



Partnering with nature

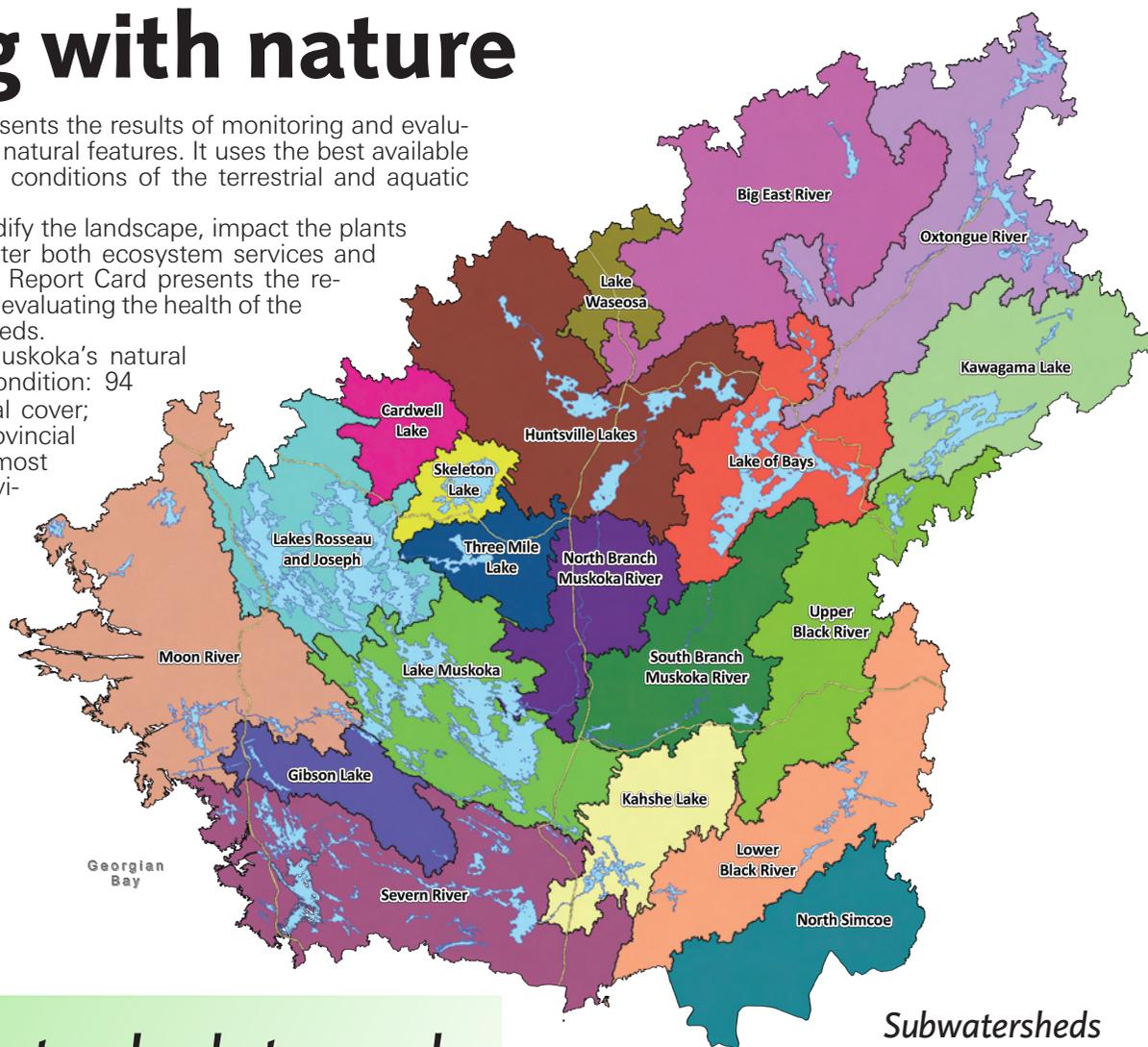
This Watershed Report Card presents the results of monitoring and evaluating the health of our region's natural features. It uses the best available science and is a snapshot of current conditions of the terrestrial and aquatic resources within the watershed.

As people live and work, they modify the landscape, impact the plants and animals in the watershed, and alter both ecosystem services and ecosystem functions. The Watershed Report Card presents the results of monitoring these changes and evaluating the health of the natural features of Muskoka's watersheds.

Unlike some parts of Ontario, Muskoka's natural areas, in general, are in excellent condition: 94 percent of the watershed is in natural cover; water quality is much better than provincial guidelines for recreational use; and most wetlands are intact. We are in the enviable position of being able to develop the watersheds in a sustainable manner.

It should be noted, however, that not all parts of Muskoka enjoy this high level of ecological health. Some areas are already showing early signs of degradation and local stewardship programs are needed to reverse these trends and restore watershed health.

Careful monitoring and local benchmarking will assist in understanding the human impact on natural processes and encourage modified behavior before significant environmental damage is done.



Be a watershed steward

- Maintain large natural areas
- Retain shorelines in a natural state
- Protect wetlands
- Reduce your carbon footprint

Subwatersheds of the Muskoka watershed

A watershed is as 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 watersheds eventually flows into Georgian Bay.



Grading Muskoka's subwatersheds

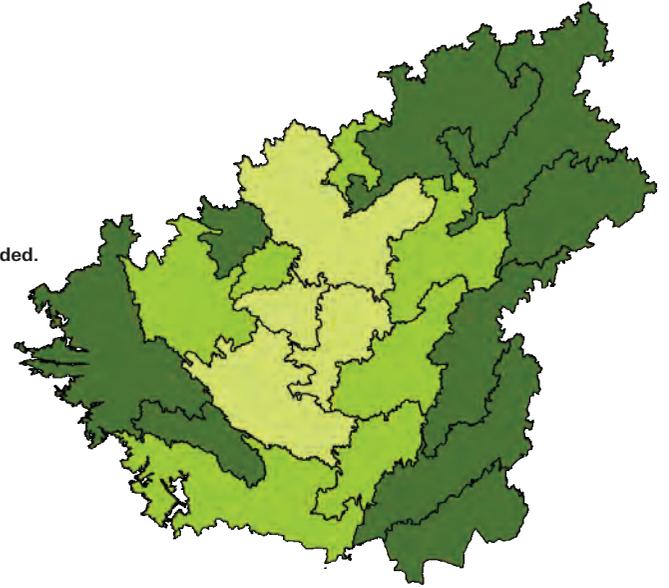
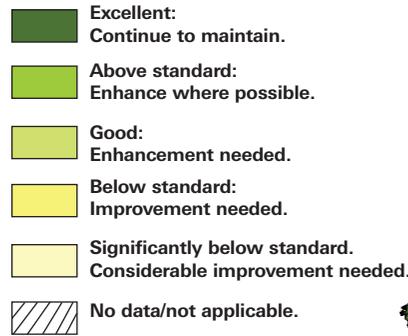
The Watershed Report Card presents the results of monitoring the health of our watersheds. It has established benchmarks that use the best available science to show a snapshot of the current condition of our land and water resources. Muskoka's benchmarks are considerably higher than those used in southern Ontario, to reflect the healthier condition of our watershed. By measuring ourselves against these higher standards it will be possible to detect change early enough to allow mitigation programs to be implemented.

Overall, Muskoka's natural areas are in excellent natural condition. The watershed is 94 percent in natural cover. The water quality is much better than provincial guidelines for recreational use and most wetlands are intact.

We are in the unique position of being able to achieve sustainable development in the watershed, but not all parts of Muskoka enjoy this high level of ecological health. Settlement and development have come with an environmental cost, and local stewardship programs are needed to reverse these trends and restore watershed health.

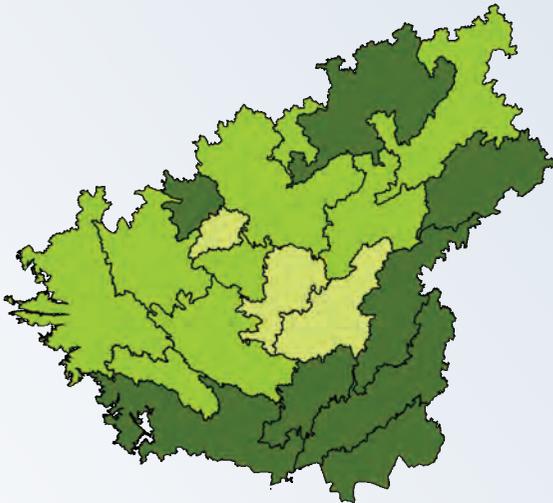
Our understanding of the health of our watershed is improving as more data become available. For the first time we are able to provide detailed information on a subwatershed basis. Find your subwatershed on the map on the first page. Then determine the health of your subwatershed based on a variety of land and water indicators shown on the maps below.

Individual indicators have been combined to give land and water grades on a subwatershed basis. The combined land and water indicator map shows the overall grade for all the subwatersheds of Muskoka. For more detail on your subwatershed visit our web site at www.muskokaheritage.org/watershed.



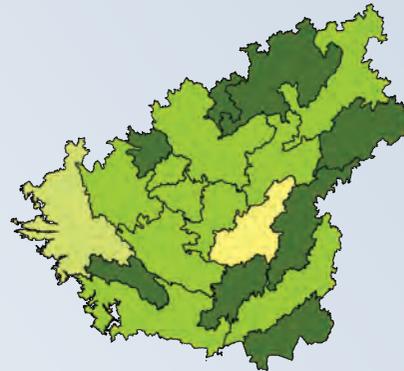
Combined land and water indicator grades for all subwatersheds in Muskoka show the watershed is *above standard*

Water indicators

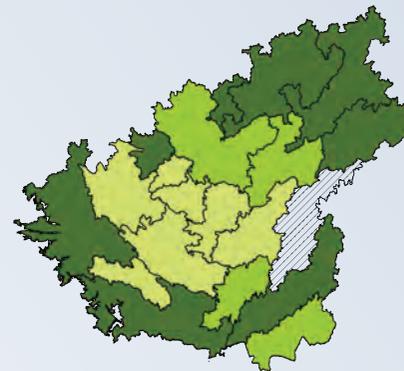


Combined water indicator grades show that the watershed is *above standard*

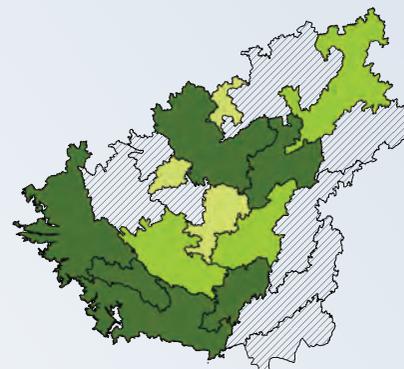
The health of the water in the watershed has been evaluated based on lake surface area that is Over Threshold for Total Phosphorus, natural shorelines, and mercury levels in fish. Good water quality and healthy fish communities are the essence of Muskoka and make it a great place to live. They are also the heart of a strong and vibrant economy. The continued enjoyment of tourism, second homes, and many recreational pursuits are tied to maintaining healthy lakes and rivers. The combined water indicator shows that the water resources of the Muskoka watershed are above standard. Protecting shorelines and reducing phosphorus inputs today will mean better water quality in the future.



Lake surface area in a watershed that is Over Threshold for Total Phosphorus is a measure of recreational water quality. In order to maintain the very good water quality across the watershed, phosphorus reduction activities such as shoreline renaturalization and septic re-inspection programs should be supported.



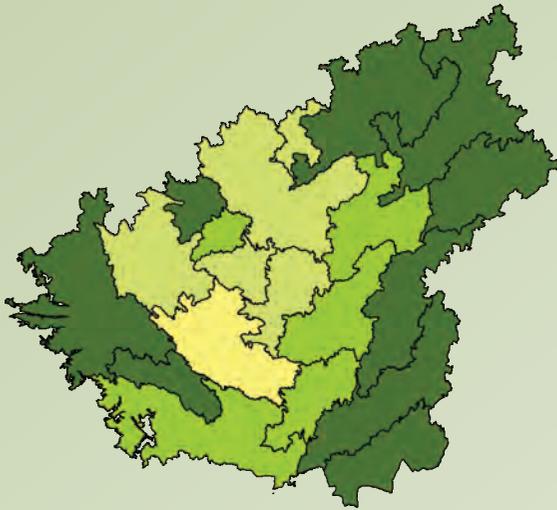
Natural shoreline has been used as an indication of the quality of fish habitat. Many fish species require overhanging vegetation, rock shoals, and aquatic vegetation found in undisturbed sites. Continued protection of this sensitive area is necessary to ensure healthy fish communities and sustainable watershed ecosystems.



Mercury level in fish is an indicator of contamination of lakes and rivers from rain and snow. Mercury in lakes does not pose a significant human health threat. However, wildlife, such as loons are less tolerant to mercury and are monitored for early indications of contamination. Continued programs at the national and international level are required to reduce mercury emissions from industrial sources.

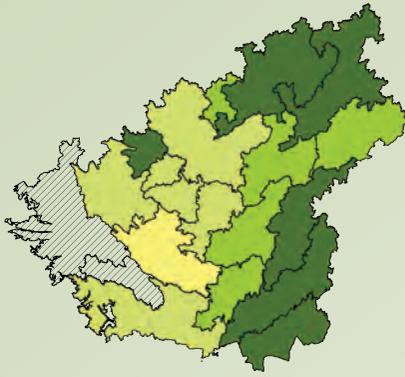


Land indicators

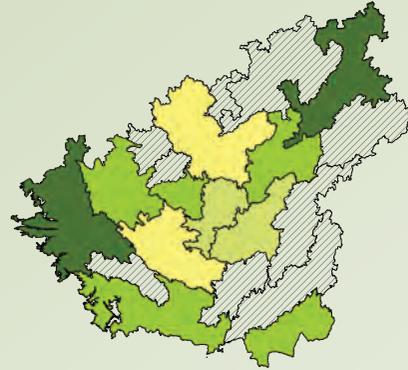


Combined land indicator grades show that the watershed is *above standard*

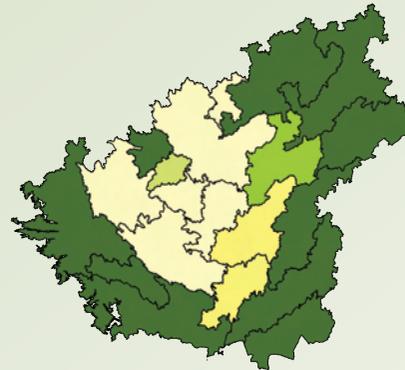
The health of the land in the watershed has been evaluated based on natural cover, large natural areas, interior forest, riparian areas, and managed and protected areas. Combined land indicators show that the land resources of the Muskoka watershed are above standard, but continued stewardship of our shared watershed resources is necessary to provide a healthy and productive watershed for future generations. Decreases in the amount of large natural areas diminish the watershed's ability to maintain good water quality, to support healthy tourism, forestry and recreational industries, and to provide habitat for a wide variety of wildlife.



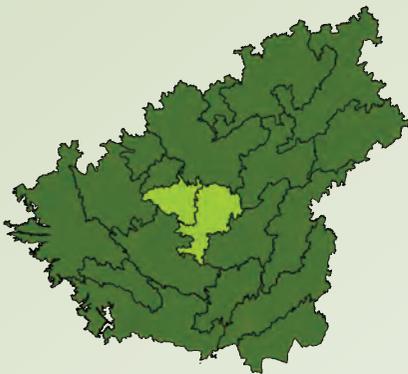
Interior forest is a forested area with a 100-metre forested buffer surrounding it. These areas are important to maintain biodiversity and support many bird and plant species. Limiting new road construction and focusing development in urban areas will protect these forest areas and support vibrant healthy communities.



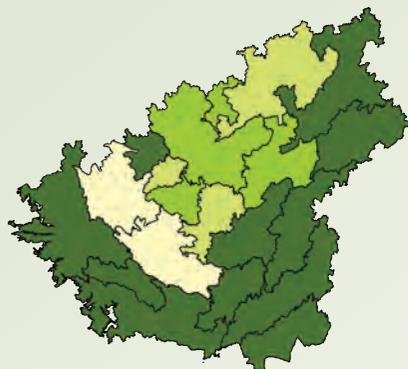
Riparian areas are defined as the shoreline of a lake plus an area 20 metres inland from the shore. A riparian area made up of a healthy tree, shrub, and grass layer will protect water quality and provide essential habitat for shoreline animals. On many properties the native grass and shrub layers are removed.



Managed and protected areas are natural areas managed by private landowners or government agencies for their ecological values. Private land stewardship is especially important in the central portion of the watershed where the majority of the land is privately owned. Although less than five percent of the watershed is under active private land stewardship there has been an increase in participation in programs such as the Managed Forest Tax Incentive Program, Environmental Farm Plans and donations to land trusts.

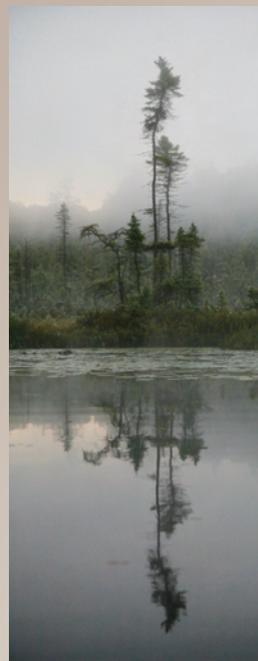


Natural cover is the total area in the watershed covered by lakes, wetlands, forests and rock barrens. Natural cover defines Muskoka and supports the tourism, recreational and retirement-based economy. Focusing future development in urban areas will support our vibrant small towns and the natural values of the area.



Large natural areas are natural areas that are 200 hectares or greater. These areas are important to maintain biodiversity, good water and air quality; to sequester carbon; and to provide erosion and flood control. Future development needs to be balanced with these natural areas to maintain healthy watersheds that support the local tourism and recreational economy.

Wetlands



Wetlands are defined as lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface. The wetland cover in Muskoka is about 12 percent, but many of our subwatersheds are naturally comprised of less than 10 percent wetlands. A value of no net loss of wetlands from the 2010 level will be used as the benchmark for the grading of wetlands in 2014. Wetlands are especially important in the watershed because they:

- recharge groundwater
- maintain and improve water quality
- aid in flood control
- protect shorelines from erosion
- trap sediments
- provide important habitat
- immobilize pollutants
- provide timber, fish and wild rice

A changing climate

The biggest unknown in watershed health is the impact of climate change. What will climate change mean in Muskoka?

Warmer summers will see increased evaporation of water from lake surfaces and increased transpiration of water by wetlands and forests, meaning less runoff, less water, lower lake levels, and longer periods of drought. Warmer winters will see more winter thaws and winter rains potentially leading to more flooding. If the snowpack is reduced due to mid-winter thaws, then less snow pack remains for the spring runoff, which could result in an earlier onset of drought and lower water levels.

Warmer lakes will likely lead to:

- less habitat for lake trout
- more algae blooms and possibly blue-green algae blooms

Warmer temperatures will likely:

- allow a greater range of insects and disease in our forests, such as the Mountain Pine Beetle
- allow more invasive species, such as ticks, which carry Lyme disease
- result in more smog days and in human health impacts, such as increases in asthma and lung disease
- eliminate winter recreation, although summer recreation may be enhanced
- extend the growing season

More severe weather events will likely:

- damage large tracts of commercially important forests
- overload municipal infrastructure
- result in more damage to agricultural crops

Drier conditions will likely lead to more drought.

Rapid change in habitat conditions will likely reduce biodiversity.



Get involved and be a watershed steward

When all is said and done, the fate of sustainable management of a watershed lies in the hands of grassroots residents as they go about their day-to-day business. It is the citizens of the watershed who must generate the interest and enthusiasm to create, continue and expand local projects which lead to positive actions and results.



1. Maintain large natural areas

- Practice sustainable forestry
- Use existing roads and rights of way for access and utility corridors
- Reduce cleared areas in the rural area

2. Retain shorelines in a natural state

- Maintain a wide natural buffer of plants and trees around shorelines of lakes, rivers and streams
- Obey speed signs in erosion-sensitive, low-wake areas
- Reduce grassed lawns in the waterfront area and minimize the use of fertilizer
- Pick up after pets
- Plant native species

3. Protect wetlands

- Leave wetlands alone
- Keep recreational vehicles out of the wetland
- Learn about wetland values

4. Reduce your carbon footprint

- Plant native trees
- Reduce your use of electricity
- Improve energy efficiency of your home and vehicle
- Reduce waste



The Muskoka Watershed Report Card was made possible with the support of:

Photography by John McQuarrie
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