



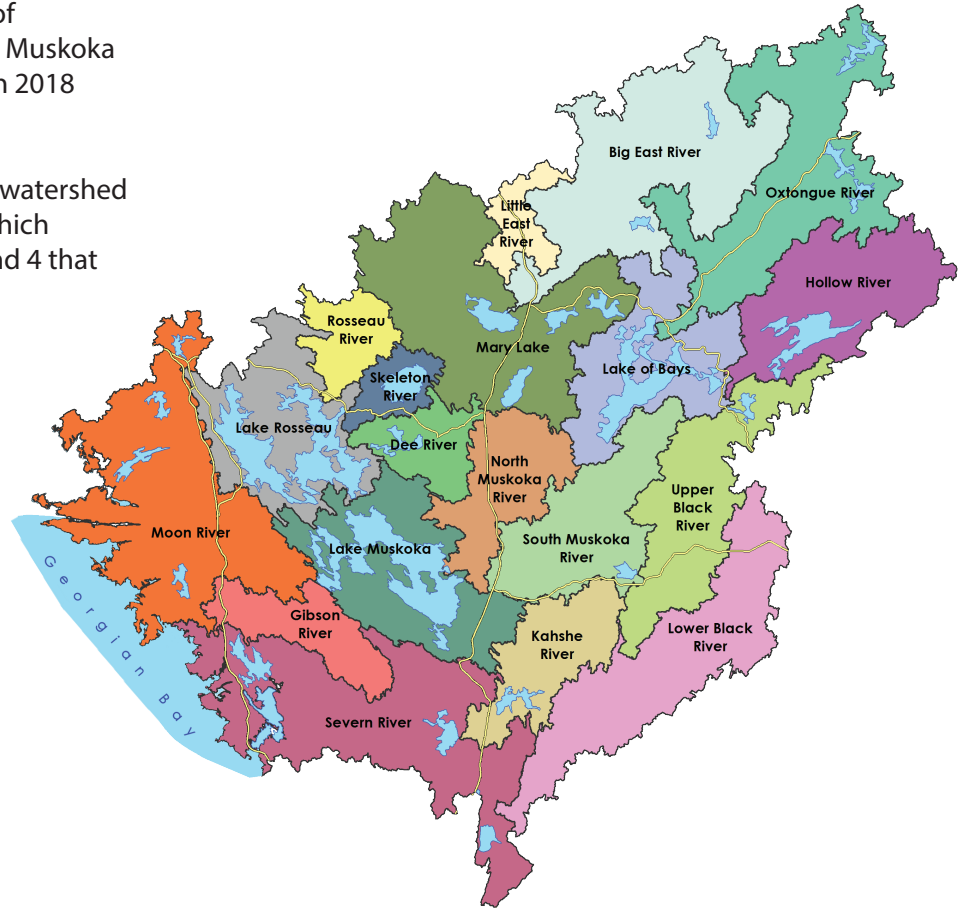
# Muskoka Watershed Report Card

2018

The Muskoka Watershed Report Card is a science-based evaluation of the health of Muskoka's watersheds. It is produced by Muskoka Watershed Council every four years, with 2018 being the fifth Report Card.

The Report Card provides a snapshot of watershed health by evaluating 8 indicators, 4 of which measure the health of the watershed, and 4 that consider potential threats.

## Quaternary Watersheds of Muskoka



### Health Indicators

- Total Phosphorus
- Calcium
- Benthic Macroinvertebrates
- Interior Forest

### Threat Indicators

- Climate Change
- Species at Risk
- Invasive Species
- Fragmentation

A watershed is an area of land that drains to a river, lake or stream. The Muskoka Watershed refers to all watersheds lying totally or partially within the District Municipality of Muskoka and includes areas in Algonquin Park, the Township of Seguin and the Township of Algonquin Highlands. All water in the Muskoka Watershed eventually flows into Georgian Bay.

The map above shows the nineteen subwatersheds within the Muskoka Watershed. A healthy watershed not only benefits our lakes, forests, and wildlife, but also supports our health, our communities, and the economy.



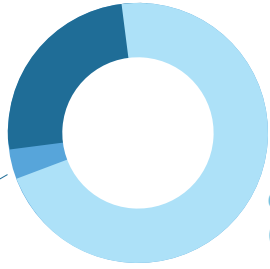
Muskoka Watershed Council (MWC) is a volunteer-based non-profit organization with the mandate to champion watershed health. MWC is comprised of representatives from a wide range of stakeholders and has been providing a coordinated and science-based voice on issues affecting the environmental quality of our watersheds since 2001.

# Phosphorus Concentrations in Lakes

## Trophic Status of Sampled Lakes (2001-2017)

30% Mesotrophic  
(Medium Nutrients)

1% Eutrophic  
(High Nutrients)



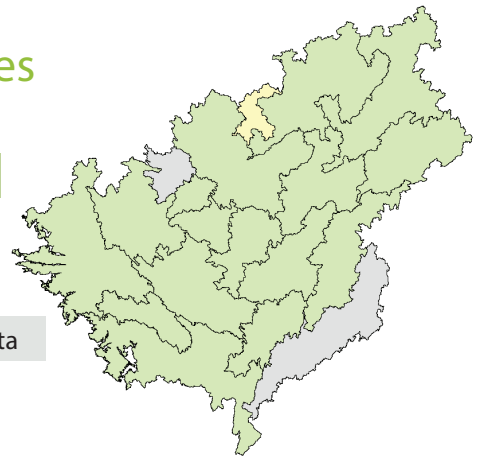
69% Oligotrophic  
(Low Nutrients)

Not Stressed

Vulnerable

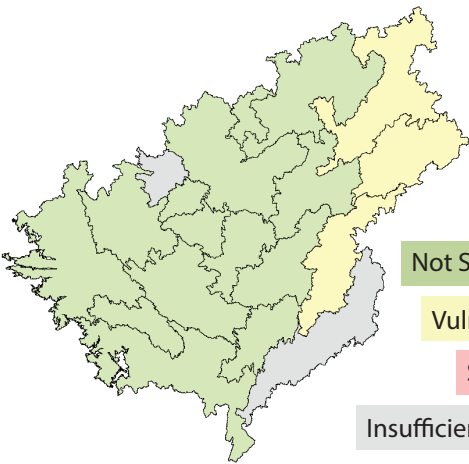
Stressed

Insufficient Data



Phosphorus is a nutrient in limited supply in most Precambrian Shield lakes & generally controls the growth of algae. In general, lakes in Muskoka have had stabilized phosphorus levels in recent years.

# Calcium Concentrations in Lakes



Not Stressed

Vulnerable

Stressed

Insufficient Data

Calcium is the

# 5th

most abundant natural element

### Did You Know?

187 lakes across Muskoka were assessed for the calcium indicator.



56% of lakes sampled for the Report Card, have calcium concentrations below the threshold of 2.5 milligrams of calcium per Litre, the amount when Daphnia become stressed. Daphnia are keystone herbivores in lake food webs.

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# Benthic Macroinvertebrates

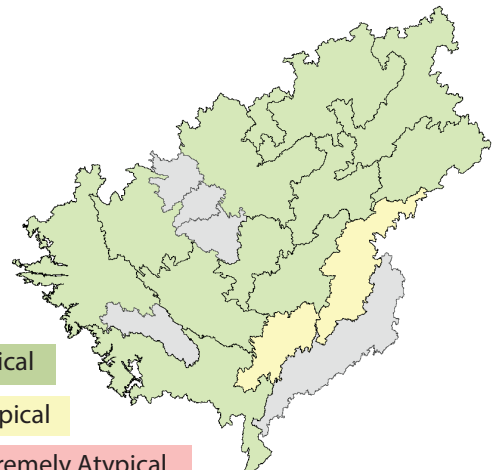
### Did You Know?

These creatures are small but large enough to see with the naked eye (macro), have no backbone (invertebrate) and live on the bottom of lakes & rivers (benthic).

The District Municipality of Muskoka has continuously sampled

# 45

lakes across the watershed to monitor benthos through the Biological Monitoring Program with lake associations.



Typical

Atypical

Extremely Atypical

Insufficient Data



Benthos are used as a biological indicator of water quality & habitat condition. Healthy lakes support high species richness & abundance.

## Interior Forest

Interior forest is habitat

# DEEP

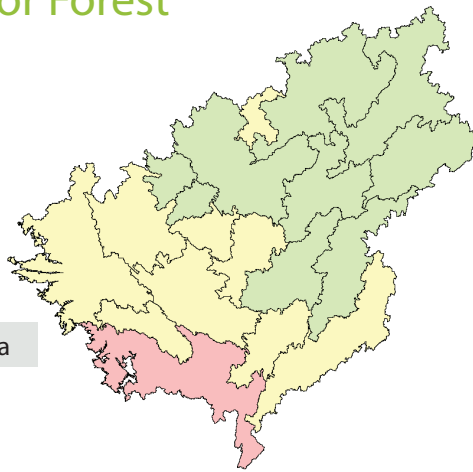
in the forest which is secluded from development and open areas.

Not Stressed

Vulnerable

Stressed

Insufficient Data



Did You Know?

46% of the Muskoka Watershed is interior forest.

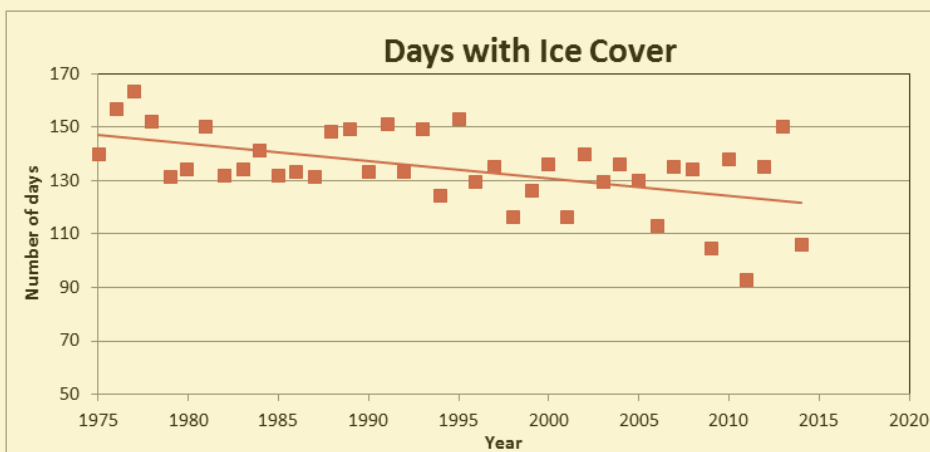
Interior forest is important for the filtering and absorption of water, sequestration of carbon dioxide, and provides essential habitat to wildlife.

## Climate Change in Muskoka

In Muskoka, trends include an increase in surface water temperature & declining ice coverage days.



The typical year by mid-century is likely to be 3-4°C warmer and 10% wetter than present.



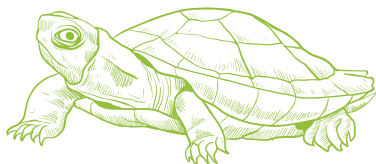
The number of days with ice cover on lakes from 1975 to 2016. In 1975, there was an average of 140 days with ice on the lakes. By 2016, an average of 121 days of ice coverage was observed.

## Species at Risk in Muskoka

There are

# 46

species at risk in the watershed



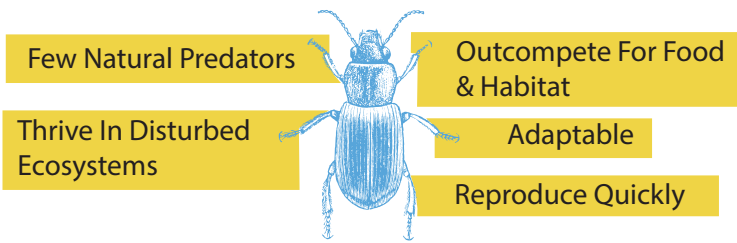
Did You Know?

Species at risk are classified as special concern, threatened, endangered or extirpated

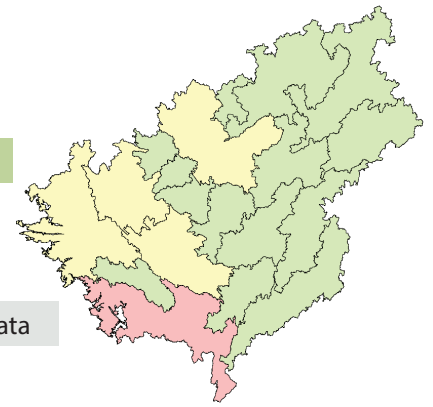
Being at the southern edge of the Canadian Shield in Ontario, Muskoka is the northern limit for many southern species, and the southern limit for many northern species. This has resulted in biologically diverse ecosystems that support many species that are at risk.

# Invasive Species

## Main characteristics of invasive species



- Not Stressed
- Vulnerable
- Stressed
- Insufficient Data

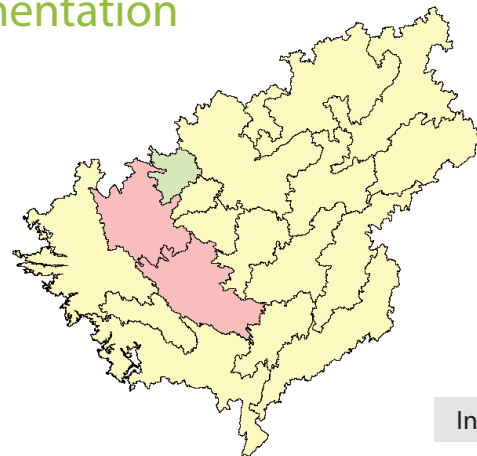


The Ministry of Natural Resources and Forestry (MNR) has identified **24 Invasive Species** of concern in Ontario  
**7 of which are found in Muskoka**



## Fragmentation

**Did You Know?**  
82% of the Muskoka Watershed is natural area. This includes lakes, wetlands, forests, rock barrens, and other natural ecological communities.



- Not Stressed
- Vulnerable
- Stressed
- Insufficient Data

Development such as roads, urban areas, and railways disrupt large natural areas like interior forest and contribute to habitat loss, decreased biodiversity, and a fragmented landscape.



## It's Your Turn! Top 5 Actions You Can Take

1. Get involved in citizen science programs! Key ones include:
  - Lake Partner Program (calcium and phosphorus)
  - EDDMapS (invasive species)
  - iNaturalist (Species at Risk reporting)
2. Prevent the spread of invasive species
3. Reduce your carbon footprint
4. Volunteer for your local lake association or environmental organization
5. Support your municipality's green initiatives such as decreasing energy consumption and greenhouse gas emissions

