate that levels have increased slightly since the last update on July 17th.

Little Lake outflow on McMurty Dr.

General Observations

- **Yellowish green water colour**
- **Extensive aquatic plant growth**
- **Lots of plant debris floating on surface**
- **BLUE GREEN ALGAE DOCUMENTED BY SMDHU AT BEACH AREA – BEACH CLOSURE**

Float plane taking off from Little Lake

Lots of Duckweed at Little Lake outlet

Invasive Species

Invasive Species that have not been detected in Little Lake but that you should be on the look out for:

- **Spiny Waterfleas** (*Bythotrephes longimanus*) are predatory zooplankton that congregate to form masses on fishing lines. They reproduce quickly, outcompeting native zooplankton species, and harming fish that eat them due to their sharp spines.

CLEAN DRAIN DRY
Prevent the Spread of Aquatic Invasive Species

Recreational users are reminded to Clean, Drain and Dry ALL equipment before & after entering the lake!

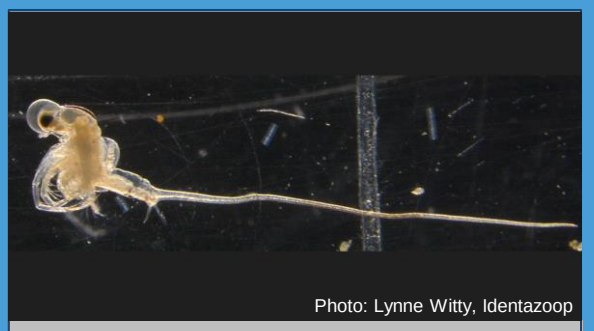


Photo: Lynne Witty, Identazoop

Spiny Waterflea

Photo: Andrea L. Jaeger Miehls, Michigan State University

Spiny Waterflea on fishing line

LITTLE LAKE (Midland) CONDITIONS UPDATE

Sample Date: Aug 14, 2023

Temperature at Surface

22.9˚C

Temperatures are slightly lower than last update.

Water Clarity

3.2 m

Lake Depth

3.5 m

Water clarity is considered excellent when lakebed is visible. The lakebed was obscured by plants and clarity was not being reduced by algae growth.

View from Little Lake boat launch

Bottom Water Dissolved Oxygen

8.6 mg/L

This is plenty for cold and warm water fish species.

Little Lake Outflow Level

30 cm

Readings taken at the McMurty Dr. outflow structure indicate that levels have decreased by 5 cm since the last update on Jul 31st.

Little Lake outflow on McMurty Dr.

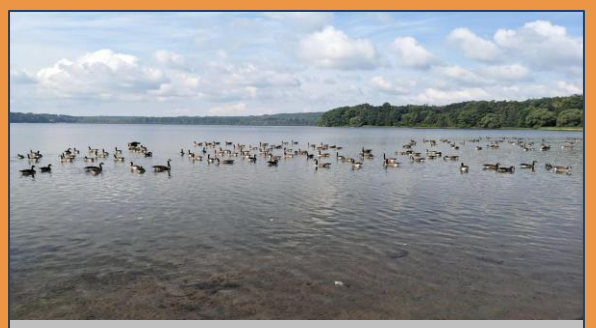
General Observations

- **Yellow/green water colour but good visibility**
- **Plant debris in the water**
- **Algae specks present in water**
- **SMDHU HAS LIFTED BEACH CLOSURE DUE TO ALGAE BLOOM**

Invasive Species

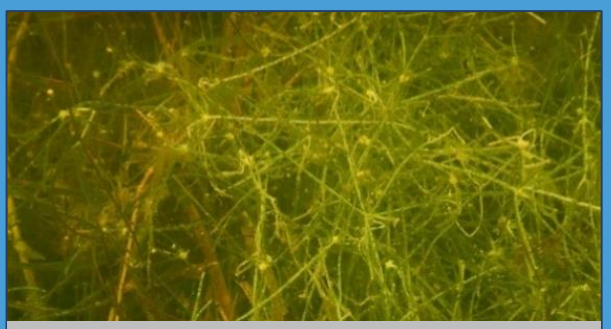
Invasive Species found in or around Little Lake:

- **Starry Stonewort (SSW)** *(Nitellopsis obtusa)* is a green freshwater algae that forms dense mats under the water's surface. SSW spreads rapidly through fragments and can overtake shorelines, interfering with watercraft, swimming, and fishing.
- **Round Goby** (*Neogobium melanostomus*) is a small bottom-dwelling fish that is prevalent in the Great Lakes. They reproduce rapidly and outcompete native species of fish. **Note: Round Goby is present in Midland Harbour but not yet reported in Little Lake.**



Flock of Geese at Little Lake Beach

White Water-Lilies near the shoreline



Underwater photo of SSW

Round Goby

LITTLE LAKE (Midland) CONDITIONS UPDATE

Sample Date: Aug 28, 2023

Temperature at Surface

21.6˚C

Temperatures are lower than the last update.

Water Clarity

3.2 m

Lake Depth

3.5 m

Water clarity is considered excellent when lakebed is visible. The lakebed was obscured by plants and clarity was not being reduced by algae growth.

View from Little Lake boat launch

Bottom Water Dissolved Oxygen

8.8 mg/L

This is plenty for cold and warm water fish species.

Little Lake Outflow Level

22.7 cm

Readings taken at the McMurty Dr. outflow structure indicate that levels have decreased since the last update on August 15.

Little Lake outflow on McMurty Dr.

General Observations

- **Yellowish brown water colour but clear**
- **Algae specks visible in water column**
- **Lots of plant debris floating on surface**
- **BEACH POSTING BY SMDHU DUE TO HIGH *E. COLI* LEVELS**

Geese getting ready for migration

Water colour in the open waters

Invasive Species

Invasive Species that <u>have not been documented around Little Lake</u> but that you should be on the look out for:

- **Giant Hogweed** (*Heracleum mantegazzianum*) is a large noxious plant that is a member of the *Carrot* family. This species is often confused with Queen Anne's Lace.
- Can reach up to 5 meters in height with leaves that are up to 1.5 meters wide.
- <u>Do not touch this plant</u> because its sap contains toxins that cause severe burns to skin and eyes when exposed to light.

Hogweed stem & immature flower

Hogweed leaves

LITTLE LAKE (Midland) CONDITIONS UPDATE

Sample Date: Sept 11, 2023

Temperature at Surface

22.5˚C

Temperatures have increased due to the recent heat wave.

Water Clarity

3.6 m

Lake Depth

3.8 m

Water clarity is considered excellent when lakebed is visible. The lakebed was obscured by plants and clarity was not being reduced by algae growth.

View from Little Lake boat launch

Bottom Water Dissolved Oxygen

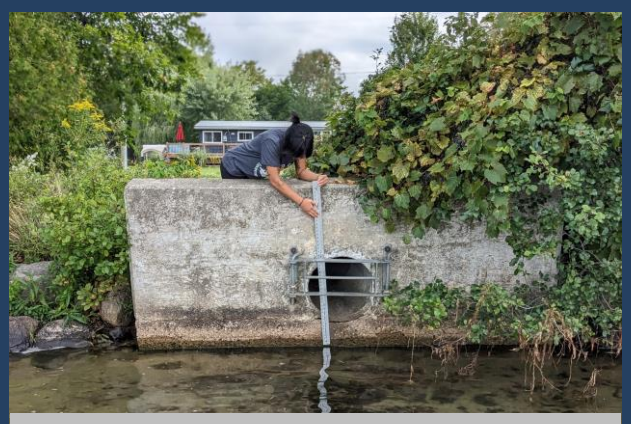
8.6 mg/L

This is plenty for cold and warm water fish species.

Little Lake Outflow Level

22.5 cm

Readings taken at the McMurty Dr. outflow structure indicate that levels have dropped since the last update on Aug 28.



Little Lake outflow on McMurty Dr.

General Observations

- **Water clear, slight greenish brown colour**
- **Some plant debris on surface & on shore**
- **A few specks of algae in water column**
- **Lots of goose droppings on beach**

Monarch butterfly on beach

Evidence of erosion from recent rain

Invasive Species

Invasive Species that <u>have not been documented around Little Lake</u> but that you should be on the look out for:

- **Banded Mystery Snail** (*Viviparus georgianus*) is an invasive invertebrate that has been introduced to the Great Lakes. Mystery snails reproduce rapidly, overtake shorelines, and can carry disease.
- **European Frog-Bit** *(Hydrocharis morsus-ranae)* is an aquatic plant that creates large mats on the water surfaces. These mats can decrease biodiversity and hinder recreational water activities.

Banded Mystery Snail

European Frog-Bit

LITTLE LAKE (Midland) CONDITIONS UPDATE

Sample Date: Sept 25, 2023

Temperature at Surface

19.4˚C

Temperatures have dipped due to lower air temperature, especially at night.

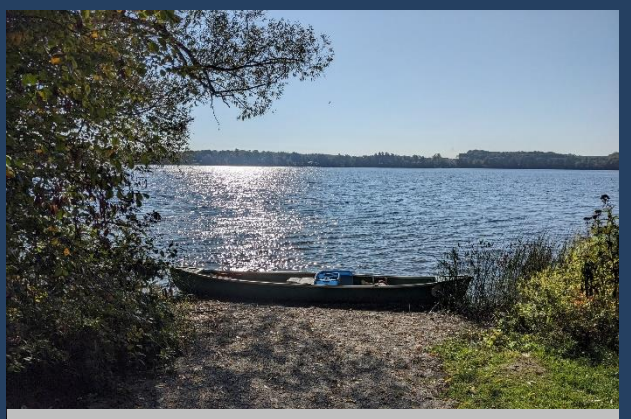
Water Clarity

3.2 m

Lake Depth

3.8 m

Water clarity is considered excellent when lakebed is visible. The lakebed was obscured by plants and clarity was not being reduced by algae growth.



View from Little Lake boat launch

Bottom Water Dissolved Oxygen

9.2 mg/L

This is plenty for cold and warm water fish species.

Little Lake Outflow Level

18 cm

Readings taken at the McMurty Dr. outflow structure indicate that levels have decreased since the last update on Sept 11th.

Little Lake outflow on McMurty Dr.

General Observations

- **Some foam on the lake surface**
- **Lots of washed-up vegetation on beach**
- **Plant debris on lake surface**
- **Very clear, slight yellow green colour**

Fall colours near the shoreline

Beach posted as open

Invasive Species

Invasive Species that may be present in Little Lake that you should be on the look out for:

- **Rusty Crayfish** (*Orconectes rusticus*) is a large invertebrate species that has a distinct rusty coloured patch on the side of its shell and black bands on its claws.
- They compete with other crayfish species and feed on aquatic vegetation that reduces habitat and food for other species.

CLEAN DRAIN DRY
Prevent the Spread of Aquatic Invasive Species

Recreational users are reminded to Clean, Drain and Dry ALL equipment before & after entering the lake!

Rusty patch on shell

Black banding on claw

LITTLE LAKE (Midland) CONDITIONS UPDATE

Sample Date: Oct 16, 2023

End of sampling for 2023 season

Temperature at Surface

12.1˚C

Temperatures dropped due to lower air temperature, especially at night.

Water Clarity

3.3 m

Lake Depth

3.8 m

Water clarity is considered excellent when lakebed is visible. The lakebed was obscured by plants and clarity was not being reduced by algae growth.

View from Little Lake boat launch

Bottom Water Dissolved Oxygen

10.7 mg/L

This is plenty for cold and warm water fish species.

Little Lake Outflow Level

33 cm

Readings taken at the McMurty Dr. outflow structure indicate that levels have increased since the last update on Sept 25th.

Little Lake outlet on McMurty Dr.

General Observations

- **Water clear with bright yellow colour**
- **Lots of goose droppings and feathers on the beach**
- **Washed up vegetation on shore**
- **Lots of foam on the lake surface**

Little Lake outlet structure

Geese congregating at beach

Invasive Species

Invasive Species found in or around Little Lake:

- **Japanese Knotweed** (*Reynoutria japonica*) is a woody-stemmed plant that grows in dense thickets and out-competes native plant species. This plant can damage infrastructure by growing through concrete and asphalt.
- **Periwinkle** (*Vinca major & Vinca minor*) is a small ornamental groundcover plant that commonly escapes from gardens. Periwinkle spreads very quickly and outcompetes native species. This invasive plant is still sold at nurseries and garden centers today.

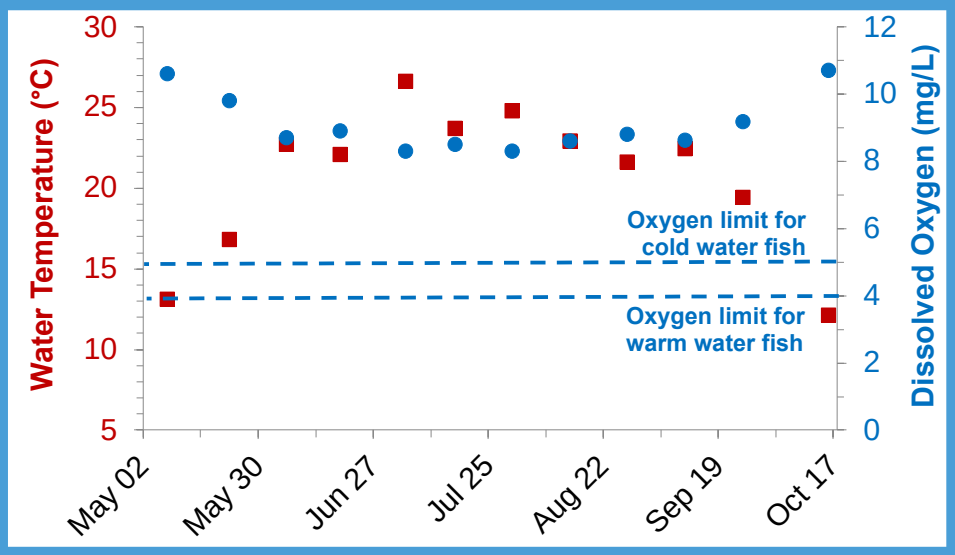
Japanese Knotweed

Periwinkle

LITTLE LAKE (Midland)
SEASONAL WATER QUALITY TRENDS

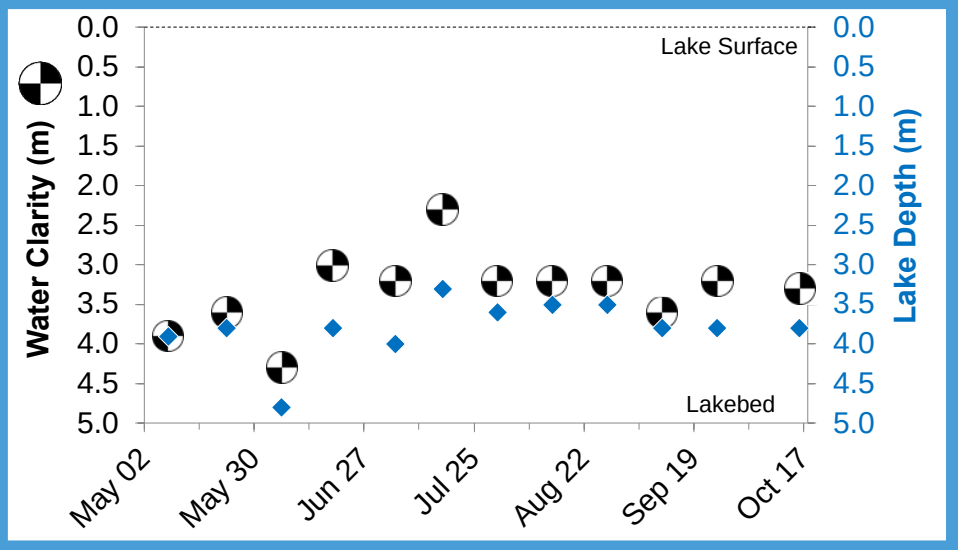
May 8 – Oct 16, 2023

Surface Temperature & Bottom Water Dissolved Oxygen



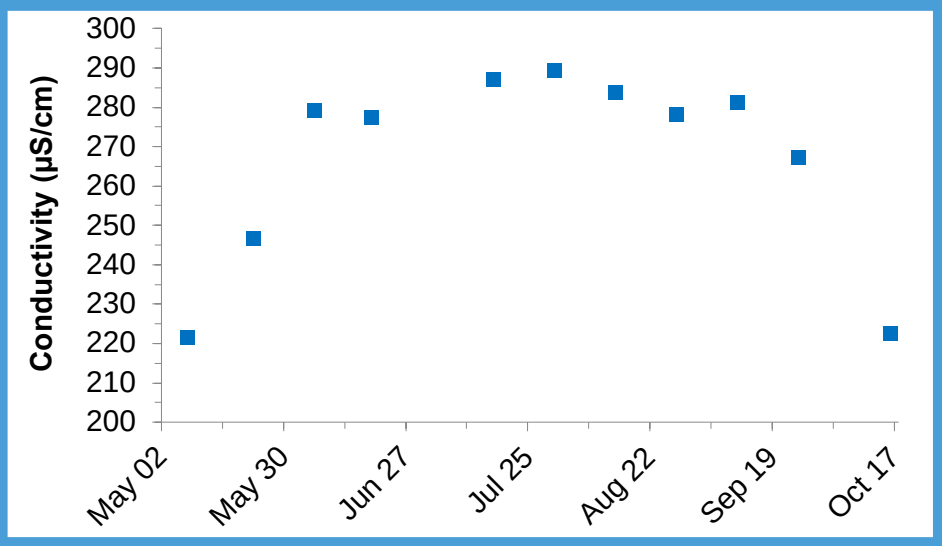
Oxygen levels are well above the Provincial Water Quality Objectives for cold and warm water fish. Water temperature has dropped recently.

Water Clarity & Lake Depth



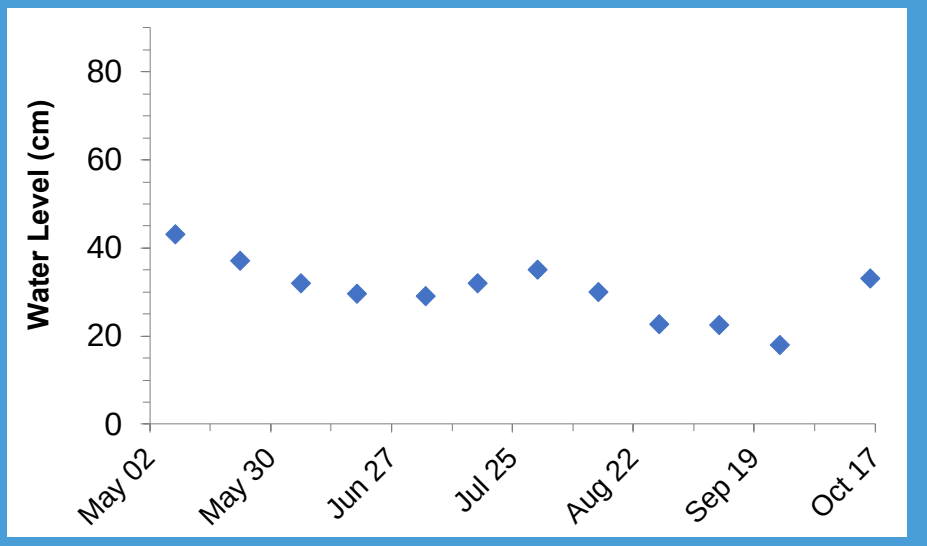
Water clarity in Little Lake is considered excellent if the lakebed is visible, which occurred on May 8th. The bottom is often obscured by plants.

Surface Water Conductivity



Conductivity is related to the amount of dissolved material in the water. Values often increase as lake levels drop and material is more concentrated.

Lake Water Levels at McMurty Dr. Outflow



Little Lake water levels are closely linked to recent rainfall. Water levels are not managed, however the Town maintains the outflow structure.